Advances in Management & Financial Reporting
Volume 4, Issue 1 (2026)
Website: https://advancesinresearch.id/index.php/AMFR
OPEN ACCESS
e-ISSN: 2985-7538

Augmented Reality (AR) Marketing and Consumer Responses: A Study in the Retail Industry in Indonesia

Miracle Arnold [1*], Fatik Rahayu [2]

[1] Universitas Trisakti, Jakarta, Indonesia. Email: cenot03@gmail.com
[2] Universitas Trisakti, Jakarta, Indonesia. Email: fatik.rahayu@trisakti.ac.id

ARTICLE HISTORY

Received: November 26, 2025
Revised: December 13, 2025
Accepted: December 15, 2025

DOI :
https://doi.org/10.60079/amfr.v4i1.676

Advances in Research

ABSTRACT

Purpose: This study analyzes the effect of Augmented Reality (AR) stimuli, consisting of vividness, augmentation, product informativeness, and personalized recommendations, on consumers' internal responses (enjoyment, immersion, perceived usefulness, and choice confidence) and their impact on purchase intention in the context of e-commerce in Indonesia.
Research Method: The study used a quantitative approach with Structural Equation Modeling (SEM). Data were collected via an online survey of 228 e-commerce users in Indonesia who had used AR features, enabling comprehensive testing of causal relationships among constructs.
Results and Discussion: The results show that vividness and augmentation increase enjoyment, while augmentation also strengthens immersion and choice confidence. Personalized recommendations positively affect perceived usefulness. Conversely, product informativeness tends not to support the strengthening of internal responses and, in some relationships, shows a negative direction. The findings confirm that perceived usefulness and immersion are the main determinants of purchase intention, so that cognitive mechanisms and immersive experiences are more crucial than affective responses alone.
Implications: Theoretically, this study reinforces the Stimulus–Organism–Response (SOR) model in AR marketing. In practice, companies need to prioritize strengthening augmentation and personalization, and curating product information to reduce cognitive load and optimize purchase intent.

Keywords: augmented reality marketing; stimulus ar; consumer responses; perceived usefulness; purchase intention.

Introduction

The development of digital technology has given rise to various marketing innovations that have changed how companies interact with and build relationships with their consumers. One of the innovations that has shown the most rapid growth is Augmented Reality (AR). This technology combines virtual elements with the real world, enabling real-time product visualization and information. In the digital retail industry, AR has become an important strategy that not only enhances visual appeal but also increases consumer emotional engagement and reduces uncertainty in the purchasing decision-making process. According to Zhou et al. (2025), AR has the potential to provide a more realistic and immersive shopping experience, bridging the gap between online and offline experiences. The Insights

OPEN ACCESS
e-ISSN: 2985-7538

report (2021) also shows that the global AR market value is increasing significantly every year and is projected to exceed billions of dollars by the middle of this decade, in line with the increasing adoption of this technology in the retail sector. This phenomenon is also occurring in Indonesia, where AR adoption is becoming more widespread through e-commerce platforms such as Tokopedia, Shopee, and IKEA Place, which have introduced virtual try-on features to help consumers evaluate products more informatively before purchasing. According to Rahayu et al. (2024), sensory marketing is an essential step in creating memorable customer experiences across various business contexts, including traditional and digital retail sectors. This fact underscores the need to understand how AR stimuli deeply affect consumers' psychological processes. Therefore, this study is relevant to answering practical and theoretical questions about how AR stimulus elements shape consumers' affective and cognitive responses, with implications for purchase intention, particularly in the digital retail industry in Indonesia.

Previous research on Augmented Reality (AR) marketing shows that this technology serves as a stimulus that enriches the shopping experience by eliciting internal affective and cognitive responses, which then drive purchase intention and purchasing behavior. On the affective dimension, variables such as enjoyment and emotional involvement arise when consumers experience pleasure and excitement while interacting with product visualizations; this is in line with the findings of Paramita & Maulidiani (2019) that AR influences consumer experience through perceptions of enjoyment and usefulness, which have a direct impact on purchase intention. Rengganis et al. (2020) reinforce this argument by confirming that AR features provide a new shopping experience through 3D product visualization and interaction, thereby increasing consumer engagement. In the post-pandemic retail context, Suryawijaya & Aqmala (2023) found, through a survey of 100 respondents, that AR has great potential to increase customer satisfaction, confirming the role of satisfaction variables as evaluative outcomes of the AR experience. At the cognitive level, perceived usefulness is key because AR helps consumers evaluate products more informatively and reduces uncertainty, while technological characteristics such as interactivity, novelty, and hedonic value act as drivers of sustained adoption. as demonstrated by Gabriel et al. (2023) in a study of 549 respondents, which found a significant influence of AR characteristics on sustainable use and purchase intention.

Consistency of findings is also seen in Ramdani et al. (2022), who confirmed the influence of AR characteristics on consumer perceptions, and Amanah et al. (2023), who showed that usefulness and enjoyment have a positive effect on purchase intention. Cross-sector evidence, involving more than 800 respondents, further confirms that AR is effective because it provides realistic previews, increases satisfaction, and strengthens confidence in purchasing decisions. In the latest context, Fernando et al. (2024) showed increased engagement through the integration of virtual and physical experiences, while Rinaldi et al. (2024) proved an increase in brand awareness among 260 consumers. Sudirjo et al. (2024) confirm a positive relationship between AR and purchasing decisions across 170 consumer surveys, which, overall, lead to reduced uncertainty, increased trust, brand loyalty, and a more immersive digital experience.

Although previous research has consistently shown that Augmented Reality (AR) marketing positively impacts shopping experiences and purchase intent, there remains a significant gap at both the theoretical and empirical levels. Many studies emphasize the effectiveness of AR through perceptions of enjoyment and usefulness, consumer engagement, and technological characteristics such as interactivity, novelty, and hedonic value. These findings are reinforced in the post-pandemic retail context by evidence that AR can increase customer satisfaction (Suryawijaya & Aqmala, 2023), as

OPEN ACCESS
e-ISSN: 2985-7538

well as by other studies showing that AR characteristics shape consumer perceptions and drive purchase intent (Ramdani et al., 2022; Amanah et al., 2023). However, the existing literature is still limited in its comprehensive detailing of the psychological mechanisms, particularly how AR stimuli influence internal responses, including affective aspects such as enjoyment and immersion, as well as cognitive elements such as perceived usefulness and choice confidence, before culminating in purchase intention. As a result, a more detailed understanding of the cause-and-effect pathway within the Stimulus-Organism-Response framework is still lacking to explain the relative contribution of each internal response to consumer decisions. Another crucial gap is the lack of testing of response dynamics based on usage experience. Cue-utilization and habituation theories explain that responses to new stimuli may decrease as consumers become more accustomed to them, so the effects of AR may differ between new and repeat users (Easterbrook, 1959; Tellis, 1997). In addition, previous research has tended to highlight the benefits of informativeness without testing its negative consequences, namely the possibility of cognitive overload when product information is too dense, which can interfere with evaluation and reduce confidence in choosing. With the increasing adoption of AR, which combines virtual and physical experiences and enhances engagement and purchasing, studies are needed that build on previous findings by testing more detailed internal mechanisms and considering the potential for reduced responses and cognitive load.

Based on these theoretical and empirical gaps, this study offers novelty in three main aspects. First, this study not only confirms the general influence of AR but also formulates more detailed testing by placing four AR stimuli as initial drivers that simultaneously influence consumers' internal responses in two domains, namely affective (enjoyment, immersion) and cognitive (perceived usefulness, choice confidence), before culminating in purchase intention. Second, this study broadens the understanding of the dynamics of AR effectiveness by linking the results to cue-utilization and habituation theories, thereby providing a basis for explaining possible differences in responses between new and repeat users that have not been examined in depth (Easterbrook, 1959; Tellis, 1997). Third, this study explicitly examines the possible negative consequences of product informativeness, namely the potential for cognitive overload, which can reduce the quality of product evaluation and weaken confidence in choosing. Thus, the purpose of this study is to examine the influence of four AR stimuli on internal affective and cognitive responses and their impact on consumer purchase intention in the digital retail industry in Indonesia, while strengthening the academic contribution of the Stimulus–Organism – Response (SOR) model in the context of AR marketing and to generate practical implications for designing informative yet optimal AR experiences, in line with the argument that relevant and interactive digital marketing shapes consumers' perceptions of usefulness and trust, which ultimately increases purchase intention (Rahayu, 2023).

Literature Review and Hypothesis Development

Augmented Reality

Augmented Reality (AR) is an interactive technology that integrates digital elements into the real environment, creating a new perceptual experience that enriches user interaction with virtual objects. In the context of modern marketing, AR is considered an innovation that revolutionizes how consumers interact with products through four key elements: vividness, augmentation, product informativeness, and personalized recommendations. According to Attri et al. (2024), vividness refers to

OPEN ACCESS
e-ISSN: 2985-7538

the clarity, depth, and visual detail displayed by the AR system, which plays a vital role in creating a perception of spatial presence and realism for the products shown. When AR displays product visualizations with high levels of detail and graphic quality that resemble real objects, consumers have a more vivid and convincing shopping experience. Park & Yoo (2020) add that vividness enhances consumers' perception of interactivity and engagement because users feel as if they are physically interacting with the product. This aligns with Maknunah's (2025) view, which emphasizes that AR-based interactive technology plays a crucial role in triggering perceptions of psychological and emotional realism, thereby driving deep engagement between consumers and brands.

The second element, augmentation, reflects the AR system's ability to expand physical reality by adding contextually relevant digital elements. Poushneh (2018) states that the level of augmentation determines the extent to which users can control their interactions with virtual elements in the shopping environment. AR, when designed with an optimal level of augmentation, can enhance the user experience without causing excessive cognitive load. Hilken et al. (2018) emphasize that AR's augmentation capability serves not only to add digital elements but also to integrate a consistent omnichannel experience across various consumer touchpoints. In the context of the luxury industry, Maknunah (2025) found that a high level of augmentation strengthens emotional engagement and brand value perception, as consumers feel they are experiencing an exclusive experience that combines the real and virtual worlds. Thus, augmentation is not merely a technical process, but also a strategic dimension that influences overall consumer value perception and experience. Furthermore, Attri et al. (2024) add that the combination of vividness and augmentation creates an immersive visual and interactive experience, enhancing product credibility and minimizing consumer uncertainty about the quality of products they have not tried directly.

Product informativeness and personalized recommendations are two important aspects that enrich the informational and personalization functions of AR. Kumar & Srivastava (2022) define product informativeness in the context of AR as the extent to which the system can provide relevant, clear, and detailed product information in both visual and textual forms. When the information presented is easy to understand and contextually relevant, consumers can evaluate products more accurately, thereby improving decision-making efficiency. However, too much information can cause cognitive overload, so the balance between information depth and ease of processing is crucial in AR experience design. Meanwhile, Smink et al. (2020) highlight the importance of personalized recommendations in creating relevant user experiences. Personalization features allow AR systems to tailor content based on user preferences, interaction history, or purchase context, thereby increasing consumers' perception of value and closeness to the brand. This kind of adjustment strengthens the effect of emotional engagement and reduces the perception of intrusiveness from technology-based interactions. Hilken et al. (2018) also argue that the level of personalization in AR supports the formation of long-term relationships between consumers and brands by providing a more relevant, efficient, and meaningful experience.

Consumer Responses

Consumer responses refer to a series of affective and cognitive evaluations that arise when consumers interact with a marketing or technology experience, which in this context is understood through four primary constructs, namely enjoyment, immersion, perceived usefulness, and choice confidence, then culminating in purchase intention as the tendency to make a purchase. In an interactive technology-based marketing environment, Kowalczuk et al. (2021) emphasize that affective responses,

OPEN ACCESS
e-ISSN: 2985-7538

such as enjoyment and immersion, go hand in hand with cognitive responses, such as perceived usefulness and choice confidence, as internal mechanisms that explain why a digital experience can change consumer behavior orientation. Therefore, consumer responses cannot be understood merely as fleeting "impressions," but rather as psychological processes that gradually shape consumer evaluations, engagement, and beliefs. Enjoyment, as explained by Holdack et al. (2022), acts as a mediator linking technology acceptance to the intention to use the service, suggesting that the pleasure users experience can transform evaluation into a tendency to act. At the same time, immersion enhances the quality of the experience by providing a sense of deep involvement, which, according to Vo et al. (2022), is associated with customer responses and adoption intentions because consumers feel "immersed" in the experience. Within this framework, purchase intention is viewed as a behavioral outcome formed when positive emotions, engagement, perceived benefits, and choice certainty mutually reinforce each other, rather than as a singular consequence of a single standalone factor.

On the affective dimension, enjoyment is understood as the intrinsic pleasure that arises from engaging with digital experiences, leading consumers to perceive the product exploration process as valuable in itself. Holdack et al. (2022) emphasize that enjoyment reinforces acceptance and the intention to use, as consumers tend to continue behaviors that generate positive emotions. In a mobile AR setting, Naveen et al. (2025) highlight that enjoyment is intertwined with other emotional responses and is related to consumer behavior, thereby influencing purchase intention not only by rational considerations but also by the quality of affect during interaction. Immersion complements this mechanism by creating conditions of deep engagement that make consumers focused, feel present, and experience something that feels more "real" within the limits of perception. Vo et al. (2022) emphasize that immersive experiences encourage customer responses and adoption intentions because consumers experience psychological closeness to the experience they are undergoing. Issock et al. (2024) also show that enjoyment is related to anticipated flow in virtual environments, which conceptually explains how pleasure and immersion can prolong engagement duration and strengthen behavioral intentions. Thus, enjoyment and immersion can be understood as affective pathways that drive purchase intention by creating enjoyable, interesting, and attention-grabbing experiences, making it easier for consumers to move from exploration to firm purchase intention.

On the cognitive dimension, perceived usefulness describes the belief that digital experiences provide functional benefits, such as aiding understanding, clarifying evaluation, or improving the efficiency of the decision-making process. In their study of AR system acceptance, Kazakou et al. (2025) show that perceived usefulness is closely related to technology acceptance, with perceived benefits serving as the rational basis for behavioral intention. In the context of AR marketing, Söderström et al. (2024) explicitly identify perceived usefulness as an important component of consumer responses that explains its impact on purchase intention, while also linking it to the mechanisms of cue utilization and habituation. This perspective is important because it emphasizes that consumers interpret information cues from digital experiences to form benefit assessments, but that response can change when novelty decreases. Choice confidence complements perceived usefulness as a more decision-oriented cognitive assessment, namely, the degree to which the choice made is appropriate and justifiable. Jalalzadeh et al. (2025) show that media usefulness is related to choice confidence and behavioral intention, which conceptually reinforces that perceived benefits help reduce doubt and increase confidence in choosing. In line with this, Kowalczuk et al. (2021) include choice confidence as part of the internal response that bridges the digital experience and purchase intention, so that purchase intention arises when consumers

OPEN ACCESS
e-ISSN: 2985-7538

not only enjoy and get carried away but also feel that the experience is valuable and makes them confident in their choice.

Purchase Intention

Purchase intention is the psychological tendency of consumers to buy a particular product after evaluating the information, perceptions, and experiences they have encountered. Wistedt (2024) explains that purchase intention results from a decision-making process influenced by perceived value, trust, and product attitudes, as well as external factors such as marketing cues and technological factors. In the context of modern consumer behavior, purchase intention reflects behavioral intentions that are formed when consumers assess that a product meets their needs and preferences. Peña-García et al. (2020) emphasize that purchase intention is not only rational but also involves emotional and social components influenced by digital and cultural experiences. This shows that purchase intention is a form of readiness to act, where positive perceptions of the product, ease of use, and trust in the brand are the main drivers. Qiu & Zhang (2024) found, through their meta-analysis, that online reviews and perceptions of product quality play an important role in increasing consumer purchase intention, as credible information strengthens confidence in the decision-making process. Conceptually, purchase intention is the primary indicator marketers use to assess the effectiveness of communication and promotion strategies in influencing actual purchasing behavior across online and offline contexts.

Furthermore, Nguyen et al. (2023) emphasize that purchase intention can be explained by integrating the Theory of Planned Behavior (TPB) and the Technology Acceptance Model (TAM), in which attitudes, subjective norms, and perceived control play important roles in shaping behavioral intentions. Positive attitudes toward products, perceived benefits, and ease of use of technology are the main drivers of purchase intention on digital platforms. Ngo et al. (2025) reinforce these findings by showing that in the context of augmented reality marketing, enjoyment and perceived usefulness are significant mediators between digital experience and consumer purchase intention. This means that the higher the level of emotional involvement and perceived functionality consumers derive from digital interactions, the greater the likelihood they will intend to purchase the product. Dandi & Ridanasti (2024) also found that trust and perceived ease of use have a direct effect on purchase intention, indicating that cognitive and affective dimensions contribute simultaneously to the formation of purchase intention. Therefore, purchase intention not only reflects the intention to make a purchase but also reflects the balance between trust, satisfaction, and positive experiences consumers have with a product or brand.

In the context of interactive technologies such as virtual try-on and augmented reality, purchase intention reflects the user's comprehensive experience. Sutarjana & Ekawati (2025) argue that the virtual try-on feature can increase purchase intention because it provides a sensory and emotional experience that resembles real interaction with the product. This experience creates a perception of added value, strengthening consumers' confidence in the product's suitability before they make a purchase. This is confirmed by Rofi & Kurniawati (2025), who show that user experience plays a crucial role in shaping purchase intention, as positive experiences strengthen the relationship between perceived benefits and the desire to buy. Qiu & Zhang (2024) add that social factors, such as user reviews and ratings, also strengthen the relationship between perceived value and purchase intention, as consumers tend to rely on social proof to assess product reliability. Thus, purchase intention can be understood as the outcome of the interaction among rational perceptions, emotional experiences, and social validation. This concept emphasizes that, in the era of digital marketing, purchase intention no longer forms linearly

OPEN ACCESS
e-ISSN: 2985-7538

but rather through a complex combination of user experience, trust in technology, and emotional relevance to the brand.

Conceptual framework

Based on previous theories and research, the following framework can be developed:

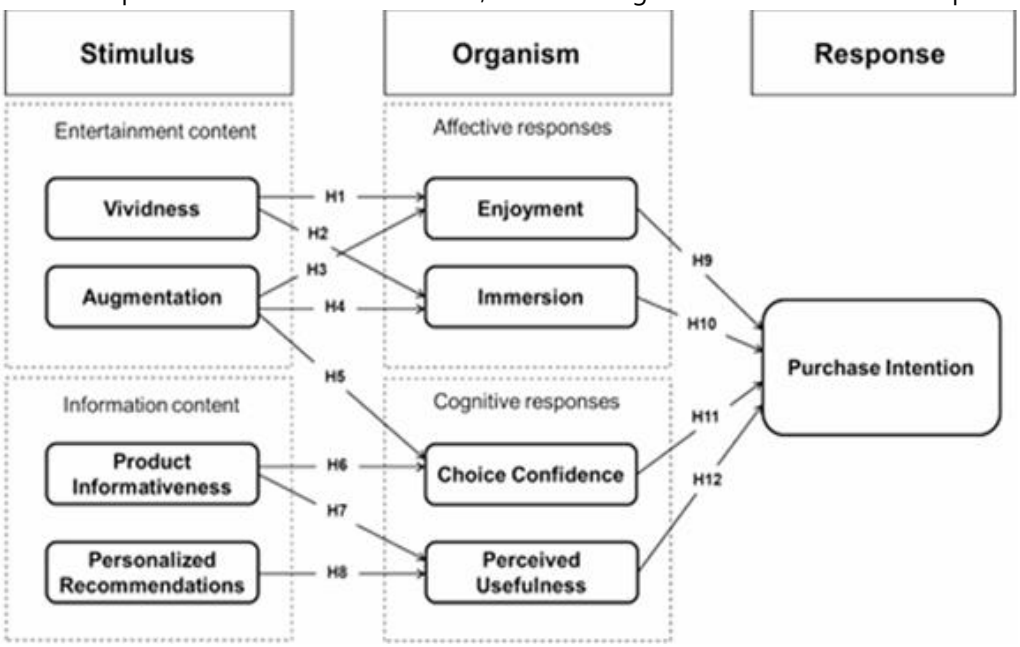

Figure 1. Conceptual Framework

1. AR Stimulus (Vividness, Augmentation, Product Informativeness, Personalized Recommendations)
2. Respons Internal Konsumen:
   Afektif: Enjoyment, Immersion
   Kognitif: Perceived Usefulness, Choice Confidence
   Response: Purchase Intention

Rahayu's (2023) research confirms that digital marketing capabilities—through the presentation of relevant information and interactive experiences—play an important role in shaping consumers' perceptions of usefulness and trust, which ultimately increases purchase intention, thus supporting the concept in this study that technological stimuli such as AR can influence consumers' internal responses and encourage purchase intention.

Hypothesis

H1: Vividness has a positive effect on Enjoyment
H2: Vividness has a positive effect on Immersion
H3: Augmentation has a positive effect on Enjoyment
H4: Augmentation has a positive effect on Immersion
H5: Augmentation has a positive effect on Choice Confidence
H6: Product Informativeness has a positive effect on Choice Confidence

OPEN ACCESS
e-ISSN: 2985-7538

H7: Product Informativeness has a positive effect on Perceived Usefulness
H8: Personalized Recommendations have a positive effect on Perceived Usefulness
H9: Enjoyment has a positive effect on Purchase Intention
H10: Immersion has a positive effect on Purchase Intention
H11: Choice Confidence has a positive effect on Purchase Intention
H12: Perceived Usefulness has a positive effect on Purchase Intention

Research Method

This study refers to Söderström et al. (2024) study entitled "Augmented reality (AR) marketing and consumer responses: A study of cue-utilization and habituation." Based on its objectives, this study is a quantitative research study with a hypothesis-testing design, as several hypotheses have been formulated in advance and tested empirically. Data collection used a cross-sectional approach, with data collected once in a single period via an online survey. The research was conducted in non-contrived settings, i.e., natural environments without treatment manipulation, so that the responses reflected respondents' real experiences with AR features on e-commerce or online retail platforms in Indonesia. The unit of analysis in this study was individuals who had used AR features in online shopping activities, such as the Tokopedia Virtual Try-On feature. This design was used to examine the relationship between AR stimuli (vividness, augmentation, product informativeness, personalized recommendations) and consumer responses (enjoyment, immersion, perceived usefulness, choice confidence), as well as their implications for purchase intention.

The research population consists of all e-commerce users in Indonesia who have used Augmented Reality (AR) features during online shopping. This population includes users of applications and digital platforms that offer AR-based shopping experiences, such as Tokopedia, Shopee, IKEA Place, and others. Since the exact population size is unknown, this study uses nonprobability sampling methods, specifically purposive sampling. This method was chosen to ensure that the respondents involved were truly relevant to the research objectives. These individuals had directly interacted with AR technology during online shopping. The main criterion for respondents was that they had used AR features when shopping online. The sample size was determined based on Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis, with reference to Hair et al. (2019), which states that the minimum sample size can be determined using the rule of 10 times the number of the most structural paths leading to one endogenous construct.

Data collection was conducted through an online survey distributed to respondents who met the purposive sampling criteria. The research instrument was developed as a structured questionnaire to measure all research constructs: AR stimuli (vividness, augmentation, product informativeness, personalized recommendations), consumer responses (enjoyment, immersion, perceived usefulness, choice confidence), and purchase intention. The development of the questions was designed to represent the conceptual definition of each construct and refer to the theoretical model used in the study. Because the study was conducted in non-contrived settings, the instrument was designed to capture respondents' actual perceptions and experiences when using AR features on digital retail platforms, without researcher intervention. The questionnaire was administered online to facilitate access for respondents across regions and to increase data-collection efficiency in a cross-sectional design.

OPEN ACCESS
e-ISSN: 2985-7538

Data analysis used Structural Equation Modeling (SEM), a multivariate statistical approach that combines the principles of factor analysis and multiple regression, thereby enabling the testing of relationships between latent constructs while accounting for measurement errors in the indicators (Hair et al., 2023). SEM was used to test complex theoretical models by estimating direct and indirect effects among variables. In this study, SEM was operated using the PLS-SEM approach in accordance with the requirements for testing structural models and survey data characteristics. Important stages in SEM include evaluating model suitability, or Goodness of Fit (GOF), to assess the extent to which conceptual models represent empirical data. GOF evaluation includes absolute fit indices such as Chi-Square, Sig. Probability, and RMSEA; incremental fit indices such as GFI, CFI, NFI, and TLI; and parsimony fit indices such as CMIN/DF, which considers the balance between model fit and parameter complexity (Hair et al., 2023). The principle of parsimony is also used to compare models based on their simplicity and the number of parameters, as explained by Mulaik et al. (1989).

Table 1. Operational Definition

No	Variable	Definition Source	Indicator (Code & Description)	Source of Indicators
1.	Vividness	Technological capabilities create a richly sensory, realistic environment (Steuer, 1992, in Yim et al., 2017).	VIV1: AR displays high visual quality. VIV2: AR displays are as realistic as the real world. VIV3: AR displays product details clearly.	(Söderström et al., 2024)
2.	Augmentation	AR interactivity in the addition of digital elements to the real world (Söderström et al., 2024).	AUG1: AR makes products look more realistic in their environment. AUG2: AR enables user interaction with products. AUG3: AR enhances the user experience in evaluating products.	(Söderström et al., 2024)
3.	Product Informativeness	Completeness of product information in AR (Söderström et al., 2024).	PI1: AR provides complete product information. PI2: AR makes it easy for users to compare products. PI3: Information in AR is helpful in purchasing decisions.	(Söderström et al., 2024)
4.	Personalized Recommendations	AR can provide recommendations tailored to user preferences (Söderström et al., 2024).	PR1: AR recommendations are relevant to user needs. PR2: Recommendations make it easy for users to find products. PR3: Recommendations match user preferences.	(Söderström et al., 2024)
5.	Enjoyment	The extent to which users feel happy and enjoy using AR (Kowalczuk et al., 2021).	ENJ1: Users feel happy when using AR. ENJ2: Using AR is an enjoyable experience. ENJ3: AR provides entertainment for users.	(Söderström et al., 2024)
6.	Immersion	The state of feeling completely absorbed in a	IMM1: Users feel comfortable when using AR.	(Söderström et al., 2024)

OPEN ACCESS
e-ISSN: 2985-7538

No	Variable	Definition Source	Indicator (Code & Description)	Source of Indicators
		virtual experience (Witmer & Singer, 1998).	IMM2: AR allows users to fully focus on the shopping experience. IMM3: AR makes users feel as if they are in a real-life experience.	
7.	Perceived Usefulness	The belief that technology improves effectiveness (McLean & Wilson, 2019).	PU1: AR improves user efficiency in shopping. PU2: AR is useful in assisting purchasing decisions. PU3: AR adds value to the user's shopping experience.	(Söderström et al., 2024)
8.	Choice Confidence	The level of consumer confidence that their choice is correct (Flavián et al., 2019).	CC1: AR increases user confidence in choosing products. CC2: AR helps users make better decisions. CC3: AR makes users more confident in their choices.	(Söderström et al., 2024)
9.	Purchase Intention	The extent to which consumers intend to purchase a product (Mikalef et al., 2013).	PI1: Users intend to purchase products after using AR. PI2: Users plan to purchase products displayed through AR. PI3: Users tend to choose products viewed with AR.	(Söderström et al., 2024)

Results and Discussion

Analysis Result

Table 2. Respondent Characteristics

Variable	Measurement	n	%
Gender	Man	98	42,1%
	Woman	130	55,8%
Ever used AR	228	228	100%

Source: Output SPSS

Table 1 shows the frequency results for the total respondents who have used AR, with 228 respondents. According to the analysis, 98 respondents (42.1%) are male, and 130 (55.8%) are female. This means that, out of 228 respondents, the majority were female, totaling 130 (55.8%).

Validity and Reliability Test

Based on the validity test results (Appendix Table A1), all indicators in the nine variables have factor loading values that meet the eligibility criteria used in the study (≥ 0.35), so that each statement item is declared valid to represent the construct being measured. The variables of Vividness, Augmentation, Personalized Recommendation, Immersion, Perceived Usefulness, Choice Confidence, and Purchase Intention showed high and consistent loadings, indicating that the indicators have strong explanatory power for the latent constructs. In the Enjoyment variable, the ENJ1 indicator had the lowest

OPEN ACCESS
e-ISSN: 2985-7538

factor loading. However, it remained above the threshold, so it could still be retained as a valid indicator in the measurement model. Based on the reliability test, all variables had Cronbach's Alpha values above 0.60, indicating the instrument was reliable and consistent in measuring the construct. The very high reliability values for Immersion and Purchase Intention indicate strong internal consistency among items within each construct. Overall, the combined validity and reliability results indicate that the research instrument is suitable for further analysis, as it meets the criteria for measurement accuracy (validity) and measurement consistency (reliability).

Hypothesis Testing Results

Hypothesis testing in this study was conducted using Structural Equation Modeling (SEM) with AMOS to examine the causal relationships among complex latent constructs, including both direct and indirect effects (Hair et al., 2023). After the measurement model was declared feasible through validity, reliability, and Goodness of Fit (GOF) tests, hypothesis testing on the structural model was carried out based on three main principles, namely the path coefficient (estimate/regression weight) which shows the direction and strength of the relationship (positive in the same direction, negative in the opposite direction), p-values to determine significance ($p < 0.05$ is significant, so the hypothesis is accepted; $p \geq 0.05$ is not significant, so the hypothesis is rejected), and the suitability of the coefficient sign with the direction of the hypothesis, because a significant relationship that is opposite to the prediction is still considered unsupported (Hair et al., 2023). Although not all GOF indices meet the ideal criteria, the model can still be used for hypothesis testing as long as there is a fit index that is still within the acceptance limit and the model has a strong theoretical basis; this is in line with the GOF findings of the study, which showed a P-Ratio of 0.825 and an AIC value close to the saturated model (Hair et al., 2023).

Table 3. Hypothesis testing results

Hypothesis	Relationship Path	Estimate	P	Info	Conclusion
H1	Vivid has a positive effect on Enjoyment (ENJ)	0.289	0.00	Significant (Positive)	Supported
H2	Vivid has a positive effect on Immersion (IMM)	-0.359	0.00	Significant (Negative)	Not supported
H3	Augmentation has a positive effect on Enjoyment (ENJ)	0.765	0.00	Significant (Positive)	Didukung
H4	Augmentation has a positive effect on Immersion (IMM)	0.692	0.00	Significant (Positive)	Supported
H5	Augmentation has a positive effect on Choice Confidence (CC)	0.365	0.00	Significant (Positive)	Supported
H6	Product Informativeness (PI) has a positive effect on Choice Confidence (CC)	-13.050	0.158	Not Significant	Not supported
H7	Product Informativeness (PI) has a positive effect on Perceived Usefulness (PU)	-6.285	0.022	Significant (Negative)	Not supported
H8	Personalized Recommendations (PR) have a positive effect on Perceived Usefulness (PU)	0.157	0.00	Significant (Positive)	Supported
H9	Enjoyment (ENJ) has a positive effect on Purchase Intention (PIN)	-0.088	0,272	Not Significant	Not supported
H10	Immersion (IMM) has a positive effect on Purchase Intention (PIN)	0.088	0.018	Significant (Positive)	Supported

OPEN ACCESS
e-ISSN: 2985-7538

Hypothesis	Relationship Path	Estimate	P	Info	Conclusion
H11	Choice Confidence (CC) has a positive effect on Purchase Intention (PIN)	0.075	0.647	Not Significant	Not supported
H12	Perceived Usefulness (PU) has a positive effect on Purchase Intention (PIN)	0.664	0.00	Significant (Positive)	Supported

Source: AMOS *Output*

Discussion

The results of the study show that vividness has a positive and significant effect on enjoyment, indicating that the clearer, richer in detail, and more realistic the visual display presented by Augmented Reality (AR) technology is, the stronger the sense of enjoyment users experience when interacting with this feature. Conceptually, vividness represents the ability of media to display convincing, "lively" visual stimuli, so that users do not just see product information but also experience something more emotionally engaging. In the context of AR-based shopping experiences, realistic displays can elicit hedonic responses by providing a pleasant sense of exploration, fostering curiosity, and increasing engagement during the interaction. Thus, enjoyment can be understood as an affective response formed through positive experiences when users assess that the technology provides an experience that is interesting, not boring, and valuable to them. These findings are in line with the Stimulus–Organism–Response (SOR) framework, which places vividness as a digital environmental stimulus that triggers changes in users' internal conditions in the affective realm, in this case, enjoyment, before ultimately potentially encouraging further behavioral responses. In the SOR perspective, the quality of visual stimuli plays an important role because strong and attractive stimuli tend to create more positive emotional reactions. The practical implication is that companies or digital retail platform managers need to prioritize the visual quality of AR, including display sharpness, product representation accuracy, and rendering realism, as these elements have been proven to shape a more enjoyable emotional experience for users. Efforts to increase vividness are not only a technical issue, but also a customer experience strategy that can strengthen hedonistic value and increase the attractiveness of user interaction with AR features. In terms of literature comparisons, the results of this study are consistent with those of McLean & Wilson (2019), who found that interactive visualization can increase user hedonic value through engaging and enjoyable experiences. This means that the positive relationship between vividness and enjoyment found in this study reinforces the argument that the quality of an interactive, convincing visual presentation is an important determinant of users' emotional evaluations.

The results of the study show that hypothesis H2, which predicts an effect of vividness on immersion, is not supported, as the identified relationship runs in a negative direction. This finding indicates that greater clarity, detail, and visual realism in Augmented Reality (AR) do not continually deepen user immersion; under certain conditions, they can even reduce the feeling of being "immersed" in the shopping experience. Conceptually, immersion is a psychological state in which the user's attention is focused, engagement increases, and the digital experience feels like a real-life situation. In practice, vividness is often assumed to strengthen immersion because rich visuals should increase the perception of realism. However, the results of this study suggest that there is an optimal limit: increasingly intense visuals do not automatically result in a more immersive experience, especially when users interact repeatedly or when the experience's quality is affected by technical limitations and information processing capacity. This adverse finding is consistent with habituation theory, which

OPEN ACCESS
e-ISSN: 2985-7538

explains that responses to new stimuli tend to weaken as users' exposure and familiarity with those stimuli increase (Tellis, 1997). In the context of AR, vividness can lose its driving force when users become accustomed to it, so that visual novelty no longer reinforces deep engagement. This pattern is consistent with the argument of Söderström et al. (2024), which links consumer responses in AR marketing to cue-utilization and habituation mechanisms, suggesting that the effectiveness of visual cues may decline as users gain prior experience. The practical implication is that AR feature developers need to view vividness not as a single strategy to increase immersion, but as an element that must be balanced with smooth interaction, performance stability, and user cognitive comfort so that the experience remains natural and not tiring. In addition to habituation, a decrease in immersion can also be understood in terms of cognitive overload. When visuals are too rich, complex, or demanding, users may experience increased cognitive load, leading to divided focus and decreased immersion. In the same situation, high vividness can also increase the likelihood that users notice technical limitations, such as response delays, reduced frame rates, or rendering inconsistencies on specific devices, ultimately disrupting the experience's smoothness and reducing immersion.

The study's results show that augmentation has a positive, significant effect on enjoyment. These findings confirm that the greater the Augmented Reality (AR) 's ability to add relevant virtual elements to the real environment, the greater the enjoyment users experience when interacting with these features. Conceptually, augmentation represents the level of integration between digital objects and the user's physical context, enabling users not only to receive product information passively but also to engage in a responsive, engaging exploration actively. When AR can present virtual objects that feel "present" in the user's space and allow users to manipulate or observe products more freely, the shopping experience becomes more sensory-rich and emotionally enjoyable. Thus, enjoyment can be understood as an affective response that grows from positive experiences when technology provides a sense of novelty, interactivity, and increased engagement. These findings align with the Stimulus–Organism–Response (SOR) framework, which views augmentation as a digital stimulus that affects the user's internal condition in the affective domain. From the SOR perspective, stimulus qualities that enhance feelings of control, engagement, and meaningful experiences tend to trigger positive emotions, including pleasure, before potentially influencing behavioral responses in subsequent stages. Effective augmentation can serve as an emotional trigger by making the experience feel more "alive," enriching interactions, and reducing the boredom often associated with conventional online shopping. The practical implication of these findings is the importance of designing AR features that not only display products visually but also augment them with elements relevant to user needs, such as adjusting product displays to the user's space, providing simple interaction options, and ensuring smooth digital-physical integration. Focusing on the quality of augmentation is a customer experience strategy that can increase hedonistic value and strengthen the appeal of using AR in shopping activities. In comparison with previous research, these results align with Javornik (2016), who emphasizes that AR technology capable of combining digital elements with the real world can create a high level of interactivity and increase user satisfaction. Javornik's (2016) argument supports the explanation that augmentation produces a more engaging experience because users feel greater involvement and gain new experiences that transcend the limitations of two-dimensional displays.

OPEN ACCESS
e-ISSN: 2985-7538

The results of the study show that augmentation has a positive and significant effect on immersion, meaning that the greater the level of interactivity and integration of digital elements into the real environment through Augmented Reality (AR) technology, the stronger the user's psychological immersion during interaction with the digital shopping experience. Conceptually, immersion refers to a state of deep engagement and concentration felt when individuals feel "immersed" in an experience, so that the external environment recedes. The digital experience becomes more dominant in the user's consciousness. In the context of AR, the ability of augmentation to add relevant, responsive digital objects creates a more dynamic and engaging experience, so that users not only see visual displays but also feel emotionally and cognitively involved in the integrated digital space. This interactivity reinforces the depth of the user's attention and psychological attachment, which is at the core of the immersion experience. These findings align with the interactive media literature on presence and engagement, which holds that the level of interactivity and the technology's response to user actions are important determinants of the depth of the digital experience. When users have control over virtual objects and feel a reciprocal relationship between their actions and visual feedback, they are more likely to experience a sense of presence in the technological environment, thereby increasing immersion. This impacts perceptions of experience quality, as immersion is not merely a visual experience but also an internal one that involves cognitive and emotional engagement. The practical implication is that AR feature design should not only emphasize visual aspects but also focus on responsive, interactive capabilities that fully engage users in the digital experience. A comparison with previous research shows that these findings are consistent with those of Flavián et al. (2019), who emphasize that virtual reality, augmented reality (AR), and mixed reality technologies create a more immersive customer experience by integrating interactivity and presence. Flavián et al. (2019) underscored that technologies that combine digital elements with the real world at a high level can create rich, valuable experiences, increasing consumer engagement and emotional responses within the overall customer experience.

The results of the study show that H5 is supported: augmentation positively affects choice confidence. These findings indicate that the greater the Augmented Reality (AR)'s ability to add contextually relevant, interactive virtual elements to the user's real environment, the higher the user's confidence in their decision to purchase a product. Conceptually, choice confidence refers to the level of psychological certainty that consumers have that the choice they have made is the right one, reasonable, and in line with their needs. In digital shopping, this confidence often weakens because consumers cannot touch, try, or observe the product directly. Augmentation helps bridge this gap by allowing consumers to evaluate products in a more realistic context of use, such as seeing how the size, shape, or appearance of a product fits into the user's environment. Thus, augmentation not only enriches visual representation but also improves the quality of consumer evaluation by providing an experience closer to direct interaction with the product. These findings align with the Stimulus–Organism–Response (SOR) framework, which positions augmentation as a technological stimulus that influences consumers' internal conditions in the cognitive realm, including increased confidence in decision-making. From the SOR perspective, stimuli that enrich information and provide a more meaningful experience tend to shift consumers' internal states from doubt to certainty, as they receive stronger cues to assess product quality and suitability. The practical implication is that e-commerce platform managers and digital retailers need to design AR features that are not only visually appealing but also truly help consumers make contextual evaluations, for example, through precise placement of

OPEN ACCESS
e-ISSN: 2985-7538

virtual objects, viewing-angle options, and responsive interactions. Increased choice confidence is important because it can reduce hesitation, shorten decision-making time, and strengthen purchase intent in AR-based digital shopping experiences. In comparison with previous studies, this study's results are consistent with those of Poushneh & Vasquez-Parraga (2017), who found that AR's ability to provide a direct experience of a product can reduce uncertainty and increase user confidence in choosing a product. This argument supports the explanation that augmentation provides richer "evidence of experience" than regular catalog displays, so consumers feel they have a stronger basis for evaluation when making choices.

The results show that H6 is not supported, because product informativeness does not affect choice confidence. This finding indicates that adding product information via Augmented Reality (AR) features does not automatically increase user confidence in product selection. Conceptually, choice confidence reflects the level of psychological certainty that consumers have that their choices are appropriate and in line with their needs. In digital shopping, this confidence generally forms when consumers can process information effectively, compare alternatives clearly, and feel that the information received is relevant to the decision. However, the results of this study suggest that when more information is presented, users do not always become more confident; they may instead experience difficulties processing and prioritizing essential information. This situation shows that the quality of evaluation is not only determined by the completeness of information, but also by the ability of that information to facilitate quick, concise, and targeted understanding. This finding aligns with the concept of information overload, which posits that individuals can experience a decline in decision-making effectiveness when faced with too much complex or unstructured information (Schneider, 1987). Under overload, users' attention tends to be divided, information processing slows, and decisions become less specific because individuals find it difficult to distinguish between primary and secondary information. This perspective helps explain why product informativeness in AR does not increase choice confidence, especially when the information displayed is repetitive, not personalized, or too detailed, thereby burdening the user's cognitive capacity. Mikalef et al. (2021) support the argument that users' processing capacity and perception of available information can affect decision quality, so that adding information without proper management can reduce the effectiveness of evaluation. The practical implication is that AR developers and e-commerce platform managers need to emphasize information curation, for example, by presenting the most diagnostic core information, using an easy-to-scan display structure, and providing detail level settings options according to user needs. Thus, effective product informativeness should emphasize relevance and readability rather than simply increasing the volume of information. In comparison with previous research, these results expand understanding rather than contradict it. The literature on decision-making has long emphasized that additional information does not always lead to better decisions when individuals experience cognitive constraints, so the relationship between informativeness and choice confidence is conditional (Schneider, 1987). The findings of this study are consistent with this logic. They are reinforced by Mikalef et al. (2021), who argue that increasing information can be counterproductive when it is not aligned with user needs or creates excessive processing load.

The results show that H7 is not supported, because product informativeness actually has a negative effect on perceived usefulness. This finding indicates that the higher the intensity of product

OPEN ACCESS
e-ISSN: 2985-7538

information presented through the Augmented Reality (AR) feature, the more users' perception of the benefits of AR in assisting the shopping process tends to decrease. Conceptually, perceived usefulness refers to the belief that the use of a technology will improve the user's performance or effectiveness in achieving goals, such as speeding up product evaluation, clarifying choices, or facilitating decision making. However, the negative results in this relationship indicate that abundant and complex information is not always perceived as an added value. In the context of the AR experience, overly dense information can make it difficult for users to understand the display, process details, and determine which information is most relevant. As a result, AR is no longer seen as a tool that makes things easier, but rather as a source of complexity that lowers the overall assessment of its benefits. These findings are in line with the Technology Acceptance Model or TAM, which asserts that perceived usefulness is greatly influenced by perceived ease of use (Davis, 1989). Within the TAM framework, technology will be considered useful if users feel that it is easy to understand, easy to operate, and does not cause cognitive barriers. When product informativeness is presented in a complex manner, users may experience a decrease in ease of use because they must allocate more attention and processing capacity to understand the information. This condition implies a decrease in perceived usefulness because users assess that the practical benefits of AR are not proportional to the effort required to process the information. Thus, the research findings suggest the existence of a contingency mechanism that has not been explicitly measured, in which perceived ease of use can act as a moderating factor, explaining why more information can reduce perceived benefits. The practical implication is that AR platform managers need to prioritize concise, structured, and focused information design, for example, by displaying the most diagnostic core information, providing detail level settings, and minimizing elements that could potentially interfere with user understanding. Compared with previous literature, these findings are consistent with the basic logic of TAM, which posits that ease of use is an important determinant of perceived usefulness (Davis, 1989). This means that the results of this study do not contradict the established theoretical framework, but rather expand the application of TAM in the context of AR by emphasizing that "informativeness" can be a double-edged sword. Additional information can serve as decision support only if it is presented in a way that facilitates processing, whereas complex information can reduce ease of use and ultimately perceived usefulness.

The results show that H8 is supported: personalized recommendations positively affect perceived usefulness. This finding indicates that when AR systems provide product recommendations aligned with user preferences, needs, and context, users tend to consider the technology more helpful in assisting the shopping process. Conceptually, perceived usefulness reflects the belief that using a technology will improve the effectiveness, efficiency, and quality of user decisions. In the AR-based shopping experience, personalized recommendations serve as a filtering mechanism, helping users focus on more relevant product alternatives. This reduces search effort, alleviates uncertainty due to numerous choices, and accelerates the evaluation process. Thus, personalization not only enhances interaction comfort but also strengthens the perception of usefulness, as users feel that AR provides concrete, practical decision support in the purchasing context. These findings align with the Technology Acceptance Model (TAM), which emphasizes that perceived usefulness arises when users view technology as providing real functional value in achieving goals (Davis, 1989). Within the TAM framework, a system will be considered valid if it helps users complete tasks better, faster, or more accurately. Personalized recommendations directly contribute to this functional value because relevant

OPEN ACCESS
e-ISSN: 2985-7538

recommendations make the shopping experience feel more focused, efficient, and productive. The practical implication of this finding is the importance of developing personalization features that are not generic but rather tailored to user preferences and behavior, such as search history, frequently viewed categories, or specific needs that arise during AR interactions. In addition, the quality of personalization needs to be maintained so that it remains transparent and easy to understand, enabling users to trust the recommendations as an aid that enriches the evaluation process, rather than an annoying sales pitch. Compared with previous studies, this study's results are consistent with those of Zhao et al. (2025), who found that personalization increases the relevance of information and creates greater functional value for users. This means that when the information presented is better suited to their needs, users tend to rate the system as more useful because it helps minimize unnecessary information while highlighting the attributes most important to decision-making.

The results of the study indicate that H9 is not supported, because enjoyment does not affect purchase intention. This finding indicates that the pleasure that arises when consumers use Augmented Reality (AR) features does not necessarily directly encourage purchase intention. Conceptually, enjoyment is an affective response reflecting pleasure, entertainment, and positive experiences during interaction with technology. At the same time, purchase intention is a behavioral tendency closer to economic decisions and risks, as it involves considerations of cost, benefits, and beliefs about products and platforms. In the context of digital shopping, enjoyment can enhance the quality of the experience, but purchase intention often remains dependent on more fundamental functional and psychological evaluations. Therefore, the insignificance of this relationship can be understood as an indication that consumers do not consider enjoyment as the primary driver of purchasing, especially when they still need certainty about value, security, and confidence that the purchase decision will provide adequate benefits. This explanation aligns with the consumer behavior perspective, which emphasizes that the influence of positive emotions is not always strong when factors such as trust and value have not yet been established. Childers et al. (2001) assert that the contribution of enjoyment to consumer behavior tends to weaken when users do not yet feel secure, do not yet trust, or do not yet see high functional value in the technology being used. Thus, the results of this study suggest the possibility of psychological moderators, such as perceived value, trust, or technology readiness, that are not included in the model but that shape the conditions under which enjoyment can be relevant to purchase intent. The practical implication is that AR platform providers need to balance enjoyable experience strategies with strengthening functional aspects and trust, for example, through clear product information, transparent return policies, transaction security, and social proof that reinforces consumer confidence. Without the support of these factors, enjoyment can only produce a pleasant experience and is not strong enough to drive purchasing decisions. This finding is also consistent with the argument that enjoyment more often works indirectly. Flavián et al. (2019) explain that in experience-based technologies such as AR, enjoyment tends to influence behavior through mediating variables, such as increased immersion or reinforced perceived usefulness, which, in turn, contribute to purchase intention. This means that the insignificance of the direct influence of enjoyment on purchase intention in this study does not necessarily contradict previous research, but somewhat clarifies the more complex mechanism of the relationship.

OPEN ACCESS
e-ISSN: 2985-7538

The results of the study show that H10 is supported: immersion positively affects purchase intention. These findings indicate that when users feel "immersed" in an Augmented Reality (AR) experience, their intention to purchase tends to increase. Conceptually, immersion describes a state of deep emotional and cognitive engagement in which the user's attention is focused on the ongoing experience and interaction, and the user feels a strong presence in the digital environment. In the context of AR-based retail, immersion does not only mean enjoying the visual display, but also experiencing a psychological connection with the product through realistic exploration, so that users feel closer and more confident about the shopping experience. When immersion is formed, consumers are more likely to mentally elaborate on the product's usefulness and imagine its use in everyday life, leading to a more meaningful evaluation and a stronger tendency to purchase. These findings align with the Stimulus–Organism–Response (SOR) framework, which positions immersion as an internal condition (organism) that mediates between technological stimuli and behavioral responses. In the SOR perspective, interactive AR experiences act as stimuli that drive changes in consumers' psychological states, including increased engagement and attachment, which then influence behavioral intentions such as purchase intention. The practical implication is that retailers and AR developers need to optimize experience design to increase immersion by integrating seamless interactions, context-aware adaptation, and product exploration mechanisms that fully engage users. This strategy is important because purchase intention is not only formed from information or verbal persuasion, but also from the quality of the experience that makes consumers feel "present" and emotionally connected to the product and the shopping process. The results of this study are consistent with Flavián et al. (2019), who explain that technology-based digital experiences, including AR, can shape a more profound customer experience and foster emotional attachment to the product, thereby increasing the likelihood of purchase. This argument reinforces the explanation that immersion is a key psychological mechanism that transforms interactive experiences into purchasing motivation.

The results show that H11 is not supported, because choice confidence does not affect purchase intention. This finding indicates that user confidence in product choices after using the Augmented Reality (AR) feature does not necessarily directly increase purchase intention. Conceptually, choice confidence reflects consumers' psychological certainty that their choice is correct. In contrast, purchase intention is a behavioral response influenced by cognitive confidence, situational factors, and broader value assessments. In digital shopping, consumers may feel confident about the suitability of the selected product but still delay or cancel their purchase due to external factors such as price, brand, promotions, or the availability of alternatives they consider more advantageous. In other words, confidence in choice is an important internal condition. However, it is not always sufficient to encourage intentional action when other considerations, such as risk and economic trade-offs, are more dominant. This explanation aligns with the Theory of Planned Behavior, which emphasizes that behavioral intentions are shaped by comprehensive evaluations, including attitudes toward the behavior, subjective norms, and perceived control, so that one component of cognitive confidence is not always the sole determinant of purchase intention. In this context, choice confidence can function as a cognitive element that reinforces attitudes or perceived control. However, its impact on purchase intention may weaken when consumers face situational barriers or perceived risks. The practical implication is that retailers and AR developers need to complement experiences that increase confidence with interventions that reduce purchase barriers, such as price transparency, return guarantees, clear risk

OPEN ACCESS
e-ISSN: 2985-7538

information, and promotions that reduce decision load. Without the support of these factors, increased choice confidence may only lead to certainty of choice, rather than translating into firm purchase intention. In comparison with the literature, these findings are consistent with Chiu et al. (2014), who assert that confidence in choices will increase purchase intention only when followed by perceptions of benefits and satisfaction with the technology. This means that choice confidence can act as a mediator or part of a series of psychological mechanisms that require the reinforcement of other variables before influencing purchase intention. Furthermore, Park & Kim (2003) explain that consumers with low involvement levels tend not to base purchasing decisions on confidence. Hence, the effect of confidence weakens when the product is not considered important or when the decision is low risk. Chiu et al. (2014) also emphasize that choice confidence is more likely to influence purchase intention when perceived risk is low, so the absence of the perceived risk variable in this research model may prevent the moderating dynamics from being captured empirically.

The results of the study show that H12 is supported: perceived usefulness positively affects purchase intention. This finding confirms that when users perceive Augmented Reality (AR) technology as truly helpful in the shopping process, their intention to purchase products displayed through AR tends to increase. Conceptually, perceived usefulness reflects the belief that using a technology will increase the user's effectiveness in completing tasks, such as clarifying understanding of the product, speeding up evaluation, and facilitating decision-making. In the context of digital retail, AR that is perceived as applicable can reduce the uncertainty of online shopping by providing a more informative representation of the product that is closer to the real experience. When consumers feel that AR makes the shopping process more efficient and helps them choose products more accurately, the urge to proceed to the purchase stage becomes stronger, as the technology is seen as providing functional value relevant to the shopping purpose. These findings are consistent with the Technology Acceptance Model (TAM), which posits that perceived usefulness is the primary determinant of technology acceptance and a driver of usage behavior and subsequent behavioral intent (Davis, 1989). In TAM logic, technology is adopted and used when users believe it improves performance or helps achieve desired results. In AR-based shopping experiences, belief in the benefits can arise because users feel better decision support, such as the ability to assess products more clearly, understand important attributes, and plan choices with more confidence. The practical implication of these findings is that AR development on e-commerce platforms needs to prioritize tangible utilitarian value, such as clarity of core information, features that facilitate evaluation, and interaction designs that minimize barriers to understanding. In other words, the success of AR in driving purchase intent will be more consistent when users experience direct benefits that help them shop more effectively. In comparison with previous research, these results are consistent with the TAM framework, which has long emphasized the central role of perceived usefulness in driving technology use intentions and related behaviors (Davis, 1989). Furthermore, these findings align with McLean and McLean & Wilson (2019), who emphasize that well-designed digital experiences can improve users' evaluation of technology's value, including functional value, thereby influencing consumer responses in a retail context.

Conclusion

This study aims to understand how the main elements of Augmented Reality (AR) Marketing—vividness, augmentation, product informativeness, and personalized recommendations—influence

OPEN ACCESS
e-ISSN: 2985-7538

consumer responses and ultimately shape purchase intention. Using a Structural Equation Modeling (SEM) approach, this study confirms that cognitive perceptions, such as perceived usefulness, and emotional involvement, such as immersion, play a dominant role in explaining interactive technology-based purchase intention. This study also identifies psychological dynamics, such as habituation and information overload, suggesting that visual and informative effects are not always linearly related to user experience. Conceptually, this study expands the understanding of the Stimulus–Organism–Response (SOR) model by integrating the Technology Acceptance Model (TAM), cue-utilization theory, and habituation theory to explain variations in consumer behavior in the context of AR-based marketing.

In terms of scientific and practical contributions, this study has original value in linking the affective and cognitive aspects of consumers with interactive AR Marketing strategies. Academically, this study enriches the literature on digital consumer behavior by demonstrating that AR effectiveness depends not only on visual appeal but also on its functional relevance and the personalization of the user experience. In practical terms, companies need to focus on developing AR features that enhance perceived usefulness and immersion, while managing information presentation to avoid cognitive overload. Improving the quality of augmentation and personalized recommendations is also a strategic step in building emotional engagement and consumer confidence in the product. Thus, the results of this study can serve as a reference for digital marketing practitioners in designing compelling, highly functional-value interactive experiences to shape consumer purchase intent.

The limitations of this study include a cross-sectional design, which limits the observation of consumer behavior dynamics over time, and a limited respondent pool of e-commerce users in Indonesia. Perception-based measurement instruments also have the potential to cause respondent subjectivity bias. Therefore, further research is recommended to use a longitudinal design in order to capture changes in consumer perceptions and behavior in greater depth. Researchers can also add mediating or moderating variables such as perceived risk, trust, or technology readiness to enrich the theoretical model. In addition, developing studies in other sectors, such as automotive, tourism, or education, can provide a broader perspective on the effectiveness of AR Marketing across various industrial contexts.

References

Amanah, D. M. N., Aini, N., Putri, N. K., Dewi, A. L., & Soelistyoningrum, J. N. (2023). Unlocking Consumer Minds: Navigating Purchase Intentions through the Lens of Augmented Reality and the Technology Acceptance Model. 2023 International Conference on Technology, Engineering, and Computing Applications (ICTECA), 1–6. https://doi.org/10.1109/ICTECA60133.2023.10490482

Attri, R., Roy, S., & Choudhary, S. (2024). In-store augmented reality experiences and its effect on consumer perceptions and behaviour. Journal of Services Marketing, 38(7), 892–910. https://doi.org/10.1108/JSM-01-2024-0005

Childers, T. L., Carr, C. L., Peck, J., & Carson, S. (2001). Hedonic and utilitarian motivations for online retail shopping behavior. Journal of Retailing, 77(4), 511–535. https://doi.org/https://doi.org/10.1016/S0022-4359(01)00056-2

Chiu, C., Wang, E. T. G., Fang, Y., & Huang, H. (2014). Understanding customers' repeat purchase intentions in B2C e-commerce: the roles of utilitarian value, hedonic value and perceived risk. Information Systems Journal, 24(1), 85–114. https://doi.org/10.1111/j.1365-2575.2012.00407.x

Dandi, & Ridanasti, E. (2024). The Influence of Trust, Perceived Ease of Use, Perceived Usefulness, Perceived Enjoyment on Intention to Use TikTok Shop through Attitude Towards Using as Mediation. Indonesian

OPEN ACCESS
e-ISSN: 2985-7538

Journal of Economics, Business, Accounting, and Management (IJEBAM), 2(6 SE-Research Articles), 1–15. https://doi.org/10.63901/ijebam.v2i6.93

Davis, F. D. (1989). Technology acceptance model: TAM. Al-Suqri, MN, Al-Aufi, AS: Information Seeking Behavior and Technology Adoption, 205, 219.

Easterbrook, J. A. (1959). The effect of emotion on cue utilization and the organization of behavior. Psychological Review, 66(3), 183. https://doi.org/10.1037/h0047707

Fernando, R., Turangan, K., Suphangat, F., & Kembau, A. (2024). Implementation Of Augmented Reality Technology For Marketing Strategies And User Experience In Retail SME Indonesia. Journal of Management: Small and Medium Enterprises (SMEs), 17(2 SE-Articles). https://doi.org/10.35508/jom.v17i2.17567

Flavián, C., Ibáñez-Sánchez, S., & Orús, C. (2019). The impact of virtual, augmented and mixed reality technologies on the customer experience. Journal of Business Research, 100, 547–560. https://doi.org/https://doi.org/10.1016/j.jbusres.2018.10.050

Gabriel, A., Ajriya, A. D., Fahmi, C. Z. N., & Handayani, P. W. (2023). The influence of augmented reality on E-commerce: A case study on fashion and beauty products. Cogent Business & Management, 10(2), 2208716. https://doi.org/10.1080/23311975.2023.2208716

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European Business Review, 31(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hair Jr, J., Hair Jr, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2023). Advanced issues in partial least squares structural equation modeling. saGe publications.

Hilken, T., Heller, J., Chylinski, M., Keeling, D. I., Mahr, D., & de Ruyter, K. (2018). Making omnichannel an augmented reality: the current and future state of the art. Journal of Research in Interactive Marketing, 12(4), 509–523. https://doi.org/10.1108/JRIM-01-2018-0023

Holdack, E., Lurie-Stoyanov, K., & Fromme, H. F. (2022). The role of perceived enjoyment and perceived informativeness in assessing the acceptance of AR wearables. Journal of Retailing and Consumer Services, 65, 102259. https://doi.org/https://doi.org/10.1016/j.jretconser.2020.102259

Issock, P. B., Jacobs, A., & Koopman, A. (2024). Immersive escapes: examining the impact of personality traits, perceived enjoyment, flow, and trust on virtual reality technology adoption intentions in an emerging market. Cogent Business & Management, 11(1), 2364835. https://doi.org/10.1080/23311975.2024.2364835

Jalalzadeh, S. R., Ali, A., Karimi, H., Shirani, M., & Sciences, F. (2025). The Impact of Augmented Reality-Based Platforms on Customer Behavioral Responses in Customer Travel. AI and Tech in Behavioral and Social Sciences, 3(2), 48–59. https://doi.org/10.61838/kman.aitech.3.2.6

Javornik, A. (2016). Augmented reality: Research agenda for studying the impact of its media characteristics on consumer behaviour. Journal of Retailing and Consumer Services, 30, 252–261. https://doi.org/https://doi.org/10.1016/j.jretconser.2016.02.004

Kazakou, G., Koutromanos, G., & Christogiannis, C. (2025). Examining teachers' acceptance of augmented reality smart glasses through the immersive technologies acceptance model. Education and Information Technologies. https://doi.org/10.1007/s10639-025-13687-2

Kowalczuk, P., Siepmann (née Scheiben), C., & Adler, J. (2021). Cognitive, affective, and behavioral consumer responses to augmented reality in e-commerce: A comparative study. Journal of Business Research, 124, 357–373. https://doi.org/https://doi.org/10.1016/j.jbusres.2020.10.050

Kumar, H., & Srivastava, R. (2022). Exploring the role of augmented reality in online impulse behaviour. International Journal of Retail & Distribution Management, 50(10), 1281–1301. https://doi.org/10.1108/IJRDM-11-2021-0535

Maknunah, L. U. (2025). Augmented Reality and Information Marketing: Digital Transformation in Increasing Consumer Experience. Jurnal Ilmiah Manajemen Kesatuan, 13(4 SE-Articles), 2427–2438. https://doi.org/10.37641/jimkes.v13i4.3422

OPEN ACCESS
e-ISSN: 2985-7538

McLean, G., & Wilson, A. (2019). Shopping in the digital world: Examining customer engagement through augmented reality mobile applications. Computers in Human Behavior, 101, 210–224. https://doi.org/https://doi.org/10.1016/j.chb.2019.07.002

Mikalef, P., Sharma, K., Pappas, I. O., & Giannakos, M. (2021). Seeking Information on Social Commerce: An Examination of the Impact of User- and Marketer-generated Content Through an Eye-tracking Study. Information Systems Frontiers, 23(5), 1273–1286. https://doi.org/10.1007/s10796-020-10034-3

Mulaik, S. A., James, L. R., Van Alstine, J., Bennett, N., Lind, S., & Stilwell, C. D. (1989). Evaluation of goodness-of-fit indices for structural equation models. Psychological Bulletin, 105(3), 430. https://doi.org/10.1037/0033-2909.105.3.430

Naveen, L., Khan, M. I., Saleh, M. A., & Subudhi, R. N. (2025). The influence of mobile augmented reality on consumer behavior: Insights into affective, cognitive, and behavioral responses. Computers in Human Behavior, 165, 108558. https://doi.org/https://doi.org/10.1016/j.chb.2025.108558

Ngo, T. T. A., Tran, T. T., An, G. K., & Nguyen, P. T. (2025). Investigating the influence of augmented reality marketing application on consumer purchase intentions: A study in the E-commerce sector. Computers in Human Behavior Reports, 18, 100648. https://doi.org/https://doi.org/10.1016/j.chbr.2025.100648

Nguyen, T. T., Thi Thu Truong, H., & Le-Anh, T. (2023). Online purchase intention under the integration of the theory of planned behavior and the technology acceptance model. Sage Open, 13(4), 21582440231218816. https://doi.org/10.1177/21582440231218814

Paramita, A. S., & Maulidiani, J. J. (2019). The Effect of Augmented Reality Shopping Applications on Purchase Intention. Esensi: Jurnal Bisnis Dan Manajemen, 9(2), 133–142. https://doi.org/10.15408/ess.v9i2.9724

Park, C., & Kim, Y. (2003). Identifying key factors affecting consumer purchase behavior in an online shopping context. International Journal of Retail & Distribution Management, 31(1), 16–29. https://doi.org/10.1108/09590550310457818

Park, M., & Yoo, J. (2020). Effects of perceived interactivity of augmented reality on consumer responses: A mental imagery perspective. Journal of Retailing and Consumer Services, 52, 101912. https://doi.org/https://doi.org/10.1016/j.jretconser.2019.101912

Peña-García, N., Gil-Saura, I., Rodríguez-Orejuela, A., & Siqueira-Junior, J. R. (2020). Purchase intention and online purchase behavior: A cross-cultural approach. Heliyon, 6(6), e04284. https://doi.org/https://doi.org/10.1016/j.heliyon.2020.e04284

Poushneh, A. (2018). Augmented reality in retail: A trade-off between user's control of access to personal information and augmentation quality. Journal of Retailing and Consumer Services, 41, 169–176. https://doi.org/https://doi.org/10.1016/j.jretconser.2017.12.010

Poushneh, A., & Vasquez-Parraga, A. Z. (2017). Discernible impact of augmented reality on retail customer's experience, satisfaction and willingness to buy. Journal of Retailing and Consumer Services, 34, 229–234. https://doi.org/https://doi.org/10.1016/j.jretconser.2016.10.005

Qiu, K., & Zhang, L. (2024). How online reviews affect purchase intention: A meta-analysis across contextual and cultural factors. Data and Information Management, 8(2), 100058. https://doi.org/https://doi.org/10.1016/j.dim.2023.100058

Rahayu, F., Zahra, M., Rosdiana, A., & N, K. N. (2024). Strategi Sensory Marketing untuk Meningkatkan Kepuasan Konsumen pada Restoran Tradisional di Indonesia. Jurnal Pendidikan Tambusai, 8(2 SE-Articles of Research), 27400–27416. https://jptam.org/index.php/jptam/article/view/16844

Ramdani, M. A., Belgiawan, P. F., Aprilianty, F., & Purwanegara, M. S. (2022). Consumer Perception and the Evaluation to Adopt Augmented Reality in Furniture Retail Mobile Application. Binus Business Review, 13(1 SE-Articles), 41–56. https://doi.org/10.21512/bbr.v13i1.7801

Rengganis, K., Kusdibyo, L., Senalasari, W., & Kunci, K. (2020). Persepsi Penggunaan Fitur Augmented Reality pada Platform Online Shopping Berbasis Technology Acceptance Model. Prosiding The 11th Industrial Research Workshop and National Seminar, 26–27. https://doi.org/10.35313/IRWNS.V11I1.2157

OPEN ACCESS
e-ISSN: 2985-7538

Rinaldi, B., Herlina, M. G., & Iskandar, K. (2024). Instagram Augmented Reality Marketing in Boosting Brand Awareness and e-WOM in the Indonesian Bottled Tea Industry. 2024 International Seminar on Application for Technology of Information and Communication (ISemantic), 71–76. https://doi.org/10.1109/iSemantic63362.2024.10762434

Rofi, A. R., & Kurniawati, M. (2025). Virtual Try-On and Purchase Intention: The Role of User Experience. Jurnal Economic Resource, 8(1), 228–239. https://doi.org/10.57178/jer.v8i1.1327

Schneider, D. (1987). Agency Costs and Transaction Costs: Flops in the Principal-Agent-Theory of Financial Markets BT - Agency Theory, Information, and Incentives (G. Bamberg & K. Spremann (eds.); pp. 481–494). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-75060-1_25

Smink, A. R., van Reijmersdal, E. A., van Noort, G., & Neijens, P. C. (2020). Shopping in augmented reality: The effects of spatial presence, personalization and intrusiveness on app and brand responses. Journal of Business Research, 118, 474–485. https://doi.org/https://doi.org/10.1016/j.jbusres.2020.07.018

Söderström, C., Mikalef, P., Dypvik Landmark, A., & Gupta, S. (2024). Augmented reality (AR) marketing and consumer responses: A study of cue-utilization and habituation. Journal of Business Research, 182, 114813. https://doi.org/https://doi.org/10.1016/j.jbusres.2024.114813

Sudirjo, F., Chevy Herli, S. A., Souisa, W., & Vandika, A. Y. (2024). The Influence of Influencer Collaboration, Augmented Reality Marketing, and Personalized Recommendations on Consumer Purchasing Decisions in the Beauty Industry in Indonesia. In West Science Social and Humanities Studies (Vol. 2, Issue 05 SE-Articles, pp. 787–798). https://doi.org/10.58812/wsshs.v2i05.905

Suryawijaya, T., & Aqmala, D. (2023). Augmented Retail Marketing: Comprehending Customer Satisfaction by AR Marketing Media. Neo Journal of Economy and Social Humanities, 2(4 SE-The Published Articles), 223–238. https://doi.org/10.56403/nejesh.v2i4.139

Sutarjana, N. M. P. W., & Ekawati, N. W. E. (2025). The The Effect of Augmented Reality Virtual Try-On on Purchase Intention Through the Mediation of Perceived Enjoyment. International Journal of Management, Accounting & Finance (KBIJMAF), 2(3 SE-Articles), 35–48. https://doi.org/10.70142/kbijmaf.v2i3.333

Tellis, W. M. (1997). Information Technology in a University: An institutional case study of instructional and research computing in a client/server environment. Nova Southeastern University.

Vo, K. N., Le, A. N. H., Thanh Tam, L., & Ho Xuan, H. (2022). Immersive experience and customer responses towards mobile augmented reality applications: The moderating role of technology anxiety. Cogent Business & Management, 9(1), 2063778. https://doi.org/10.1080/23311975.2022.2063778

Wistedt, U. (2024). Consumer purchase intention toward POI-retailers in cross-border E-commerce: An integration of technology acceptance model and commitment-trust theory. Journal of Retailing and Consumer Services, 81, 104015. https://doi.org/https://doi.org/10.1016/j.jretconser.2024.104015

Witmer, B. G., & Singer, M. J. (1998). Measuring Presence in Virtual Environments: A Presence Questionnaire. Presence: Teleoperators and Virtual Environments, 7(3), 225–240. https://doi.org/10.1162/105474698565686

Zhao, L., Fu, B., & Bai, S. (2025). Understanding the Influence of Personalized Recommendation on Purchase Intentions from a Self-Determination Perspective: Contingent upon Product Categories. Journal of Theoretical and Applied Electronic Commerce Research, 20(1), 32. https://doi.org/10.3390/jtaer20010032

Zhou, L., Niu, L., Wang, C. L., Wu, B., & Deng, X. (2025). Bridging the Mental Gap: The Impact of Augmented Reality Multiproduct Presentation and Recommendation Strategy on Consumer Satisfaction. International Journal of Consumer Studies, 49(4), e70082. https://doi.org/10.1111/ijcs.70082

Corresponding author

Miracle Arnold can be contacted at: cenot03@gmail.com

Advances in Management & Financial Reporting
Volume 4, Issue 1 (2026)
Website: https://advancesinresearch.id/index.php/AMFR
OPEN ACCESS
e-ISSN: 2985-7538

Appendix

Table A1. Instrument Validity and Reliability Test

Variable (Code)	Indicator	Statement	Factor Loading	Validity Decision	Cronbach's Alpha	Reliability Decision
Vividness (VIVID)	VIVID1	AR displays high visual quality	0.920	Valid	0.810	Reliable
	VIVID2	Realistic AR display just like in the real world	0.720	Valid		
	VIVID3	AR displays product details clearly	0.899	Valid		
Augmentation (AUG)	AUG1	AR makes products look more real in my environment.	0.878	Valid	0.873	Reliable
	AUG2	AR enables user interaction with products	0.916	Valid		
	AUG3	AR enhances the user experience in evaluating products	0.888	Valid		
Product Informativeness (PI)	PI1	AR provides complete product information	0.650	Valid	0.740	Reliable
	PI2	AR makes it easier for users to compare products	0.884	Valid		
	PI3	Information in AR is useful for purchasing decisions	0.881	Valid		
Personalized Recommendation (PR)	PR1	Product recommendations displayed in AR are relevant to the user's needs.	0.884	Valid	0.873	Reliable
	PR2	Recommendations make it easier for users to find products	0.880	Valid		
	PR3	Recommendations based on user preferences	0.913	Valid		
Enjoyment (ENJ)	ENJ1	Users feel happy when using AR	0.369	Valid	0.687	Reliable
	ENJ2	Using AR is a fun experience	0.947	Valid		
	ENJ3	AR provides entertainment for users	0.954	Valid		
Immersion (IMMER)	IMMER1	Users feel comfortable when using AR	0.951	Valid	0.963	Reliable
	IMMER2	AR allows users to focus fully on the shopping experience	0.981	Valid		
	IMMER3	AR makes users feel as if they are in a real experience	0.969	Valid		
Perceived Usefulness (PU)	PU1	AR improves user efficiency in shopping	0.810	Valid	0.810	Reliable
	PU2	AR is useful in assisting purchasing decisions.	0.938	Valid		
	PU3	AR adds value to the user's shopping experience	0.804	Valid		
Choice Confidence (CC)	CC1	AR increases user confidence in choosing products	0.870	Valid	0.870	Reliable
	CC2	AR helps users make better decisions	0.954	Valid		
	CC3	Users feel more confident about their choices after using AR	0.849	Valid		
Purchase Intention (PIN)	PIN1	Users intend to purchase products after using AR	0.913	Valid	0.933	Reliable
	PIN2	Users plan to purchase products displayed through AR	0.947	Valid		
	PIN3	Users tend to choose products viewed with AR	0.958	Valid		