



## The Influence of Augmented Reality on Purchase Intentions through Consumers of Madame Gie Products

Debora Dwi Rahayu Nugroho<sup>1</sup>, Mochammad Yudha Febrianta<sup>2</sup>

<sup>1,2</sup>Telkom University, Indonesia

**ABSTRACT:** Beauty products are needed by every individual, with various types of products offered, including quality, price, brand, and packaging. Therefore, the Purchase intentions of beauty products are very diverse. Madame Gie is one of the beauty product brands that has plunged into the use of Augmented Reality to make it easier for consumers to choose product variances. This study aims to determine and analyze the effect of Augmented Reality experiences on the purchase intention of Madame Gie products in Bandung, with Consumers' Control as an intervening variable. This study uses a quantitative approach with a questionnaire through Google Form of 385 samples and analyzed by the Smart-PLS statistical program based on this research, the AR experience positively influences consumer Purchase Intention toward Madame Gie products. Consumer's Control also plays a crucial role in the relationship between AR experience and Purchase Intention. Therefore, companies need to consider the importance of giving control to consumers in AR technology usage to maximize its impact on consumer purchase intention and enhance the performance of their beauty product marketing.

**KEYWORDS:** augmented reality, beauty products, consumers' control, purchase intention, virtual try on

### INTRODUCTION

The development of technology and information has made society increasingly open in their global knowledge. Along with the advancement of technology and the internet, it is now easier for people to obtain the information they desire. One aspect of technological advancement and the internet in Indonesia is the increasing number of users. According to a survey by the Association of Indonesian Internet Service Providers (APJII), internet users in Indonesia reached 215.63 million users from 2022 to 2023, equivalent to 78.19 percent of Indonesia's total population of 275.77 million. Based on the high number of internet users in Indonesia, this presents a significant opportunity for e-commerce, which can potentially increase consumer interest in purchasing every year. E-commerce types in Indonesia include platforms such as Shopee, Bukalapak, Tokopedia, and Lazada. (APJII, 2023)

According to a survey by the Indonesian Digital Marketing Association reported by Digimind.id (2023), the beauty product category, particularly cosmetics, ranked first in terms of transactions on Shopee e-commerce in 2020, with total sales reaching 247.1 million. (Digimind.id, 2023) Furthermore, data from a survey on the best-selling local makeup brands on Shopee and Tokopedia during the second quarter of 2022, as reported by Kompas.co.id (2023), showed that the beauty product brand Wardah by PT. Paragon ranked first as the best-selling local brand with a total market share of 7.65 percent, followed by Make Over with 6.83 percent, Luxcrime with 5.07 percent, Pixy by PT. Tandom Indonesia with 6.1 percent, and Somethinc with 4.31 percent. Madame Gie, on the other hand, achieved a market share of 2.13 percent, indicating that it has not yet been able to compete with competitors such as Wardah, Make Over, Luxcrime, Pixy, and Somethinc to establish itself as a leading local beauty brand. Therefore, Madame Gie needs further efforts and innovation to increase product sales and compete with other beauty product competitors, enabling it to sustainably survive in the market. Competition among local beauty product competitors is influenced by factors that affect consumer purchasing interest, which in turn impacts product sales.

According to Halim (2019), purchasing interest is the behavior that arises in consumers consisting of their beliefs in the quality and price offered by businesses to consumers and is part of the consumer behavior component in consumption attitudes, the tendency of respondents to act before actual purchasing decisions are made. A preliminary study involving 30 respondents in the Bandung area regarding purchasing interest in Madame Gie beauty products on e-commerce as one of the local beauty brands showed a lack of interest in Madame Gie products, with 53.3 percent stating they are not interested in purchasing Madame Gie products due to doubts about the product's contents, while 46.7 percent of respondents expressed interest in purchasing Madame Gie products as their beauty brand choice. Furthermore, 70 percent of respondents stated that they search for information about Madame Gie products, while the remaining 30 percent do not search for product information. With the development of new media technology, consumers are actively



involved in creating and delivering value. This active involvement can increase consumers' control over product and service experiences. Greater consumer control naturally implies a wider, more complex, adaptive, and open decision-making process (Whang, 2021).

In an advanced preliminary study, it was found that 13 respondents, or 43.4 percent, said that shopping at Madame Gie's online store does not save consumers time. Additionally, 16 respondents, or 53.5 percent, stated that shopping at the online store is not easy to understand. This poses a challenge for companies to make online stores easier for everyone to use, especially for potential consumers who are visiting Madame Gie's online store for the first time. According to Whang (2021), Augmented Reality Experience significantly influences Purchase Intention. The presence of Augmented Reality technology allows potential consumers to experience products virtually through Augmented Reality, making it easier for consumers and consequently increasing purchasing interest. This is related to consumers' control over understanding and perceiving purchases through detailed visual information about products in Augmented Reality technology (Whang, 2021). Madame Gie is one of the pioneers of AR Virtual Try-On in Indonesia. The Virtual Try-On feature is a response to consumer problems during the pandemic. Large-scale social distancing policies by the government have made it difficult for consumers to try out products, especially cosmetics, which generally have testers available for consumers due to varying skin profiles (Whang, 2021).

Previous research by Watson (2018) has stated various positive benefits for companies after implementing Augmented Reality technology in beauty products, as indicated by increased sales conversion and repurchase rates, suggesting that companies should implement it. Based on the above description, this research is aimed at analyzing the correlation or relationship between consumer experiences in using Augmented Reality technology. The novelty of this research is the focus on beauty products with the Madame Gie brand as one of the local brands and its correlation with the user experience of Augmented Reality. This will be conducted through a survey of consumers and potential consumers in the Bandung area.

## LITERATURE REVIEW

### Augmented Reality

Augmented Reality is a technology that allows consumers to engage impersonally with virtual representations with their own body as a substitute for real-world try-outs, thus easily providing size and fit guidance (Judistira, 2022). According to Hilty (2020), Augmented Reality (AR) can be a solution for consumers to reduce direct contact through virtually displayed information (Ghiffari, 2022). Augmented Reality utilizes two characteristics or indicators as follows (Hilty, 2020):

1. Vividness

Vividness is defined as the 'technology's ability to generate rich sensorial-mediated environments. Clearer product displays tend to influence consumers' cognitive processing according to Keller and Block. Research by Safitri (2022) reveals that Augmented Reality can be well-received by cosmetic product consumers, thus influencing purchase intention (Safitri, 2022).

2. Interactivity

Interactivity is defined as technology operating through telecommunication channels, such as telephones, to provide person-to-person or machine-to-machine interactions that mimic interpersonal communication. Perceived interactivity is a concept still evolving. According to Yohanes' research (2023), Interactivity influences purchase intention. Furthermore, according to research by Monalisa (2021), interactivity together with advertising influences purchase intention.

### Purchase Intention

According to Kotler as cited in Alghifari (2021), purchase intention is a mindset that emerges after stimulation from a product they see, followed by a desire to purchase and possess it. The indicators of purchase intention according to Ferdinand as cited in Alghifari (2021) are as follows:

1. Transactional interest, which is a person's tendency to purchase a product.
2. Referential interest, which is a person's tendency to refer the product to others.
3. Preferential interest, which indicates a person's behavior with a primary preference for the product. This preference can be changed if something happens to their preferred product.
4. Exploratory interest, which indicates a person's behavior of constantly seeking information about the desired product and searching for other information that supports the positive attributes of the product.

Consumers' Control

Consumer's control is defined as the self-regulation of consumers and their ability to organize, guide, regulate, and direct behavior towards positive consequences. According to McMillan et al., as cited in Whang (2021), the indicators of consumer's control include the following (Whang, 2021):

1. Behavioral Control

Behavioral control refers to consumers' perceptions of what they can do to influence a given situation. According to research by Peña-García (2020), Behavioral Control influences consumers' Purchase Intention.

2. Cognitive Control

Cognitive control refers to the prediction and understanding of the next steps in performing tasks. Consumers evaluate the information provided and integrate it to predict and interpret the next steps in specific situations. Based on previous research by Zhan (2022), Cognitive Control has a positive and significant influence on Purchase Intention.

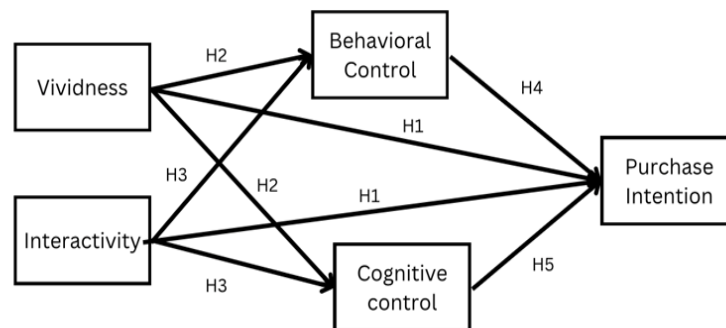


Figure 1. Conceptual Framework

The framework of thinking in the above diagram aims to understand the influence of Augmented Reality on Purchase Intention. Consumers' Control mediates the process and behavior of consumers, which can help reduce uncertainty that may arise from transaction processes or behaviors, thus resulting in higher satisfaction.

1. Influence of Augmented Reality on Purchase Intention According to Steuer as cited in Whang (2021), high-quality product presentation helps reduce risk by creating a sense of non-mediation, reducing barriers between consumers and products. When customers feel as if the product is physically present with them, negative impressions can decrease because the AR experience provides a richer product presentation with a high level of telepresence (Sustaningrum, 2023).

- 1. H1a: Augmented Reality (Vividness) has a positive and significant influence on Purchase Intention
- 2. H1b: Augmented Reality (Interactivity) has a positive and significant influence on Purchase Intention

2. Influence of Augmented Reality on Purchase Intention with Consumers' Control as the Intervening Variable AR allows consumers to actively experience a product virtually, enhancing consumer behavioral control. Higher levels of autonomy positively affect purchase decisions. This is because consumers with AR experience find it easier to select products in online or mobile stores as AR allows them to apply products to their own photos (Whang, 2021).

- 1. H2a: Augmented Reality (Vividness) experience influences the level of Behavioral Control of consumers
- 2. H2b: Augmented Reality (Vividness) experience influences the level of Cognitive Control of consumers
- 3. H3a: Augmented Reality (Interactivity) experience influences the level of Behavioral Control of consumers
- 4. H3b: Augmented Reality (Interactivity) experience influences the level of Cognitive Control of consumers
- 5. H4: Behavioral Control mediates the relationship between Augmented Reality and Purchase Intention
- 6. H5: Cognitive Control mediates the relationship between Augmented Reality and Purchase Intention

RESEARCH METHODOLOGY

This research employs a quantitative method through a survey with respondents criteria located in the Bandung area, who have used Augmented Reality in the last 6 months, and have purchased Madame Gie from an online store in the last 6 months. This research utilizes the formula from Bernoulli as follows.

$$n = \frac{1,96^2 \times 0,5 \times 0,5}{0,5^2} = 384,19$$

Operational Definition of Variables:

- a) Independent Variable (X) The independent variable is a variable that can influence the emergence of the dependent variable. The independent variable in this research is Augmented Reality with the dimensions of Vividness and Interactivity.
- b) Dependent Variable (Y) The dependent variable is a variable that is influenced by the presence of independent variables. The dependent variable in this research is Purchase Intention.
- c) Mediating Variable (Z) The mediating variable is a variable that can influence the relationship between the independent variable and the dependent variable, creating an indirect and unobserved relationship. The mediating variable in this research is Consumers' Control with the dimensions of Behavioral Control and Cognitive Control.

The questionnaire in this research uses a Likert scale with 5 response criteria: Strongly Agree 5 points, Agree 4 points, Neutral 3 points, Disagree 2 points, and Strongly Disagree 1 point. As for the data analysis technique, it utilizes descriptive statistics and Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis with the assistance of Smart-PLS software, consisting of validity and reliability testing, as well as inner model analysis including Coefficient of Determination (R<sup>2</sup> Value), Stone-Geisser's (Q<sup>2</sup>), Goodness of Fit test, and hypothesis testing using t-tests based on p-value criteria.

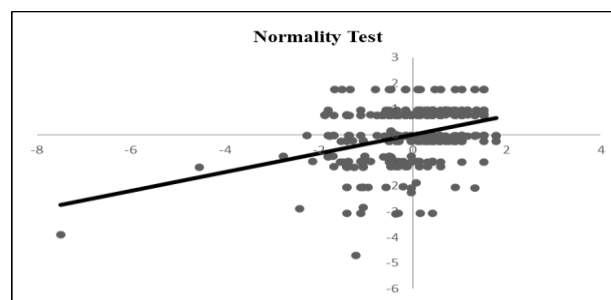


Figure 2. Result of Normality Test

Based on the results of the normality test shown in the above diagram, it indicates that the data is not normally distributed, as indicated by the data distribution shown in the points on the diagonal axis (Pratama, 2021). Therefore, data analysis in this study is conducted using the Structural Equation Modeling (SEM) method to test the model. Partial Least Squares Structural Equation Modeling (PLS-SEM) is a non-parametric data analysis method that does not require the assumption of data distribution. PLS-SEM can be used with data that is not normally distributed because the PLS algorithm transforms non-normal data through the central limit theorem (Marliana, 2020).

Partial Least Squares Structural Equation Modeling (PLS-SEM) is a combination of interdependence and dependence techniques. The SEM method is based on the analysis of total variance and includes both the Measurement Model and the Outer Model. The steps in applying this method involve using a measurement model called Confirmatory Composite Analysis to identify the contribution of each measured variable to its construct and evaluate the reliability and validity of the model (Joseph, 2019).

Outer Model: The measurement model defines latent constructs, which are hypothesized but unobservable concepts represented by observable or measurable variables. According to Joseph (2019), the Outer Model is evaluated through Convergent Validity, Discriminant Validity, and Internal Consistency.

Convergent Validity: Convergent validity is a metric of the overall measurement model that measures the extent to which indicators of a construct converge, thereby explaining item variance. An indicator is considered to have good convergent validity if the loading is >0.70, and an acceptable Average Variance Extracted (AVE) is >0.50 or higher (Joseph, 2019).

Discriminant Validity: Discriminant validity is a metric that indicates the extent to which a construct differs from other constructs. Cross Loadings is the first approach when assessing discriminant validity, with values >0.70 (Joseph, 2019).

Internal Consistency Reliability: Internal consistency states that all items or indicators should measure the same construct and thus be highly correlated. Internal consistency can be measured using Cronbach's alpha and composite reliability. Composite reliability values of 0.60 to 0.70 are acceptable in exploratory research (Joseph, 2019).



Inner Model: The structural model tests the relationships expressed in a series of equations that can estimate a series of separate but interdependent multiple regression equations (Joseph, 2019).

Coefficient of Determination (R<sup>2</sup> Value): The Coefficient of Determination or R<sup>2</sup> value ranges from 0 to 1, with higher levels indicating higher prediction accuracy. R<sup>2</sup> values of 0.20 are considered high, while in marketing-focused research, R<sup>2</sup> values of 0.75, 0.50, or 0.25 for endogenous latent variables are used. These values are described as substantial, moderate, or weak, respectively (Joseph, 2019).

Stone-Geisser's (Q<sup>2</sup>): Stone-Geisser's (Q<sup>2</sup>) greater than zero for reflective endogenous latent variables indicates the predictive relevance of the path model for specific dependents in the construct. The Q<sup>2</sup> value can be calculated using two different approaches: cross-validated redundancy for the structural path model estimation and cross-validated communality to estimate construct scores for endogenous target constructs to predict missing data points (Joseph, 2019).

In this way, this research utilizes SmartPLS software to examine the relationships between variables and predict relationships between constructs, confirming theories and explaining the existence of relationships between latent variables.

Goodness of Fit Test: Goodness of Fit represents a model used to represent the covariance matrix of the indicators used. Therefore, the value of GoF is considered good if there is a difference between the observed covariance matrix and the estimated covariance matrix. If the GoF value produces a good result, then a research model is considered suitable and appropriate for use in a study. A model in research is said to have a good fit if it has a GoF value of 0.38, is said to have a marginal fit if it has a value of 0.25, and is said to have a poor fit if it has a value of 0.1 (Ghozali, 2021).

Hypothesis Testing: Hypothesis are defined as temporary assumptions supported by empirical data in a research study and derived from the theoretical basis underlying the formation of the conceptual model of the study. To test hypotheses through PLS, the bootstrap resampling method is used by examining the t-statistic (Ulfa, 2021).

**ANALYSIS**

**1) Descriptive Statistical Analysis**

**Table 1. Descriptive Statistics Results**

Construct	N	Min	Median	Max	Mean	Std.Dev
AR	385	19	40	43	39,26	2,19
PI	385	7	13	15	13,03	1,14
CC	385	18	27	30	26,37	1,4
AR Vividness	385	11	22	24	21,88	1,25
AR Interactivity	385	8	18	20	17,38	1,34
CC Behavioural Control	385	9	13	15	13,22	0,87
CC Cognitive Control	385	8	13	15	13,14	1,05

Augmented Reality (X) obtained a mean value of 39.26 with min 19, max 43, median 40, and standard deviation 2.19. Then Purchase Intention (Y) means 13.03 with min 7, max 15, median 13, and standard deviation 1.14. Furthermore, Consumer's Control (Z) obtained a mean value of 26.37 with a min of 18, a max of 30, a median of 27, and a standard deviation of 1.4. Meanwhile, based on the analysis of the AR variable with the Vividness indicator, the mean is 21.38, min 11, max 24, median 22, and standard deviation 1.25, Interactivity is the mean 17.38, min value 8, max 20, median 18, and standard deviation 1.34, and the Behavioral Control indicator with a mean of 13.22, min 9, max 15, median 13, and standard deviation 0.87, and Cognitive Control with a mean of 13.44, min 8, max 15, median 13, and standard deviation 1.05.

**Table 2. Score Interpretation**

Construct	Score (%)	Criteria
AR	85,95	Strongly Agree
PI	86,86	Strongly Agree
CC	87,89	Strongly Agree
AR Vividness	87,52	Strongly Agree

AR Interactivity	86,92	Strongly Agree
CC Behavioural Control	88,14	Strongly Agree
CC Cognitive Control	87,64	Strongly Agree

- a. The largest cumulative number:  $385 \times 5 = 1925$  and the smallest cumulative number:  $385 \times 1 = 385$
- b. Range value = largest percentage level – smallest percentage level or total answer scale = 100 percent – 20 percent / 5 = 16 percent, so that based on these results we get an interval of 16 percent with the following assessment criteria.

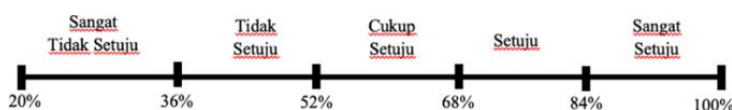


Figure 3. Continuum Line

Based on the results of data acquisition, we obtained 85.95 percent on the Augmented Reality (X) variable with the criteria of Strongly Agree, then the Purchase Intention (Y) variable obtained a score of 86.86 percent with the criteria of Strongly Agree, and the Consumer's Control (Z) variable with a score 87.89 percent and Strongly Agree criteria. Meanwhile, the variable based on the Vividness indicator produces a score of 87.52 and the criteria for Strongly Agree, and the Interactivity indicator with a score of 86.02 with the criteria for Strongly Agree. Furthermore, the Behavioral Control indicator obtained a score of 88.14 with the criteria of Strongly Agree, and the Cognitive Control indicator with a score of 87.64 with the criteria of Strongly Agree.

Evaluation of the Measurement Model (Outer Model)

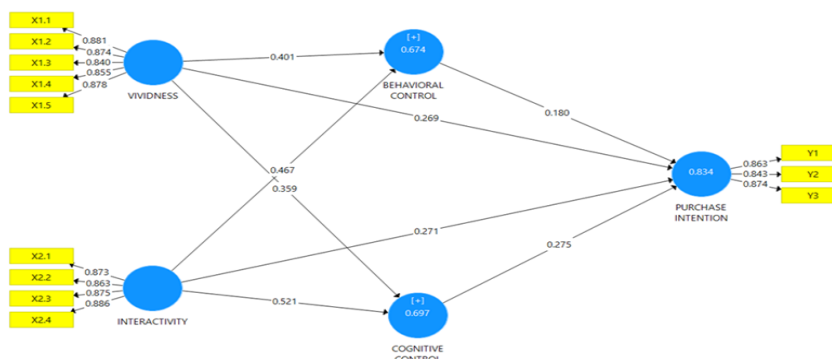


Figure 4. Test Model Scheme

Convergent Validity (Loading Factor)

Table 3. Outer Loading Score

Variable	Indicator	Score	Explanation
Augmented Reality	X1.1: Vividness	0,881	Valid
	X1.2: Vividness	0,874	Valid
	X1.3: Vividness	0,840	Valid
	X1.4: Vividness	0,855	Valid
	X1.5: Vividness	0,878	Valid
Purchase Intention	X2.1: Interactivity	0,873	Valid
	X2.2: Interactivity	0,863	Valid
	X2.3: Interactivity	0,875	Valid
	X2.4: Interactivity	0,886	Valid
Purchase Intention	Y1: Purchase Intention	0,863	Valid
	Y2: Purchase Intention	0,843	Valid



<i>Consumer's Control</i>	Y3: <i>Purchase Intention</i>	0,874	Valid
	Z1.1: <i>Behavioural Control</i>	0,892	Valid
	Z1.2: <i>Behavioural Control</i>	0,878	Valid
	Z1.3: <i>Behavioural Control</i>	0,885	Valid
	Z2.1: <i>Cognitive Control</i>	0,893	Valid
	Z2.2: <i>Cognitive Control</i>	0,881	Valid
	Z2.3: <i>Cognitive Control</i>	0,897	Valid

Convergent Validity testing is a reflexive measurement of indicators aimed at determining the correlation between indicator scores and Loading Factor using the value criteria stated in Loading Factor on each indicator, which if it is greater than 0.50 then it can be declared valid (Fazriansyah, 2022). Based on the data above in the Outer Loading value table, it shows that all items in each indicator and variable depict good validity and can be continued in further testing.

**Table 4. AVE Score (Average Variance Extracted)**

Construct	Score	Explanation
AR	0,749	Valid
PI	0,764	Valid
CC	0,783	Valid

Based on the results of testing the Average Variance Extracted (AVE) value, it shows that the Augmented Reality (X) variable obtained an AVE value of 0.749. Then the Purchase Intention (Y) variable obtained an AVE value of 0.764. Next, the Consumer's Control (Z) variable as an intervening variable shows an AVE value of 0.783. Thus, all variables in the research are above the value of 0.50 so they are declared valid and reliable for use in measurement.

**Discriminant Validity (Cross Loading)**

**Table 5. Cross Loading Score**

Item	X1	X2	Y	Z1	Z2
X1.1	<b>0,881</b>	0,704	0,733	0,710	0,702
X1.2	<b>0,874</b>	0,692	0,716	0,683	0,679
X1.3	<b>0,840</b>	0,686	0,716	0,655	0,672
X1.4	<b>0,855</b>	0,636	0,704	0,638	0,616
X1.5	<b>0,878</b>	0,697	0,734	0,641	0,665
X2.1	0,654	<b>0,873</b>	0,705	0,646	0,673
X2.2	0,700	<b>0,863</b>	0,748	0,688	0,706
X2.3	0,704	<b>0,875</b>	0,744	0,702	0,722
X2.4	0,699	<b>0,886</b>	0,755	0,700	0,713
Y.1	0,713	0,730	<b>0,863</b>	0,706	0,707
Y.2	0,691	0,709	<b>0,843</b>	0,684	0,733
Y.3	0,744	0,740	<b>0,874</b>	0,738	0,748
Z1.1	0,702	0,696	0,745	<b>0,892</b>	0,716
Z1.2	0,659	0,662	0,713	<b>0,878</b>	0,748
Z1.3	0,681	0,721	0,732	<b>0,885</b>	0,723
Z2.1	0,671	0,724	0,749	0,734	<b>0,893</b>
Z2.2	0,697	0,705	0,756	0,724	<b>0,881</b>
Z2.3	0,692	0,722	0,761	0,741	<b>0,897</b>

The process of testing discriminant validity involves comparing the results of cross-loading values against certain criteria. According to Husnawati (2019), if the loading values for a construct are higher than those for other constructs, it indicates good discriminant validity. The data presented indicates that the loading value exceeds those of other variables. Therefore, the constructs in this research model are considered valid and suitable for measuring variables, allowing for further testing and analysis to proceed.

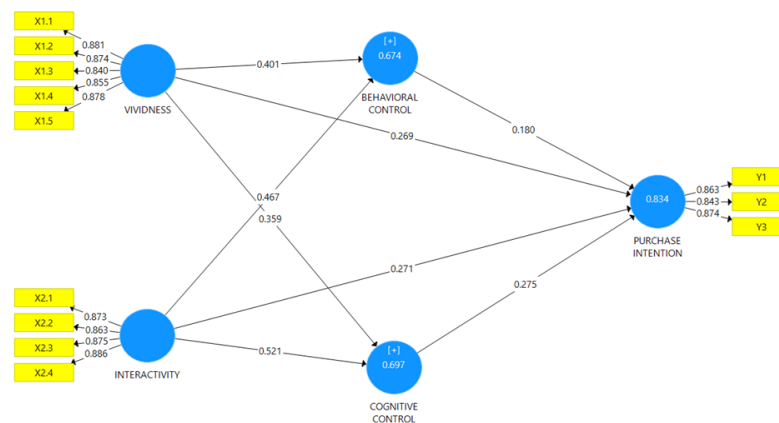
**Composite Reliability**

**Table 6. Composite Reliability and Cronbach’s Alpha**

Construct	Composite Reliability	Cronbach’s Alpha
Vividness	0,937	0,916
Interactivity	0,928	0,817
Behavioral Control	0,916	0,862
Cognitive Control	0,920	0,870
Purchase Intention	0,895	0,824
<b>Mean</b>	0,918	0,858

Variables in the model can be considered valid if they meet the criteria of Composite Reliability with values greater than 0.6. This testing can be supported by Cronbach's Alpha values, where if the obtained value is greater than 0.7, the variable can be considered to meet the criteria or be reliable. Based on the data provided, the variable Augmented Reality (X) Vividness obtained a Composite Reliability value of 0.937 and Cronbach's Alpha of 0.916, while Interactivity had a Composite Reliability of 0.937 and Cronbach's Alpha of 0.817. Furthermore, the variable Consumer’s Control (Z) with Behavioral Control obtained a Composite Reliability of 0.916 and Cronbach's Alpha of 0.862, and Cognitive Control had a Composite Reliability of 0.920 and Cronbach's Alpha of 0.870. Finally, the variable Purchase Intention (Y) within the PI construct obtained a Composite Reliability of 0.895 and Cronbach's Alpha of 0.824. Thus, the values for all variables exceed the criteria of Composite Reliability (0.6) and Cronbach's Alpha (0.7), indicating that the model is reliable and suitable for use in the research.

**Evaluation of the Structural Model (Inner Model)**



**Figure 5. Evaluation of the Structural Model (Inner Model)**

**Coefficient of Determination (R<sup>2</sup> Value)**

**Table 7. Results of R<sup>2</sup>**

Construct Model	Score of R <sup>2</sup>
Behavioral Control	0,674
Cognitive Control	0,697
Purchase Intention	0,834





The R<sup>2</sup> value close to 1 indicates that almost all the necessary information to describe the independent variable is possessed by the independent variable (Ghozali, 2021). Based on the data in the table of R<sup>2</sup> calculation results above, it shows that in the Behavioral Control construct model, it obtains a value of 0.674, meaning that the Augmented Reality variable is able to explain the Consumer's Control variable in the Behavioral Control indicator by 67.4 percent. Then, in the Cognitive Control construct model, it shows a result of 0.697, indicating that the Augmented Reality variable is able to explain the Consumer's Control variable in the Cognitive Control indicator by 69.7 percent, and Purchase Intention by 0.834.

**Predictive Relevance (Q<sup>2</sup>)**

Advanced measurement in structural models utilizes Predictive Relevance or Q<sup>2</sup>, aimed at determining the magnitude of the values obtained in the model along with parameter estimation. The criteria for the strength and weakness of the model are determined based on the results, where a strong model has a value of 0.35 or higher, a moderate model has a value of 0.15 or higher, and a weak model has a value of 0.02 or higher. The calculation of predictive relevance uses the equation  $Q^2 = 1 - (1 - R^2_1)(1 - R^2_2)(1 - R^2_3)$  (Darwin, 2020). Based on this equation, the calculation result of Q<sup>2</sup> is shown to be 0.98, indicating that the model in the study falls into the strong category because it is greater than the value of 0.35.  $0.92 = 1 - (1 - 0.674)(1 - 0.697)(1 - 0.834)$ .

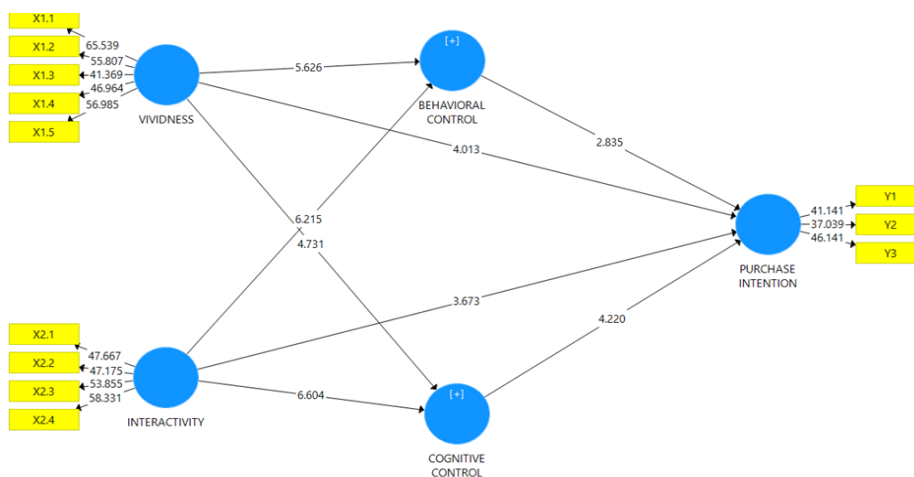
**Goodness of Fit (GoF)**

**Table 8. Result of Mean Communality**

Construct Model	R <sup>2</sup>	Communality
Behavioral Control	0,674	0,783
Cognitive Control	0,697	0,793
Purchase Intention	0,834	0,740
Means	0,735	0,772

The GoF value is obtained by taking the square root based on the average communalities index, then multiplied by the mean value of R<sup>2</sup> within the range of 0 to 1, with interpretations categorized into three groups including small category with GoF value of 0.1 or more, medium category with GoF value of 0.25 or more, and large category with GoF value of 0.36 or more. Thus, the GoF equation used is  $GoF = \sqrt{(Com \times R^2)}$  where Com is the mean Communality, and R<sup>2</sup> is the mean of R<sup>2</sup> (Maryani, 2020). Based on the data above, in the testing of Goodness of Fit SEM used for evaluating empirical model based on research results and whether it is aligned to be accepted according to existing indexes. Therefore, based on the data above, the GoF value obtained is 0.75 or greater than 0.35, indicating that the GoF of the research model falls into the large category.

**Hypothesis Testing Result (Bootstrapping)**



**Figure 6. Hypothesis Testing Result**



Hypothesis testing results were conducted using the t-test or T-test through the bootstrapping method to allow for freely distributed data and not require assumptions based on normal distribution. The testing results require a T-test value with two-tailed significance greater than 1.96 at a 5% error level, or based on a p-value less than 0.05 to accept the research hypothesis (Abdillah, 2015).

1. H1a: Augmented Reality (Vividness) has a positive and significant influence on Purchase Intention. Based on the hypothesis testing results with Bootstrapping through partial two-tailed T-test at a 5% error level, it is shown that the Augmented Reality variable (X) with Vividness indicator towards Purchase Intention (Y) produces a T-stat of 4.01, which is greater than 1.96. Therefore, Augmented Reality Vividness (X) has a positive and significant influence on Purchase Intention (Y).
2. H1b: Augmented Reality (Interactivity) has a positive and significant influence on Purchase Intention. Based on the hypothesis testing results above, it is shown that the Augmented Reality variable (X) with Interactivity indicator produces a T-stat of 3.67, which is greater than 1.96. Thus, hypothesis H1b is accepted, and Augmented Reality Interactivity (X) has a positive and significant influence on Purchase Intention (Y).
3. H2a: Augmented Reality (Vividness) experience by consumers affects the level of Consumer's Behavioral Control. Based on the table data above, it is shown that the Augmented Reality variable (X) with Vividness indicator towards Behavioral Control (Z) produces a T-stat of 5.63, which is greater than 1.96. Thus, consumers who experience Augmented Reality usage (X) in the Vividness indicator show higher Behavioral Control (Z).
4. H2b: Augmented Reality (Vividness) experience by consumers affects the level of Consumer's Cognitive Control. The hypothesis testing results show that Augmented Reality (X) with the Vividness indicator towards Cognitive Control (Z) produces a T-stat of 4.73, which is greater than 1.96. Thus, consumers who experience Augmented Reality usage (X) in the Vividness indicator show high Cognitive Control (Z).
5. H3a: Augmented Reality (Interactivity) experience by consumers affects the level of Consumer's Behavioral Control. Based on the data above, it is shown that the Augmented Reality variable (X) with Interactivity indicator towards Behavioral Control (Z) produces a T-stat of 6.21, which is greater than 1.96, indicating that consumers with Augmented Reality experience (X) through Interactivity show higher Behavioral Control (Z).
6. H3b: Augmented Reality (Interactivity) experience by consumers affects the level of Consumer's Cognitive Control. The data above indicates that the Augmented Reality variable (X) with Interactivity indicator towards Cognitive Control (Z) produces a T-stat of 6.6, which is greater than 1.96. Therefore, consumers who experience Augmented Reality (X) through Interactivity show higher Cognitive Control (Z).
7. H4: Behavioral Control mediates the relationship between Augmented Reality and Purchase Intention. Based on the data above, the Augmented Reality variable (X) with Consumer's Control as a mediation variable on the Behavioral Control indicator (Z) produces a T-stat of 2.83, which is greater than 1.96. Thus, Behavioral Control mediates the relationship between Augmented Reality (X) and Purchase Intention (Y).
8. H5: Cognitive Control mediates the relationship between Augmented Reality and Purchase Intention. Based on the data above, the Augmented Reality variable (X) with Consumer's Control as a mediation variable on the Cognitive Control indicator (Z) produces a T-stat of 4.22, which is greater than 1.96. Therefore, Cognitive Control mediates the relationship between Augmented Reality (X) and Purchase Intention (Y).

In summary:

1. The influence of Augmented Reality on Purchase Intention: The results indicate that the experience of using Augmented Reality in the beauty products of the Madame Gie brand through the Vividness and Interactivity indicators has a positive and significant influence on consumer Purchase Intention. Previous research by Heller (2019) suggests that Augmented Reality plays a role in integrating product presentations in online stores to increase Purchase Intention through virtual presence, which helps virtual objects appear real and provide information consistent with the product, thus enhancing the consumer's experience in obtaining information and controlling themselves in obtaining information (Heller, 2019). The results also show that consumers who have experienced Augmented Reality Vividness exhibit higher Consumer's Control in both Behavioral Control and Cognitive Control indicators.
2. Vividness refers to the clarity of conveying messages to increase consumer persuasion and persuasion, involving the clarity of Augmented Reality in increasing their knowledge and understanding of a product. Cognitive Control is the psychological



condition of consumers in experiencing both sides, namely thinking or cognition. Consumers who experience Augmented Reality in the Interactivity indicator show higher levels of Behavioral Control and Cognitive Control, but not significant. Based on research by Sustaningrum (2023), the results show that through the adaptation of Augmented Reality, it can become a persuasive technology that provides and shapes consumer experiences through the aspect of Cognitive Control, thus not only functioning functionally by providing alternative product options.

3. The influence of Augmented Reality on Purchase Intention with Consumer's Control as an intervening variable: The research results indicate that the influence of Augmented Reality experience on Purchase Intention is mediated by Consumer's Control factors including Behavioral Control and Cognitive Control. According to previous research by Susanto (2021), Consumer's Control in the Behavioral Control indicator contributes to consumer Purchase Intention. Purchase Intention stimulated by Consumer's Control is also influenced by the individual's ability to use information technology, where higher abilities, such as purchasing through e-commerce platforms, will significantly increase consumer Purchase Intention. Thus, Consumer's Control can influence the level of Purchase Intention in consumers and can mediate the influence between the experience of using Augmented Reality on Purchase Intention. Based on previous research by Memon (2020), in terms of Consumer's Control, it is necessary to pay attention to the level of ease in obtaining products as perceived by consumers. If consumers or prospective consumers find it difficult to obtain the product, it will decrease their perception to buy a product. Thus, through the implementation and maintenance of providing Augmented Reality features manifested in trying on beauty products from the Madame Gie brand, it can influence Consumer's Control and Purchase Intention.

## CONCLUSIONS

Madame Gie is one of the beauty product brands that pioneers the use of Augmented Reality technology through the AR Virtual Try-On feature to facilitate consumers in selecting product variants according to their needs and desires, with the final product information displayed through devices without the need to visit conventional stores. Based on the observations of Augmented Reality technology in the Madame Gie beauty product brand and its influence on Purchase Intention and Consumer's Control as intervening variables, the following conclusions are drawn:

1. Augmented Reality Experience has a significant positive influence on Purchase Intention for Madame Gie products in Bandung, through Vividness and Interactivity towards Purchase Intention. This influence indicates that visually engaging and immersive experiences, as well as experiences that allow consumers to interact actively, can increase consumer motivation to engage further and make purchases.
2. Augmented Reality Experience has a significant positive influence on Consumers' Control for Madame Gie in Bandung. Vividness and Interactivity in Augmented Reality can enhance users' Behavioral Control abilities in that situation and improve users' perception of their behavior control in that digital environment.
3. Consumer's Control has a significant positive influence on Purchase Intention, and Augmented Reality Experience has a significant positive influence on Purchase Intention for Madame Gie products in Bandung with Consumer's Control as a mediating variable. Therefore, Consumer's Control can support the influence of Augmented Reality on Purchase Intention.

Based on the results and conclusions of this study, the following academic recommendations can be provided:

- a. The implementation of this research is limited to consumers in the Bandung, West Java region. Therefore, future research should consider expanding the location of respondents to a wider area and adding other dimensions that are aligned with the external situation of the sample respondents.
- b. Further recommendations for future researchers, especially those studying Purchase Intention in beauty products of a brand, could explore other variables that may influence consumer Purchase Intention, such as psychological, social, and cultural factors.
- c. Another recommendation for future research could be to include comparisons among different generations regarding purchasing interest in beauty products, thus determining differences in aspects of Consumer's Control, preferences, and efficiency aspects in using Augmented Reality features.



Based on the conclusion that the three research variables show that the experience of using Augmented Reality by consumers and potential consumers of Madame Gie beauty products can influence Purchase Intention both directly and through Consumer's Control as an intervening variable, the following practical recommendations can be given:

- a. Madame Gie brand is advised to make efforts to improve the quality of the final product results through Augmented Reality experiments, add product variants that can be tried by consumers through this feature to increase Augmented Reality usage, which can impact Purchase Intention.
- b. Madame Gie brand can develop Augmented Reality as a step to improve its relationship with consumers and potential consumers, such as improving the quality of display and implementing various types of products in one try-on feature on Augmented Reality to enhance the perception of ease as part of Consumer's Control, which can impact Purchase Intention of consumers and potential consumers.
- c. Another recommendation for Madame Gie brand is to add campaigns focusing on the use of Augmented Reality, such as organizing pre-launch events for new products to be tried out early through this feature to attract consumer interest in new products, increase consumer usage of the feature, and hopefully drive increased Purchase Intention of consumers and potential consumers of the Madame Gie brand.
- d. Recommendations for other companies in the beauty product sales sector can also adapt Augmented Reality technology with try-on features to increase Purchase Intention and Consumer's Control for beauty products through knowledge of detailed product information and perceptions that can be directly applied to consumers and potential consumers through e-commerce platforms.

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