



The Impact of Metaverse Marketing on Consumer Perception through Roblox Experience in Wardah's Skinverse Campaign

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ABSTRACT

The development of digital marketing has encouraged brands to use the metaverse as a more interactive and immersive medium for marketing communication. This study aims to analyze the impact of metaverse marketing on consumer perceptions through the Roblox experience in the Wardah Skinverse campaign. This study employs a quantitative approach, using a survey administered to 148 Roblox users in Indonesia who have been exposed to the Wardah Skinverse campaign. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results show that metaverse marketing has a positive and significant effect on consumer perception ($\beta = 0.606$; $p < 0.001$) and a strong impact on the Roblox experience ($\beta = 0.767$; $p < 0.001$). The Roblox experience positively influences consumer perception ($\beta = 0.244$; $p = 0.006$) and partially mediates the relationship between metaverse marketing and consumer perception ($\beta = 0.188$; $p = 0.010$). An R^2 value of 0.655 indicates that the model has strong explanatory power. These findings emphasize the importance of interactive and immersive metaverse campaign design in shaping user experience and strengthening consumer perception.

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1. INTRODUCTION

Traditional forms of marketing are giving way to digital marketing, primarily through social media (Alshurideh et al., 2023; Qurtubi et al., 2022; Yawised et al., 2022). In this transition, strategically setting digital marketing objectives is essential, as it provides marketing teams with clear direction for selecting appropriate techniques and approaches and ensures that all stakeholders work toward shared goals (Amelia et al., 2024). As time has progressed, particularly since the COVID-19 pandemic, human activities have become increasingly virtual, giving rise to the concept of the metaverse as a new space for social and digital economic interaction. The metaverse presents opportunities as a new digital market that enables brands to develop more interactive and immersive marketing communications (Lu & Mintz, 2023). From a digital marketing perspective, the metaverse is seen as having a strategic role in strengthening branding through experiences that involve visual, emotional, and participatory aspects of consumers (Dwivedi et al., 2022; Khang et al., 2023; Safitri et al., 2024).

In line with these developments, branding strategies have shifted toward metaverse marketing, a form of marketing communication that emphasizes active interaction between brands and consumers within a virtual environment (Hussain et al., 2025; Kshetri, 2023; Safitri et al., 2024). The effectiveness of digital marketing no longer depends solely on visual appeal but also on consumer engagement, which fosters an emotional connection with the brand. The metaverse offers an immersive, interactive experience and has the potential to serve as a marketing communication medium that integrates visual, interactive, and emotional elements into a single experience (Adinugroho, 2024). One platform that can facilitate this form of communication is Roblox (Dwivedi et al., 2022).

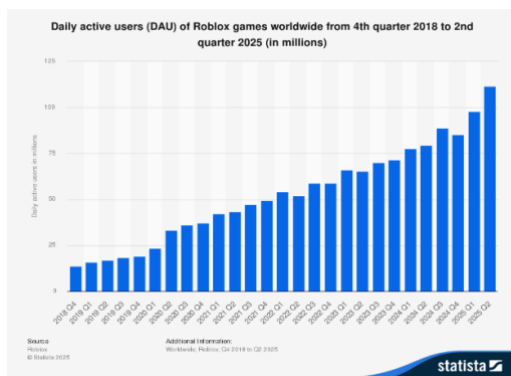


Figure 1. Daily Active Users (DAU) of Roblox Games Worldwide from Q4 2018 to Q2 2025

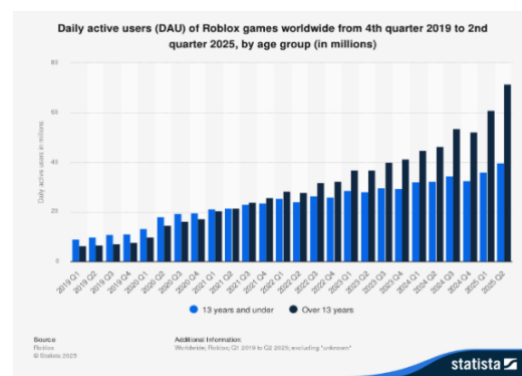


Figure 2. Daily Active Users (DAU) of Roblox Games Worldwide by Age Group from Q4 2019 to Q2 2025

Roblox is part of the metaverse marketing strategy because it enables a three-dimensional virtual world with rich visual design and high interactivity (Hardy et al., 2022; Lin, 2024). Globally, this platform has experienced significant user growth, as shown in **Figure 1**. Statista data (2025) indicate that Roblox's daily active users (DAU) reached 111.8 million in the second quarter of 2025, an increase of approximately 41% compared with the previous year. This growth indicates that Roblox not only functions as an entertainment platform but is also developing into a virtual space with strategic potential for digital marketing (Adinugroho, 2024).

Furthermore, Statista data (2025) indicate that Roblox user growth does not come solely from the children's age group. As shown in **Figure 2**, the number of users aged 13 and older

continues to increase. It has become the dominant group, particularly among users aged 16–26, reflecting characteristics of Generation Z. These findings indicate a demographic shift among Roblox users, with the platform becoming increasingly relevant to age segments with high purchasing power and brand engagement (Y. M. Tang et al., 2025). Previous research also shows that gamified brand experiences in the metaverse (Agarwal et al., 2025). The environment can increase hedonistic value and encourage consumers to interact with brands. Generation Z, in particular, tends to be more responsive to hedonistic needs than cognitive ones, so rich sensory experiences play an important role in building emotional connections with brands (Agarwal et al., 2025; Milanesi et al., 2024).

Interactive and enjoyable digital experiences on platforms such as Roblox can influence how consumers form perceptions of a brand (Dwivedi & Hughes, 2023). However, in the Indonesian context, the adoption of metaverse marketing is still limited and in its early stages of development. Wardah, a local brand, has a notable campaign on Roblox called Wardah Skinverse. Nevertheless, previous research on metaverse marketing has generally focused on global brands such as NikeLand, Gucci Town, and Vans World (Guzzetti et al., 2024; Heo, 2025; Hollensen et al., 2023; Wongkitrungrueng & Suprawan, 2024). It has highlighted more of the behavioural and engagement aspects of users (Kaur et al., 2024; Lee & Gu, 2022). There are still very few empirical studies exploring how user experiences in the metaverse shape consumer perceptions, especially in the context of local Indonesian brands.



Figure 3. Market Share of the Top 10 Personal Care and Beauty Brands on Shopee Indonesia in Q1 2025



Figure 4. Wardah Skinverse Virtual Brand Experience on Roblox (2025)

The competitive dynamics of Indonesia's beauty industry have become increasingly intense, particularly in digital marketplaces (Kharisma et al., 2024). As shown in **Figure 3**, Kompas data (2025) indicates that foreign brands such as Skintific currently dominate market share on Shopee Indonesia, surpassing Wardah as a leading local brand. This condition indicates that local brands face intense competition and must adopt more innovative marketing strategies to remain competitive. One such strategy is metaverse marketing, which enables brands to create more interactive and immersive experiences than conventional digital marketing channels (Kim et al., 2026). In this context, Wardah's Skinverse campaign on Roblox, as illustrated in **Figure 4**, represents a virtual brand environment designed to engage users through experiential interactions.

Despite the growing adoption of metaverse-based marketing, empirical evidence regarding its effectiveness remains limited, particularly as the metaverse continues to evolve into an experience-driven digital environment (Giang Barrera & Shah, 2023). Empirical studies examining how metaverse marketing shapes user experience and consumer perceptions remain scarce, particularly in the context of local brand campaigns. Therefore, this study examines the effect of metaverse marketing on consumer perception through the Roblox

experience, using the Wardah Skinverse campaign as a case study, and aims to contribute to both academic discussions and practical insights for brands operating in virtual environments.

2. METHODS

This study employs a quantitative survey design to examine the relationships among metaverse marketing, the Roblox experience, and consumer perceptions in the context of metaverse-based brand campaigns. Data were collected via a structured online questionnaire administered to active users of the Roblox platform in Indonesia who had been exposed to the Wardah Skinverse campaign. The survey was administered via Google Forms and distributed via social media (Instagram and TikTok) and online Roblox communities until the minimum number of respondents was reached. The research context was a virtual experience space, namely a Wardah Skinverse booth, on the Roblox platform, as introduced earlier in the study. This booth enabled users to interact via avatars, explore the virtual environment, claim items, and observe the Wardah brand's visual and symbolic elements in a three-dimensional world. This experience space was used as the context for measuring user experience with the metaverse campaign.

The target population of this study consisted of individuals in Indonesia aged 16 years and above who were active Roblox users and were aware of, or had participated in, the Wardah Skinverse campaign. A purposive sampling technique was employed, as the population could not be precisely identified and the study required respondents who met specific criteria. The minimum sample size was determined following the guidelines proposed by Hair et al. (2022), which recommends a sample size of five to ten times the number of indicators used in the model. To improve the robustness and stability of the PLS-SEM estimates, particularly given the inclusion of a mediating variable, this study adopted the upper bound of ten times the number of indicators. With nine indicators, the minimum required sample size was therefore 90 respondents.

The research instrument comprises a questionnaire with closed-ended items that measure three main constructs: metaverse marketing, the Roblox experience, and consumer perception. Each construct is measured by three indicators, yielding a total of nine statement items. A five-point Likert scale is used to measure all items, with answers ranging from "strongly disagree" to "strongly agree." The metaverse marketing indicators include interactivity, immersion, and campaign uniqueness (Dwivedi et al., 2022; F. Tang et al., 2023). User engagement, enjoyment, and emotional connection with the platform are measures of the Roblox experience (Khan et al., 2025; Vernuccio et al., 2025). Consumer perceptions are measured by exposure, attention, and interpretation of campaign content (Solomon, 2013; Samsudin et al., 2024).

The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS version 4.0. The analysis was conducted by evaluating the measurement model to assess construct validity and reliability, and by evaluating the structural model to analyze the relationships among the research variables simultaneously.

3. RESULTS AND DISCUSSION

This study employs a quantitative approach using a survey method. A total of 156 questionnaires were collected, of which 148 responses were deemed valid and suitable for analysis. The respondents were Roblox users in Indonesia who had been exposed to the

Wardah Skinverse campaign. The demographic characteristics of the respondents are presented in **Table 1**

Table 1. Characteristic of respondents

	Parameter	Frequency	%
Gender	Male	25	83.1
	Female	123	16.9
Age	16 - 18 years	18	12.2
	19 - 22 years	96	64.9
	23 - 26 years	34	23
	< 6 months	70	8.1
Roblox Duration	6 – 12 months	41	8.8
	1 – 2 years	12	27.7
	> 2 years	24	47.3
	Daily	51	34.5
Play Frequency	3 – 5x	44	29.7
	1 – 2x	31	20.9
	Rare	22	14.9

Source: Processed author (2025)

Respondent characteristics were analyzed to provide empirical context for the results of the research model tests. The majority of respondents were aged 19–22, followed by those aged 23–26, reflecting the dominance of young adults with high digital literacy and a strong affinity for interactive platforms. This age characteristic is relevant to the context of metaverse marketing, as this group tends to evaluate brands based on the quality of the experience, level of engagement, and the symbolic value they offer (Payal et al., 2024). However, for the variables gender and duration of playing Roblox, the frequency and percentage in the characteristics table were inconsistent, necessitating clarification of the data to avoid potential bias in interpreting the sample profile.

In addition to age, the duration and frequency of Roblox play are important indicators that reflect respondents' level of familiarity with the virtual environment. Respondents with longer playing experience and higher play frequency have greater opportunities to explore the campaign elements more comprehensively and to form a more stable evaluation of Wardah Skinverse. This condition supports the validity of respondents' assessments of the effectiveness of metaverse marketing, as their perceptions are not superficial but are grounded in repeated, sustained interactions within the platform.

3.1 Convergent Validity Test

As shown in **Figure 5**, the convergent validity test was conducted using outer loading values with a criterion of greater than 0.70. The test results showed that all indicators in the Metaverse Marketing (IM1, IN1, IN2, CU1, CU2), Roblox Experience (EC1, EC2, EN1, EN2, ENJ1, ENJ2), and Consumer Perception (AT1, AT2, EX1, EX2, INT1, INT2) constructs had loading factor values above the specified threshold. However, one indicator in the Metaverse Marketing construct, namely IM2, had a loading factor value below 0.70 and was therefore eliminated from the measurement model. After removing this indicator, all remaining indicators met the convergent validity criteria and were deemed suitable for further analysis.

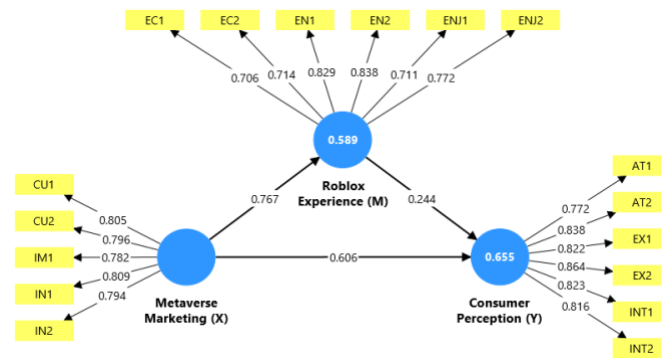


Figure 5. PLS-SEM Measurement Model (Outer Loadings)

Based on the outer model evaluation, the indicators in the three constructs make a sufficient contribution to representing their respective latent variables. In the Metaverse Marketing construct, the Interactivity and Campaign Uniqueness dimensions show relatively strong contributions, while Immersiveness remains in the valid category. In the Roblox Experience construct, the Engagement indicator makes the largest contribution, followed by Enjoyment and Emotional Connection. In the Consumer Perception construct, the Exposure, Attention, and Interpretation indicators have high loadings. This means that consumers form their opinions about the campaign through a mental process that includes exposure, attention, and interpretation. Overall, these results confirm that the measurement model meets the feasibility criteria and can be used to test structural relationships.

3.2 Measurement Model Evaluation

Table 2 presents the results of the outer loading test and outer model evaluation.

Table 2. Results of the outer loading test and the outer model

Variables	Indicator	Research Items	Outer Loading	Cron. Alpha	Comp. Reliable.	AVE
Metaverse Marketing (X)	Interactivity (IN)	I felt involved when trying out the free item claim feature at the Skinverse booth. (IN1)	0.809	0.857	0.897	0.636
		Claiming items at the Skinverse booth was a meaningful experience for me. (IN2)	0.794			
	Immersiveness (IM)	The virtual environment of Skinverse on Roblox is immersive and encourages further exploration. (IM1)	0.782			
		The visual appearance of the Skinverse booth features a distinctive style that differs from that of other Roblox experiences. (CU1)	0.805			
	Campaign Uniqueness (CU)	The modern and futuristic design of the Skinverse booth makes the campaign stand out compared to other brands. (CU2)	0.796			
Roblox Experience (Z)	Engagement (EN)	The presence of the Skinverse booth encourages me to remain in Roblox longer. (EN1)	0.829	0.856	0.893	0.583

		I am interested in exploring the elements available at the Skinverse booth on Roblox. (EN2)	0.838			
	Enjoyment (ENJ)	My experience visiting the Skinverse booth was enjoyable. (ENJ1)	0.711			
		I enjoyed the activities I did while at the Skinverse booth on Roblox. (ENJ2)	0.772			
		I felt comfortable interacting with the Skinverse booth on Roblox. (EC1)	0.706			
	Emotional Connection (EC)	Being at the Skinverse booth made me feel closer to the campaign being presented. (EC2)	0.714			
		I felt quite exposed to the Skinverse campaign content while using Roblox. (EX1)	0.822			
	Exposure (EX)	I saw the Wardah Skinverse booth while using Roblox. (EX2)	0.864			
		I noticed the visual details displayed at the Skinverse booth. (AT1)	0.772			
Consumer Perception (Y)	Attention (AT)	The Skinverse campaign successfully captured my attention while I was on Roblox. (AT2)	0.838	0.905	0.926	0.677
		I understand the main message that Skinverse wants to convey through its campaign. (INT1)	0.823			
	Interpretation (INT)	I can interpret the meaning of the Skinverse campaign after experiencing its virtual reality. (INT2)	0.816			

Source: Processed author (2025)

Based on the outer model testing results presented in **Table 2**, the reliability and convergent validity testing results show that all constructs in this study have adequate measurement quality. The Cronbach's Alpha and Composite Reliability values for the Metaverse Marketing, Roblox Experience, and Consumer Perception constructs exceed the recommended thresholds, indicating good internal consistency among indicators within each construct. In addition, the Average Variance Extracted (AVE) values for the three constructs also exceed the minimum limit of 0.50, indicating that each construct can explain a greater proportion of indicator variance than measurement error variance. Thus, the research instrument is declared valid and reliable, and the measurement model (outer model) is suitable for testing structural relationships in the next stage of analysis.

3.3 Discriminant Validity Test

Discriminant validity in this study was assessed using the Fornell–Larcker criterion. **Table 3** presents the results of the Fornell–Larcker test, which shows that the square root of the Average Variance Extracted (AVE) for each construct exceeds the inter-construct correlations, indicating adequate discriminant validity.

Table 3. Fornell-Larcker criterion

	Consumer Perception	Metaverse Marketing	Roblox Experience
Consumer Perception (Y)	0,823		

Metaverse Marketing (X)	0,794	0,797	
Roblox Experience (M)	0,710	0,767	0,764

Source: Processed author (2025)

The Fornell–Larcker test results indicate that the Average Variance Extracted (AVE) root values for each construct are higher than the correlations between other constructs, thus generally fulfilling the criteria for discriminant validity. Nevertheless, the correlation between Metaverse Marketing and Roblox Experience is relatively high, with a slight difference from the AVE root, indicating a strong empirical relationship between the two constructs. This condition can be explained by the research context, in which Roblox Experience is a direct response to the design and quality of Metaverse Marketing presented in the Wardah Skinverse campaign. Despite their close relationship, the two constructs can still be distinguished conceptually, with Metaverse Marketing representing the stimulus elements and attributes of the campaign and Roblox Experience representing the psychological response of users, so that the results of the discriminant validity test are still acceptable and do not indicate any problematic construct overlap in the research model.

3.3 R-Square Test

Table 4 presents the results of the R-square test used to assess the explanatory power of the research model.

Table 4. R-Square Test

	R Square	R Square Adjusted
Consumer Perception (Y)	0.655	0.650
Roblox Experience (M)	0.589	0.586

Source: Processed author (2025)

The coefficient of determination (R-squared) is used to assess the proportion of the variation in the endogenous variables in the research model that is explained by the exogenous variables. The analysis results in Table 4 indicate an R^2 of 0.655 for consumer perception, indicating that 65.5% of the variation in consumer perception is explained by Metaverse Marketing and Roblox Experience, with the remainder attributable to factors outside the model. In consumer behavior research, this value is considered strong, given that consumer perceptions are generally shaped by external determinants such as prior brand experiences, social influences, and individual preferences (Dwivedi et al., 2023; Kaur et al., 2024; Li et al., 2025). Meanwhile, the R^2 value for Roblox Experience is 0.589, indicating that Metaverse Marketing accounts for 58.9% of the variation in user experience on Roblox. This suggests that the quality of the user experience is strongly influenced by the design and implementation of metaverse campaigns, particularly with respect to interactivity, immersiveness, and uniqueness (Oh et al., 2024; Wang et al., 2023). The magnitude of these R^2 values suggests that the proposed research model provides substantial explanatory power for consumer responses in a metaverse-based marketing context. These results confirm that user experience in virtual environments is not formed randomly but can be strategically designed through an experience-based marketing approach.

3.4 Hypothesis Test

The results presented in **Table 5** indicate that hypothesis testing was conducted by examining the statistical significance, direction, and magnitude of the structural paths.

Table 5. Path coefficient & specific indirect effect

Path Coefficient Result					
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Metaverse Marketing -> Consumer Perception	0.606	0.598	0.086	7.037	0.000
Metaverse Marketing -> Roblox Experience	0.767	0.763	0.061	12.532	0.000
Roblox Experience -> Consumer Perception	0.244	0.247	0.089	2.742	0.006
Specific Indirect Effects					
	Original Sample (O)	T Statistics (O/STDEV)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Metaverse Marketing -> Roblox Experience -> Consumer Perception	0.188	0.189	0.072	2.594	0.010

Source: Processed author (2025)

The findings from the hypothesis testing, including both direct and indirect effects, are further elaborated in the following subsections through a hypothesis-by-hypothesis discussion.

3.4.1 Relationship between Metaverse Marketing and Consumer Perception

The results presented in **Table 5** indicate that Metaverse Marketing has a positive and significant effect on Consumer Perception with a path coefficient value of 0.606. This finding indicates that improving the quality of Skinverse campaigns, as reflected in interactivity, immersiveness, and uniqueness, directly improves consumer perceptions. Interactive metaverse campaigns encourage active user engagement, while immersive environments increase focus and presence (Hazan et al., 2022; Tao et al., 2025). In addition, the campaign's uniqueness differentiates Skinverse from other virtual experiences, making the message easier for consumers to notice and understand (Y. M. Tang et al., 2025).

3.4.2 Relationship between Metaverse Marketing and Roblox Experience

Metaverse marketing has a positive and significant influence on the Roblox experience, with a path coefficient of 0.767, the strongest relationship in the research model. These results indicate that the quality of the metaverse marketing elements presented largely determines the user experience on Roblox. Campaigns that provide interactive activities, immersive virtual environments, and unique concepts can increase user engagement, enjoyment, and emotional connection (Lee & Gu, 2022). This finding, as reported in **Table 5**, confirms that metaverse marketing shapes an integrated user experience rather than merely replicating conventional advertising in a virtual format (Hardy et al., 2022).

3.4.3 Relationship between Roblox Experience and Consumer Perception

Based on the results in **Table 5**, the Roblox Experience has a positive and significant effect on Consumer Perception, with a path coefficient of 0.244. However, the magnitude of this effect is smaller than that of Metaverse Marketing, indicating that user experience functions as a complementary mechanism rather than the primary driver in shaping consumer perception. Engaging and enjoyable experiences extend interaction duration and increase the intensity of exposure to campaign elements, thereby facilitating greater consumer attention and more accurate interpretation of the message (Scholz & Smith, 2016). The relatively lower coefficient suggests that while user experience contributes to perception formation, the overall quality of the metaverse marketing campaign plays a more dominant role in influencing consumer perceptions.

3.4.4 Mediating Role of Roblox Experience

Based on the results presented in **Table 5**, the indirect effect test indicates that Metaverse Marketing significantly influences Consumer Perception through the Roblox Experience, with a path coefficient of 0.188. As the direct effect of Metaverse Marketing on Consumer Perception remains significant, the Roblox Experience is confirmed as a partial mediator. As shown in **Figure 6**, these findings indicate two pathways in shaping consumer perception: a direct pathway driven by the quality of metaverse marketing and an indirect pathway mediated by user experience on the Roblox platform. Conceptually, interactive and unique metaverse campaigns encourage user participation, increasing engagement and enjoyment while extending interaction duration, thereby enhancing exposure to and attention to campaign elements and facilitating more effective message interpretation (Lee & Gu, 2022). Thus, user experience in the metaverse functions not only as a source of entertainment but also as a mechanism that strengthens cognitive processing and shapes consumer perceptions (Oh et al., 2024).

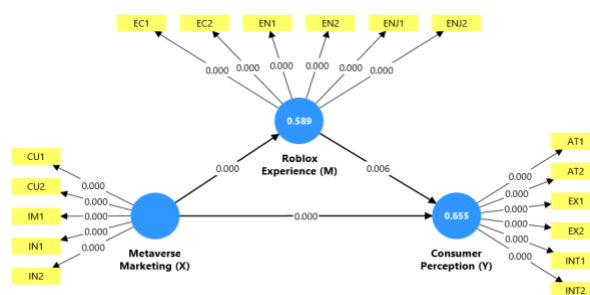


Figure 6. Bootstrapping Results of the Structural Model

3.5 Metaverse Marketing Dimensions and Consumer Psychological Implications

The results show that the dimensions of metaverse marketing, namely interactivity, immersiveness, and campaign uniqueness, influence consumers' psychological processes starting from the exposure stage. Interactivity encourages users to actively explore the campaign, while immersiveness helps maintain focus and reduce distractions (Tao et al., 2025; Yang et al., 2025). Campaign uniqueness adds novelty and curiosity, which increases consumer attention and supports message recall (Payal et al., 2024). At the user-experience level, the Roblox experience is shaped by engagement, enjoyment, and emotional connection (Payal et al., 2024). Together, these dimensions increase the duration and intensity of interaction with campaign elements. Consumer perception in this study is formed through the stages of exposure, attention, and interpretation. The findings indicate that a strong

metaverse marketing design, combined with a positive Roblox experience, helps consumers move from initial awareness to a clearer understanding of the campaign message (Wongkitrungrueng & Suprawan, 2024; Yang et al., 2025).

4. CONCLUSION

This study concludes that the Wardah Skinverse campaign in the Roblox metaverse has a positive and significant effect on consumer perceptions. The strongest effect is observed in the relationship between metaverse marketing and the Roblox experience, indicating that interactivity and immersion play an important role in shaping the user experience. The Roblox experience also has a positive effect on consumer perception and partially mediates the relationship between metaverse marketing and consumer perception. Nevertheless, this study is limited to a single brand campaign and a single metaverse platform, with respondents predominantly from Generation Z, and employs a cross-sectional research design. Therefore, future research should include a wider range of brands, platforms, demographic groups, and variables to provide a more comprehensive understanding of the effects of metaverse marketing.

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