

Physical Humanlikeness as A Moderator of The Relationship Between AI Influencer Marketing and Purchase Intention

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Article history:

Received April 30, 2026

Revised May 11, 2026

Accepted May 13, 2026

Abstract

The purpose of this study is to examine the role of AI influencers in enhancing social media user experience, strengthened by physical human likeness as a moderating variable to reinforce the purchasing experience. This study employs a quantitative method with a sample of 250 respondents who have experience in purchasing through artificial intelligence. The data analysis technique used is SEM-PLS, conducted using SmartPLS 4.0. Artificial intelligence improves customer interaction and engagement, which in turn increases purchase intention. Additionally, Companies should integrate human-like elements into AI services, such as more empathetic communication styles, personalized responses, and the ability to capture customers' emotional context. This approach enhances customer engagement and experience, ultimately increasing purchase intention. This study extends the literature in AI marketing by demonstrating that the success of AI is not solely dependent on technological advancement, but also on its ability to create interaction experiences that resemble human interactions.

Keywords:

Physical Humanlikeness; AI Influencer Marketing; Purchase Intention.

1. INTRODUCTION

It is estimated that the global influencer marketing market will reach \$84.89 billion by 2028, representing a significant increase from \$16.4 billion in 2022 (Geysler, 2024a). The emergence of interactive media has positioned influencer marketing as a key component in product promotion, with social media influencers (SMIs) actively contributing to increased consumer engagement, online word-of-mouth dissemination, and positive brand attitudes in interactive fashion marketing (Chetioui et al., 2020; Shen, 2021). Many fashion brands strategically choose to collaborate with attractive SMIs to connect with their audiences, recognizing the aesthetic appeal in building followers and attracting attention to fashion products (Chetioui et al., 2020; Wang, 2024; Wiedmann & von Mettenheim, 2021).

As interest in leveraging digital avatars for influencer marketing on social media platforms continues to grow, researchers have begun to explore the potential and ways in which digital influencers can replace functions traditionally performed by human influencers (e.g., Audrezet & Koles, 2023; Deng & Jiang, 2023; Wan & Jiang, 2023). AI influencers are computer-generated characters with a strong social media presence and popularity (Moustakas et al., 2020). They typically resemble humans in physical appearance and personality and are capable of thinking and performing tasks like humans through the use of software and algorithms (Kumar et al., 2019; Thomas & Fowler, 2021).

A key advantage for companies using AI influencers is greater control over branding and messaging in line with organizational preferences. AI influencers are also more effective in engaging customers, as they have the capacity to conduct meaningful conversations with individual consumers and learn from each interaction "as a result of AI evaluation of behaviors and responses to various variations" (Campbell et al., 2020, p. 239). Furthermore, companies perceive AI influencers as attractive due to their lower risk of being involved in scandals (Thomas & Fowler, 2021).

Theory of Mind (ToM) refers to an individual's ability to understand and attribute mental states—such as thoughts, feelings, intentions, and awareness—to other entities (Baron-Cohen, 1995). Mind perception is a

mental process that enables individuals to perceive artificial beings or non-human entities as human-like, allowing them to be treated as having social and emotional lives by inferring what they think or feel. ToM explains two key dimensions of understanding others' minds: agency, which refers to the ability to plan, exercise self-control, and act intentionally, and experience, which refers to the ability to feel emotions such as fear, happiness, or desire (Gray et al., 2007). People tend to perceive pets as high in experience but low in agency, whereas robots are perceived as having moderate agency but low experience (Gray & Wegner, 2012).

AI influencers demonstrate human-like qualities through realistic visuals, such as photos and videos, as well as through posts that convey values, opinions, and emotions (Jiang, Qin, et al., 2024; Ju et al., 2024). Based on Theory of Mind, consumers attribute mental states to these agents, enabling them to perceive non-human entities as human-like and understand their behavior (Mariani et al., 2022). Recent studies indicate that individuals distinguish AI from conventional software and assign it a distinct mental status (Kim & Duhachek, 2020; Kim et al., 2022). From a ToM perspective, this gap arises because both agency and experience are required to fully perceive human-like minds (Gray et al., 2007). When one of these dimensions is perceived as lacking, individuals' preference for AI decreases compared to humans (Kim et al., 2022; Stein et al., 2022).

Although AI influencers often engage in nuanced and ongoing interactions that simulate personal narratives and a range of emotions (Block & Lovegrove, 2021; Ju et al., 2024), they are not only visually human-like but also mentally appealing.

2. RESEARCH METHOD

This study employs a quantitative approach aimed at examining the effect of AI influencers on social media user experience and its implications for purchase intention, while considering the role of physical human likeness as a moderating variable. A quantitative approach is chosen as it enables objective measurement of relationships between variables and allows for empirical hypothesis testing through statistical analysis (Creswell, 2014). The population of this study consists of individuals who have experience interacting with and making purchases through artificial intelligence-based platforms, particularly those involving AI influencers on social media. The sampling technique used is non-probability sampling with a purposive sampling approach, in which respondents are selected based on specific criteria, namely having interacted with AI influencers and having experience in conducting transactions or purchases through digital media. The sample size in this study is 250 respondents, which is considered sufficient to meet the minimum requirements for Structural Equation Modeling (SEM) analysis (Hair et al., 2019). Data were collected through the distribution of an online questionnaire using a five-point Likert scale, ranging from strongly disagree to strongly agree. The Likert scale is considered effective in measuring perceptions, attitudes, and individual behavior in social research (Likert, 1932). The research instrument was developed based on indicators adapted from previous studies relevant to artificial intelligence, customer engagement, user experience, and purchase intention. Prior to the main analysis, the instrument was tested for validity and reliability to ensure that each item consistently and accurately measures the intended constructs (Ghozali, 2018).

The data analysis technique employed in this study is Structural Equation Modeling–Partial Least Squares (SEM-PLS), using SmartPLS version 4.0 software. SEM-PLS is chosen due to its advantages in handling relatively moderate sample sizes and its minimal requirements regarding data normality assumptions (Hair et al., 2019). The analysis procedure includes evaluation of the measurement model (outer model), covering convergent validity, discriminant validity, and construct reliability, as well as evaluation of the structural model (inner model) to test the relationships between variables and the significance of hypotheses. Additionally, moderation analysis is conducted to examine the role of physical human likeness in strengthening the relationship between AI influencers and purchase intention.

3. RESULTS AND DISCUSSION

Table 1 Responden Characteristic

Characteristic	Category	Frequency (People)	Percentage (%)
Gender	Male	132	52.8
	Female	118	47.2
Age	< 20 Years	28	11.2
	20–25 Years	92	36.8
	26–30 Years	64	25.6
	31–35 Years	38	15.2
	> 35 Years	28	11.2

Education Level	High School/Vocational School	94	37.6
	Diploma (D3)	36	14.4
	Bachelor’s Degree (S1)	98	39.2
	Master’s Degree (S2)	22	8.8
City of Origin (Sumatra)	Bandar Lampung	68	27.2
	Palembang	52	20.8
	Medan	46	18.4
	Padang	34	13.6
	Pekanbaru	28	11.2
	Other cities in Sumatra	22	8.8
Most Frequently Used social media	Instagram	86	34.4
	TikTok	74	29.6
	WhatsApp	48	19.2
	Facebook	26	10.4
	Twitter/X	16	6.4
Business Sector	Food & Beverage	158	63.2
	Non-Food	92	36.8

Source: SmartPLS 4.0, 2026

Based on the characteristics of the 250 respondents, the gender composition is relatively balanced, with a slight majority of males at 52.8% and females at 47.2%, indicating that the data are fairly representative. In terms of age, respondents are predominantly within the productive age groups of 20–25 years (36.8%) and 26–30 years (25.6%), suggesting a high level of engagement among younger generations in economic activities and the use of digital technologies. Regarding educational background, most respondents hold a bachelor’s degree (S1) or have completed high school/vocational education (SMA/SMK), reflecting a relatively good level of education. Based on city of origin, the largest proportion of respondents comes from Bandar Lampung, followed by Palembang and Medan, indicating that the sample is largely drawn from major cities in Sumatra. Instagram and TikTok are the most frequently used social media platforms, highlighting the importance of visual-based platforms in communication and promotional activities. Finally, the majority of respondents are engaged in the food and beverage sector, indicating that the culinary industry remains a dominant and promising business sector.

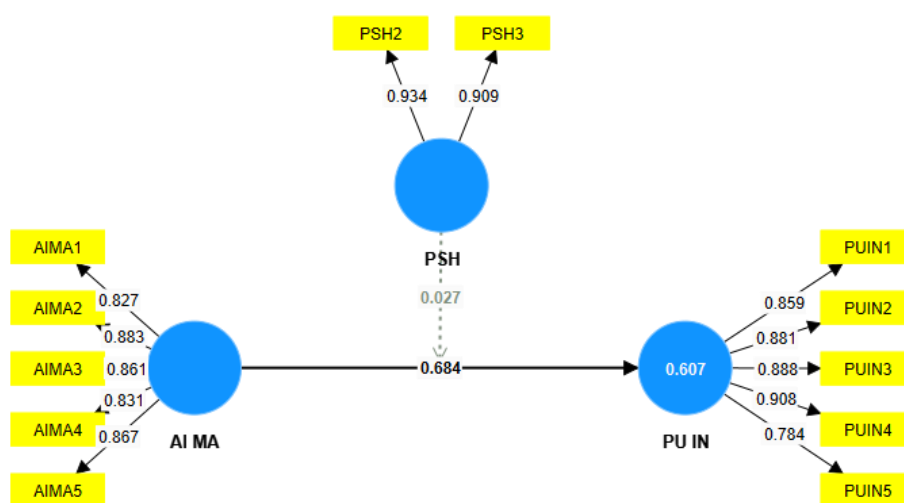


Figure 1. SEM Validity and Reability

Table 2 Validity and Reability

Construct	code	AI MA	Cronbach' s alpha	Composite reliability (rho c)	Average variance extracted (AVE)	keterangan
AI Influencer Marketing	AIMA1	0.82	0.907	0.931	0.729	Valid and reliable
	AIMA2	0.88				
	AIMA3	0.86				
	AIMA4	0.83				
	AIMA5	0.86				
Physical Humanlikeness (Kim & Im, 2025)	PSH2	0.93	0.824	0.919	0.85	Valid and reliable
	PSH3	0.90				
(Zaki et al., 2025)	PUIN1	0.85	0.915	0.937	0.748	Valid and reliable
	PUIN2	0.88				
	PUIN3	0.88				
	PUIN4	0.90				
	PUIN5	0.78				
	PSH x AI MA	1				

Source: SmartPLS 4.0, 2026

Based on the results of the measurement model (outer model) evaluation, all constructs in this study have met the required criteria for validity and reliability in PLS-SEM analysis. The AI Influencer Marketing construct was measured using five indicators (AIMA1–AIMA5), with loading factor values ranging from 0.827 to 0.883, all of which exceed the minimum threshold of 0.70. The Cronbach's Alpha value of 0.907, Composite Reliability of 0.931, and Average Variance Extracted (AVE) of 0.729 indicate that this construct has excellent internal consistency and adequately explains the variance of its indicators. the Physical Humanlikeness construct, adapted from Kim and Im (2025), was measured using indicators PSH2 and PSH3, with very high loading factor values of 0.934 and 0.909, respectively. The Cronbach's Alpha value of 0.824, Composite Reliability of 0.919, and AVE of 0.850 indicate a very strong level of reliability and convergent validity. The Purchase Intentions (PUIN) construct, referring to Zaki et al. (2025), also demonstrates excellent results. The five indicators (PUIN1–PUIN5) have loading factor values ranging from 0.784 to 0.908, with Cronbach's Alpha of 0.915, Composite Reliability of 0.937, and AVE of 0.748, indicating that the construct is both reliable and convergently valid. the interaction construct of Physical Humanlikeness × AI Influencer Marketing, as a moderating variable, is also found to be valid and reliable, making it suitable for testing structural relationships. Overall, these results confirm that all research instruments meet acceptable measurement standards and are appropriate for further analysis.

Table 3 Fit model Analisis

Saturated model	Estimated model
SRMR	0.050
d_ ULS	0.198
d_ G	0.159
Chi-square	247.651
NFI	0.889

Source: SmartPLS 4.0, 2026

Based on the Goodness of Fit (GoF) evaluation results in the PLS-SEM model, it can be concluded that the research model demonstrates an acceptable level of fit. The Standardized Root Mean Square Residual (SRMR) value of 0.050 is below the recommended threshold of 0.08, indicating that the discrepancy between the observed correlation matrix and the model-implied matrix is relatively small, thus reflecting a good model fit. the d_ ULS value of 0.198 and d_ G value of 0.159 suggest low residual discrepancies, implying

that the estimated model structure adequately represents the empirical data. The Chi-square value of 247.651 serves as an indicator of global model fit; however, within the context of PLS-SEM, it is not considered a primary criterion due to the method’s predictive orientation rather than emphasis on absolute model fit. the Normed Fit Index (NFI) value of 0.889 indicates a level of model fit that is close to the ideal threshold of 0.90, and can therefore be categorized as marginally acceptable, approaching a good fit.

Table 4 Fornier lacker criterion

	AI MA	PSH	PU IN
AI MA		0.854	
PSH		0.558	0.922
PU IN		0.769	0.531
			0.865

Source: SmartPLS 4.0, 2026

Based on these results, the AI Influencer Marketing (AI MA) construct has a square root of AVE value of 0.854, which is higher than its correlations with Physical Humanlikeness (0.558) and Purchase Intentions (0.769). This indicates that AI MA explains the variance of its own indicators more effectively than the variance it shares with other constructs. The Physical Humanlikeness (PSH) construct also meets the discriminant validity criterion, with a square root of AVE value of 0.922, exceeding its correlations with both AI MA (0.558) and PU IN (0.531).

Table 5 Heteroit Monotroir Ratio (HTMT)

	AI MA	PSH	PU IN	PSH x AI MA
AI MA				
PSH	0.642			
PU IN	0.839	0.608		
PSH x AI MA	0.057	0.095	0.039	

Source: SmartPLS 4.0, 2026

The correlation between AI Influencer Marketing (AI MA) and Physical Humanlikeness (PSH) is 0.642, while the correlation between AI Influencer Marketing and Purchase Intentions (PU IN) is 0.839. These values indicate relatively strong relationships; however, they remain below the critical threshold of 0.90, suggesting that there is no serious multicollinearity issue among the main constructs in the model.the correlation between Physical Humanlikeness and Purchase Intentions is 0.608, reflecting a moderate relationship that is still acceptable within structural analysis.

Table 6 R-square and – R square adjusted

	R-square	R-square adjusted
PU IN	0.607	0.602

Source: SmartPLS 4.0, 2026

The R-square (R²) value of 0.607 indicates that the Purchase Intentions (PU IN) variable can be explained by 60.7% of the independent variables included in the research model. This suggests that the model has strong explanatory power, as more than half of the variance in PU IN is accounted for by the tested exogenous constructs. adjusted R-square value of 0.602 shows that after accounting for the number of predictor variables in the model, the explanatory capability remains stable and does not experience a significant decline.

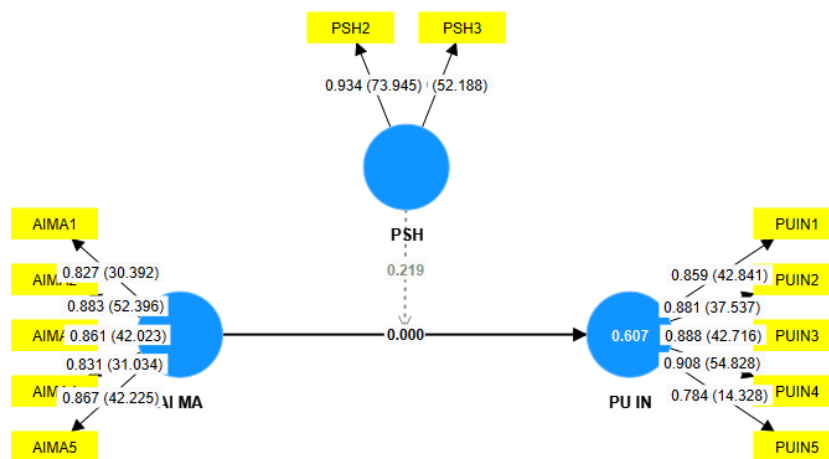


Figure 2. Path and Moderation Analysis

Table 7 Path Analysis and Moderation

Konstruc	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ((O/STDEV))	P values
AI MA -> PU IN	0.684	0.682	0.050	13.804	0.000
PSH -> PU IN	0.152	0.154	0.056	2.722	0.003
PSH x AI MA -> PU IN	0.127	0.128	0.043	2.775	0.009

Source: SmartPLS 4.0, 2026

H1. The effect of AI Influencer Marketing (AI MA) on Purchase Intentions (PU IN) shows an original sample value of 0.684, with a T-statistic of 13.804 and a p-value of 0.000, which clearly exceeds the significance thresholds ($T > 1.96$; $p < 0.05$). These results indicate a strong and significant effect, suggesting that the more effectively AI is implemented in influencer marketing, the higher the perceived usefulness of the influencer from the consumer's perspective.

H2. Physical Humanlikeness (PSH) also demonstrates a positive and significant effect on PU IN, with a coefficient of 0.152, a T-statistic of 2.722, and a p-value of 0.003. This finding implies that the degree to which AI-based influencers resemble real humans can enhance their perceived usefulness, although the magnitude of this effect is relatively smaller compared to AI MA.

H3. The moderation test results reveal that the interaction between PSH and AI Influencer Marketing (PSH \times AI MA) has a coefficient of 0.127, with a T-statistic of 2.775 and a p-value of 0.009, indicating a significant effect. This confirms that Physical Humanlikeness acts as a moderating variable that strengthens the relationship between AI Influencer Marketing and Purchase Intentions. In other words, higher levels of physical humanlikeness in AI influencers amplify the positive impact of AI Influencer Marketing on perceived usefulness.

4. CONCLUSION

This study demonstrates that AI Influencer Marketing plays a crucial and significant role in shaping the Purchase Intentions. The findings reveal that the effectiveness of AI-driven influencer strategies strongly enhances how consumers perceive the usefulness of influencers. Additionally, Physical Humanlikeness contributes positively to this perception, indicating that AI influencers who closely resemble real humans are more likely to be perceived as useful and credible. The moderating effect of Physical Humanlikeness further strengthens the relationship between AI Influencer Marketing and perceived usefulness. This suggests that the impact of AI-based marketing strategies becomes more powerful when the influencer exhibits higher levels of human-like physical characteristics.

ACKNOWLEDGEMENTS

The author would like to express sincere gratitude to all parties who contributed to the completion of this study. Special appreciation is extended to academic supervisors and colleagues for their valuable guidance, constructive feedback, and continuous support throughout the research process.

The author also acknowledges all respondents who willingly participated in this study, providing valuable data and insights that made this research possible. Appreciation is further directed to the institution for providing the resources and academic environment necessary to conduct this research. When writing the acknowledgments section for your article in the International Journal of Management Science and Information Technology (IJMSIT), it is important to recognize and thank those who contributed to the research but did not qualify for authorship. This includes individuals, organizations, and funding sources that provided support, resources, or assistance.

REFERENCES

- Audrezet, A., & Koles, B. (2023). Virtual influencers: A study of consumer perceptions and engagement. *Journal of Marketing Management*, 39(5–6), 567–589.
- Baron-Cohen, S. (1995). *Mindblindness: An essay on autism and theory of mind*. MIT Press.
- Block, E., & Lovegrove, R. (2021). Discordant storytelling, audience engagement, and the emergence of virtual influencers. *Journal of Marketing Management*, 37(1–2), 79–109. <https://doi.org/10.1080/0267257X.2020.1803486>

- Campbell, C., Sands, S., Ferraro, C., Tsao, H. Y. J., & Mavrommatis, A. (2020). From data to action: How marketers can leverage AI. *Business Horizons*, 63(2), 227–243. <https://doi.org/10.1016/j.bushor.2019.12.002>
- Chetioui, Y., Benlafqih, H., & Lebdaoui, H. (2020). How fashion influencers contribute to consumers' purchase intention. *Journal of Fashion Marketing and Management*, 24(3), 361–380. <https://doi.org/10.1108/JFMM-08-2019-0157>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
- Deng, X., & Jiang, P. (2023). Exploring the impact of virtual influencers on consumer behavior. *Journal of Interactive Advertising*, 23(2), 145–160.
- Geyser, W. (2024). *Influencer marketing benchmark report 2024*. Influencer Marketing Hub. <https://influencermarketinghub.com>
- Ghozali, I. (2018). *Aplikasi analisis multivariate dengan program IBM SPSS 25*. Badan Penerbit Universitas Diponegoro.
- Gray, H. M., Gray, K., & Wegner, D. M. (2007). Dimensions of mind perception. *Science*, 315(5812), 619. <https://doi.org/10.1126/science.1134475>
- Gray, K., & Wegner, D. M. (2012). Feeling robots and human zombies: Mind perception and the uncanny valley. *Cognition*, 125(1), 125–130. <https://doi.org/10.1016/j.cognition.2012.06.007>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2019). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). SAGE Publications.
- Jiang, L., Qin, Y., et al. (2024). Human-like AI influencers and consumer engagement. *Journal of Interactive Marketing*.
- Ju, Y., et al. (2024). Emotional expression and authenticity in virtual influencers. *Computers in Human Behavior*, 145, 107789.
- Kim, T., & Duhachek, A. (2020). Artificial intelligence and consumer responses. *Journal of Consumer Research*, 47(4), 563–582.
- Kim, T., et al. (2022). Humanizing AI: The role of mind perception. *Journal of Marketing Research*, 59(3), 456–473.
- Kumar, V., Dixit, A., Javalgi, R. R. G., & Dass, M. (2019). Research framework for the role of artificial intelligence in marketing. *Journal of Business Research*, 98, 135–145. <https://doi.org/10.1016/j.jbusres.2019.01.016>
- Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, 140, 1–55.
- Mariani, M., et al. (2022). Virtual influencers in marketing: A systematic review. *Psychology & Marketing*, 39(10), 1925–1945.
- Moustakas, E., et al. (2020). The rise of virtual influencers. *Journal of Marketing Management*, 36(11–12), 1050–1070.
- Shen, B. (2021). Social media influencers and fashion marketing. *Fashion and Textiles*, 8(1), 1–15.
- Shen, Z. (2021). “A persuasive eWOM model for increasing consumer engagement on social media: evidence from Irish fashion micro-influencers”, *Journal of Research in Interactive Marketing*, Vol. 15 No. 2, pp. 181-199, doi: 10.1108/jrim-10-2019-0161.
- Stein, J. P., et al. (2022). Perceived humanness and AI acceptance. *Computers in Human Behavior*, 128, 107106.

- Thomas, V. L., & Fowler, K. (2021). Close encounters of the AI kind: Understanding consumer responses to AI influencers. *Business Horizons*, 64(3), 369–378. <https://doi.org/10.1016/j.bushor.2021.01.003>
- Wan, Y., & Jiang, P. (2023). Virtual influencers and purchase intention: Evidence from social media. *Electronic Commerce Research*, 23(4), 2101–2120.
- Wang, C.L. (2024), “Editorial– what is an interactive marketing perspective and what are emerging research areas?”, *Journal of Research in Interactive Marketing*, Vol. 18 No. 2, pp. 161-165, doi: 10.1108/jrim-03-2024-371
- Wang, X. (2024). Aesthetic appeal and influencer marketing effectiveness. *Journal of Retailing and Consumer Services*, 75, 103456.
- Wiedmann, K. P., & von Mettenheim, W. (2021). Attractiveness, trustworthiness, and expertise in influencer marketing. *Journal of Business Research*, 134, 576–585.
- Wiedmann, K.-P. and von Mettenheim, W. (2021), “Attractiveness, trustworthiness and expertise social influencers’ winning formula?”, *The Journal of Product and Brand Management*, Vol. 30 No. 5, pp. 707-725, doi: 10.1108/jpbm-06-2019-2442.