

## AI-Driven Personalized Marketing: Rethinking Consumer Engagement in the Digital Era

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### ARTICLE INFO

*Keywords:* AI usefulness, consumer trust, perceived risk, purchase intention

*Received :* 12, March

*Revised :* 13, April

*Accepted:* 31, May

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### ABSTRACT

This research investigates how perceived AI usefulness shapes consumers' intention to make purchases within personalised marketing environments powered by artificial intelligence, with particular attention to the mediating functions of trust and risk perception. Employing a quantitative explanatory framework, primary data were gathered through structured surveys administered to 400 e-commerce consumers actively engaged in digital platforms across Jakarta, spanning the period of June 2024 to June 2025, and subsequently analysed through SEM-PLS methodology. The results reveal that AI usefulness meaningfully strengthens consumer trust and alleviates perceived risk, yet exerts no statistically significant direct effect on purchase intention. Rather, the effect is channelled entirely through mediation, wherein consumer trust operates as the principal mediating mechanism and perceived risk functions as a supplementary pathway. The implications underscore that cultivating consumer trust and mitigating perceived risk are indispensable to maximising the effectiveness of AI-powered marketing initiatives.

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## **INTRODUCTION**

Rapid advancements in Artificial Intelligence (AI) have fundamentally reshaped the landscape of digital marketing, most notably through the widespread adoption of personalisation strategies across e-commerce ecosystems. By leveraging AI capabilities, businesses are now equipped to provide tailored product suggestions, precision-targeted promotions, and responsive services that align closely with each consumer's individual preferences and behavioural patterns. Beyond optimising operational marketing efficiency, this personalised approach deepens consumer involvement throughout the purchasing journey. Within contemporary business management, AI-driven personalisation has therefore emerged as a strategic imperative for organisations seeking to sustain their competitive positioning in an ever-evolving and highly dynamic marketplace.

A report by McKinsey & Company (Singla et al., 2025) indicates that the level of AI adoption among global organisations has continued to increase from 2017 to 2025. Nevertheless, the depth of implementation still varies. Some companies have successfully integrated AI into their strategies, while others remain at the exploration or pilot stage. This variation suggests that the success of AI utilisation is determined not only by technological adoption but also by system readiness, resources, and governance that support its optimal use.

A comparable trajectory is observable within Indonesia's broader digital economy. According to the e-Conomy SEA report (Google et al., 2024), Indonesia has experienced substantial expansion in its digital economic activities, with the e-commerce segment recording particularly notable growth. This upward trend mirrors a fundamental shift in consumer behaviour, characterised by a deepening dependence on digital channels and platforms as the primary means of fulfilling everyday consumption needs.

Support for digital transformation in Indonesia is also reflected in the relatively high readiness of e-commerce businesses (Badan Pusat Statistik, 2023). Furthermore, Jakarta is categorised as having a high level of digital maturity. This condition indicates the availability of robust infrastructure, advanced digital skills, and a supportive ecosystem that facilitates the development of advanced technologies, including the application of AI in marketing. The maturity of Jakarta's e-commerce ecosystem is further demonstrated by the characteristics of digital businesses that have been operating for a relatively long period, as presented in Table 1.

Table 1. Percentage of E-Commerce Businesses by Year of Establishment (≤2020–2022)

Provinsi	Tahun Mulai Beroperasi (awal & Persebaran)			Rata-rata
	≤2020	2021-2022	2023	
<b>Nasional</b>	<b>71,00</b>	<b>28,99</b>	<b>0,01</b>	<b>100,00</b>
Aceh	75,36	23,51	1,33	100,00
Sumatera Utara	60,34	38,83	10,90	100,00
Sulawesi Barat	66,29	33,45	13,16	100,00
Riau	69,62	28,84	7,54	100,00
Jambi	70,39	26,34	7,07	100,00
Sumatera Selatan	67,69	22,43	6,91	100,00
Bengkulu	66,71	25,30	10,98	100,00
Lampung	67,80	22,66	5,94	100,00
Kep. Bangka Belitung	70,01	26,44	5,55	100,00
Kepulauan Riau	67,91	22,20	9,79	100,00
DKI Jakarta	72,81	19,07	9,32	100,00
Jawa Barat	71,54	13,48	5,40	100,00
Jawa Tengah	70,83	18,79	6,58	100,00
DI. Yogyakarta	71,79	18,78	9,57	100,00
Jawa Timur	73,77	18,88	7,54	100,00
Banten	72,74	25,94	6,52	100,00
Bali	70,99	13,58	8,43	100,00
Nusa Tenggara Barat	66,07	22,33	5,99	100,00
Nusa Tenggara Timur	54,66	30,57	14,77	100,00
Kalimantan Barat	61,29	27,27	11,48	100,00
Kalimantan Tengah	66,67	22,88	10,48	100,00
Kalimantan Selatan	66,74	25,05	8,21	100,00
Kalimantan Timur	66,26	22,78	8,88	100,00
Papua Barat	66,99	24,23	8,91	100,00
Sulawesi Utara	59,93	27,79	12,82	100,00
Sulawesi Tengah	58,66	23,51	11,84	100,00
Sulawesi Selatan	61,26	27,06	11,90	100,00
Sulawesi Tenggara	56,03	27,18	14,59	100,00
Gorontalo	59,48	28,87	13,65	100,00
Maluku Barat	58,43	23,49	20,74	100,00
Maluku	48,95	32,18	19,33	100,00
Maluku Utara	54,77	26,57	18,66	100,00
Papua Barat	36,72	41,47	17,98	100,00
Papua	63,57	25,79	10,68	100,00
Irian Jaya	41,88	36,33	8,88	100,00

Source: Statistics Indonesia (2023)

Based on the data presented in Table 1, an empirical gap can be identified between the high level of e-commerce ecosystem maturity and consumer behavioural responses towards AI implementation. The table shows that the majority of e-commerce businesses across provinces, including Jakarta (72.81%), have been operating since before 2020, indicating a well-established and mature digital environment. At the national level, 71.00% of businesses were already active prior to 2020, further reinforcing the widespread maturity of the sector.

In practice, the application of AI in marketing is manifested through various tools, such as recommendation systems, predictive analytics, chatbots, and personalised advertising. Many companies in Indonesia have adopted these technologies to enhance consumer engagement and the effectiveness of marketing communication. However, the use of AI also faces several challenges, particularly those related to information accuracy, data security, and ethical concerns. Shopee (2024), for instance, states that generative AI services do not always guarantee accuracy or increased sales. In addition, a YouGov survey (Bisnis.com, 2025) indicates that some members of the public still question the reliability of information generated by AI.

Previous studies emphasise that perceived usefulness of technology (AI usefulness), consumer trust, and perceived risk are key factors influencing consumer purchase intention. Grewal et al. (2021) show that AI-based personalisation can enhance purchase intention when consumers perceive relevant benefits. Lemon and Verhoef (2016) highlight that positive experiences during brand interaction form the foundation of trust. Lăzăroiu et al. (2020) and Pappas (2016) find that perceived risk, particularly related to privacy and data security, can hinder purchasing decisions. Furthermore, Kaplan and Haenlein (2019) and Wang et al. (2023) identify consumer trust as a key mediator between perceived usefulness and purchase intention.

Amanah et al. (2020) demonstrate that concerns about digital transaction risks significantly influence online purchasing decisions. Yin and Qiu (2021) and

Mariani et al. (2022) confirm that perceived usefulness is a primary determinant of AI technology adoption in e-commerce. Meanwhile, Hassan et al. (2025) and Wu and Huang (2023) highlight the importance of transparency, system credibility, and data protection in building consumer trust in AI-based technologies.

Based on this phenomenon, an empirical gap exists in which the high level of maturity of the e-commerce ecosystem in Jakarta is not fully accompanied by an optimal level of consumer trust in the implementation of AI in personalised marketing. Although most businesses have been operating for a relatively long period and are supported by adequate digital infrastructure, consumers still express concerns regarding system reliability, data security, and ethical issues in the use of AI. This condition reflects a gap between technological readiness and consumers' psychological acceptance, which may hinder the optimal utilisation of AI in digital marketing.

In addition, a theoretical gap also emerges from inconsistencies in previous research findings. Although numerous studies have examined the relationships among AI usefulness, consumer trust, perceived risk, and purchase intention, most remain partial and fragmented. Some studies emphasise the direct effect of technological usefulness on purchase intention, while others suggest that the effect is indirect and dependent on the role of consumer trust as a mediator. Similarly, findings regarding the role of perceived risk remain inconsistent, both as a direct inhibiting factor and as a mediating variable. These inconsistencies indicate the need for a more comprehensive model to explain the relationships among variables simultaneously.

Based on these conditions, this study aims to analyse the effect of AI usefulness on purchase intention by considering the mediating roles of consumer trust and perceived risk in the context of personalised marketing in Jakarta. This research is expected to address both empirical and theoretical gaps by testing an integrative model that simultaneously examines the direct and indirect effects of AI usefulness, with consumer trust and perceived risk as mediators, while also providing practical contributions for e-commerce practitioners in designing adaptive, secure, and trust-oriented AI-based marketing strategies.

## **THEORETICAL REVIEW**

### ***Technology Acceptance Model (TAM)***

Originally introduced by Davis (1989), the Technology Acceptance Model (TAM) was constructed to provide a theoretical explanation for the factors governing how individuals come to accept and adopt technological systems. At its core, the model is anchored by two foundational constructs: perceived usefulness and perceived ease of use. The former captures the degree to which users believe that engaging with a given system will yield measurable improvements in their task performance, while the latter reflects users' assessment of the effort required to interact with the system effectively. Together, these two cognitive evaluations inform users' overall attitudes toward a technology and, consequently, determine their intention to adopt and continue using it.

For the purposes of this study, the construct of perceived usefulness is conceptualised and measured as AI Usefulness, defined as the degree to which consumers believe that artificial intelligence meaningfully enhances the quality, efficiency, and convenience of their online shopping experiences. In the context of AI-driven personalised marketing, a higher level of perceived usefulness is anticipated to generate favourable consumer attitudes, reinforce trust in digital platforms, and alleviate the uncertainty commonly associated with conducting transactions in online environments. As consumers come to view AI systems as both functionally advantageous and operationally reliable, their willingness to accept and depend upon such technologies is expected to grow considerably.

A growing body of empirical literature underscores the pivotal role that perceived usefulness plays in determining consumer behavioural outcomes. Linh and Huyen (2025) establish that perceived usefulness exerts a positive influence on consumer trust within digital systems. Similarly, Ruiz-Herrera et al. (2023) report that perceived usefulness significantly shapes behavioural intention by way of cognitive appraisal processes, and Sipos (2025) provides further evidence that AI-enabled personalisation positively contributes to both trust formation and purchase intention. Collectively, these findings affirm that the perceived value derived from AI technologies constitutes a foundational driver of consumer attitudes and behaviours in digital commercial contexts.

Based on the theoretical foundation and empirical evidence, the following hypotheses are proposed:

H1: AI Usefulness has a positive and significant effect on Consumer Trust.

H2: AI Usefulness has a negative and significant effect on Perceived Risk.

H3: AI Usefulness has a positive and significant effect on Purchase Intention.

### ***Commitment-Trust Theory of Relationship Marketing***

The Commitment-Trust Theory of Relationship Marketing, as originally articulated by Morgan and Hunt (1994), posits that trust occupies a central and indispensable role in the formation and sustenance of enduring relationships between organisations and their consumers. Within this theoretical framework, trust is understood as encompassing consumers' belief in the honesty, dependability, and overall credibility of a firm or technological system, while commitment denotes the consumer's disposition to maintain and invest in an ongoing relational engagement. Importantly, trust is conceptualised as a mediating construct that bridges upstream antecedents including perceptions of benefit and risk with downstream relational outcomes such as the intention to make purchases.

Applied to the domain of AI-powered marketing, consumer trust directed toward AI systems emerges as a decisive factor shaping how consumers respond behaviourally to personalised digital interactions. By attenuating feelings of uncertainty and reducing consumers' sense of vulnerability, trust enables individuals to engage more confidently with AI-generated recommendations and customised content. When AI systems are perceived as operating transparently, consistently, and in an ethically responsible manner, consumers

develop a stronger sense of confidence in the platform, which in turn translates into a heightened propensity to pursue purchasing decisions.

Empirical studies support the importance of trust in digital environments. Tian et al. (2023) show that perceived trust strengthens the relationship between technology perceptions and behavioural intention. Pirzado et al. (2025) find that responsive AI interactions significantly enhance consumer trust and purchase intention. Similarly, Sipos (2025) highlights that trust reinforces the effectiveness of AI-driven personalisation in influencing consumer behaviour.

Accordingly, the following hypotheses are formulated:  
H4: Consumer Trust has a positive and significant effect on Purchase Intention.  
H5: AI Usefulness has a positive and significant effect on Purchase Intention through Consumer Trust.

### ***Theory of Planned Behavior (TPB)***

Formulated by Ajzen (1991), the Theory of Planned Behavior (TPB) offers a systematic framework for understanding the antecedents of human behaviour, asserting that behavioural intention represents the most proximate and reliable predictor of whether a behaviour will ultimately be enacted. According to the theory, intention is jointly shaped by three distinct determinants: the individual's evaluative attitude toward performing the behaviour, the perceived social pressures encoded in subjective norms, and perceived behavioural control which captures one's self-assessed capacity to execute the behaviour and navigate any associated obstacles or constraints.

Within the analytical framework of this study, the TPB construct of perceived behavioural control is operationalised through the variable of Perceived Risk, which encapsulates consumers' subjective evaluations of the potential negative consequences or uncertainties arising from their engagement with AI-powered e-commerce systems. These concerns predominantly revolve around issues of personal data privacy, the security of digital transactions, and the overall dependability of AI-driven platforms. Elevated levels of perceived risk are expected to erode consumer confidence and diminish the likelihood of engaging in online purchasing behaviour. Conversely, when consumers perceive lower levels of risk, their sense of agency and control is reinforced, thereby facilitating a more positive orientation toward completing transactions.

Substantial empirical support exists for the inhibitory role of perceived risk in shaping consumers' behavioural intentions in online contexts. Lăzăroiu et al. (2020) and Pappas (2016) both demonstrate that heightened risk perceptions constitute a significant barrier to online purchasing decisions. Beyond this, converging evidence from the literature suggests that well-designed and effectively implemented AI systems possess the capacity to reduce perceived risk by enhancing the accuracy of system outputs, improving operational transparency, and delivering a more seamless and reassuring user experience.

Based on TPB and prior empirical findings, the following hypotheses are proposed:

H6: Perceived Risk has a negative and significant effect on Purchase Intention.  
H7: AI Usefulness has a positive and significant effect on Purchase Intention through Perceived Risk.

Following the formulation of the hypotheses, this study presents the conceptual framework to illustrate the relationships among the variables. The framework depicts AI Usefulness as the independent variable, Purchase Intention as the dependent variable, and Consumer Trust and Perceived Risk as mediating variables. It explains both direct and indirect relationships, highlighting the mediating roles of trust and risk in linking AI usefulness to consumer behavioural outcomes. The conceptual framework provides a systematic representation of the research model and serves as the basis for empirical testing using the PLS-SEM approach.

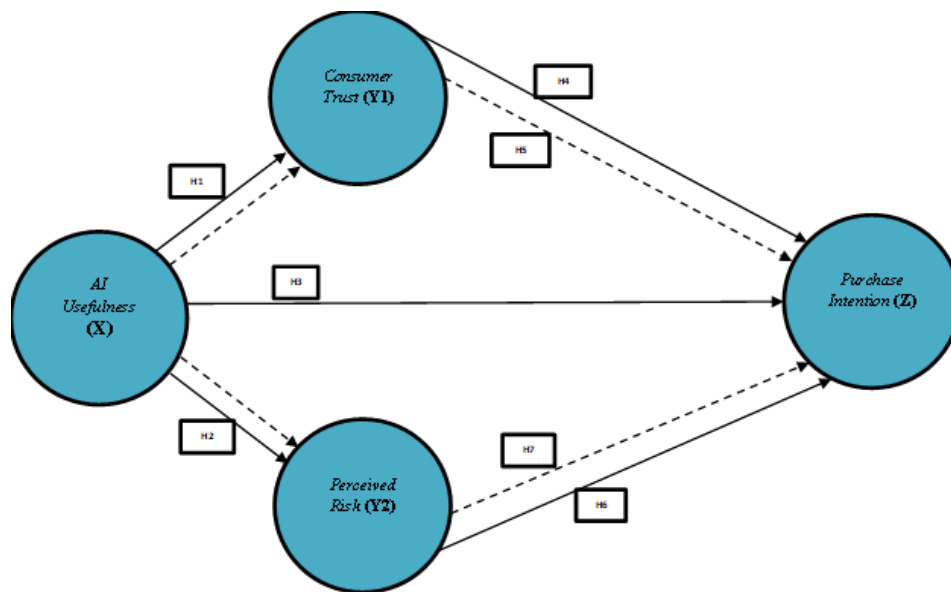


Figure 1. Conceptual Framework

## METHODOLOGY

The present study adopts a quantitative research paradigm guided by an explanatory design, with the primary objective of empirically investigating the causal dynamics among AI usefulness, consumer trust, perceived risk, and purchase intention. Consistent with Creswell (2009), a quantitative orientation was selected to enable rigorous and objective theory-testing through the application of statistical procedures. Empirical data were obtained via an online survey instrument comprising a structured questionnaire, which was systematically disseminated to consumers actively engaged in e-commerce activities across the City of Jakarta throughout the data collection window spanning June 2024 to June 2025.

Respondent selection was carried out through purposive sampling, a non-probability technique in which participants are deliberately chosen on the basis of predefined eligibility criteria directly relevant to the research objectives (Sekaran & Bougie, 2016). To establish the minimum acceptable sample size, the Slovin formula was applied with a margin of error set at 5%, yielding a final target sample of 400 respondents deemed sufficient to ensure statistical adequacy.

The analytical phase of this study was carried out using Partial Least Squares Structural Equation Modelling (PLS-SEM), executed with the support of dedicated statistical software. As noted by Hair et al. (2021), PLS-SEM is particularly well-suited to research models that incorporate complex latent constructs alongside mediating variable structures. The analysis proceeded in two sequential stages: the first involved the assessment of the measurement model to verify construct validity and reliability, and the second entailed the evaluation of the structural model through hypothesis testing, utilising path coefficients, t-statistics, and corresponding p-values as inferential criteria.

The results indicate that all constructs meet the required validity and reliability criteria, confirming that the measurement instrument is appropriate for use. In this model, AI usefulness is specified as the independent variable, purchase intention as the dependent variable, and consumer trust and perceived risk as mediating variables analysed simultaneously to assess both direct and indirect effects among variables.

## RESULTS

### *Overview of Research Subjects*

A total of 400 participants were enrolled in this study, each satisfying two core eligibility requirements: active engagement with at least one e-commerce platform and documented exposure to AI-powered personalisation features during shopping activities. Geographic representation spanned all districts within Jakarta, yielding a demographically varied sample that reflects the heterogeneity of the city's urban consumer population. Participants demonstrated meaningful familiarity with intelligent commercial tools encompassing algorithmic product discovery, interest-based promotional targeting, and automated service assistants thereby positioning them to render substantive assessments across all measured constructs. Primary data were gathered through a web-based structured questionnaire administered over a twelve-month window from June 2024 through June 2025, a digital collection mode that ensured accessibility across the sample population irrespective of location or time.

### *Outer Model Test Results*

Assessment of the measurement model was performed within a PLS-SEM framework, with psychometric evaluation procedures addressing three dimensions of construct quality: convergent validity, discriminant validity, and internal consistency. Convergent validity was examined through indicator outer loadings alongside Average Variance Extracted (AVE) scores, while discriminant validity was verified by inspecting cross-loading patterns against the Fornell-Larcker criterion. Internal consistency was quantified using both Cronbach's alpha coefficients and composite reliability indices.

The results indicate that all indicators achieved outer loading values above the recommended threshold of 0.70, confirming satisfactory convergent validity. Additionally, all constructs reported AVE values exceeding 0.50, indicating that each construct explains more than half of the variance of its indicators. Discriminant validity testing shows that each indicator loads highest on its

respective construct, and the Fornell–Larcker criterion confirms that the square root of AVE for each construct exceeds inter-construct correlations.

Furthermore, reliability testing demonstrates that all constructs meet the required thresholds, with Cronbach’s alpha and Composite Reliability values above 0.70. Overall, these results confirm that the measurement model is valid and reliable, and therefore suitable for further structural analysis.

**Inner Model Test Results**

The inner model evaluation was conducted to examine the structural relationships among variables and to test the proposed hypotheses using bootstrapping with a significance level of 0.05.

Table 2. Path Coefficient Results (Direct Effects)

Hypothesis	Relationship	Coefficient (β)	t-statistic	p-value	Conclusion
H1	AU → CT	0.767	27.945	0.000	Accepted
H2	AU → PR	-0.361	7.703	0.000	Accepted
H3	AU → PI	0.139	1.721	0.085	Rejected
H4	CT → PI	0.444	6.012	0.000	Accepted
H5	PR → PI	-0.219	4.611	0.000	Accepted

Source: Data processed by the researcher, 2026

The results indicate that Artificial Intelligence Usefulness has a positive and significant effect on Consumer Trust and a negative and significant effect on Perceived Risk. However, it does not have a significant direct effect on Purchase Intention. Consumer Trust has a positive and significant influence on Purchase Intention, while Perceived Risk has a negative and significant effect.

Table 3. Path Coefficient Results (Indirect Effects)

Hypothesis	Relationship	Coefficient (β)	Conclusion
H6	AU → CT → PI	0.341	Accepted
H7	AU → PR → PI	0.079	Accepted

Source: Data processed by the researcher, 2026

The indirect effect results show that Consumer Trust acts as the dominant mediator in the relationship between AI Usefulness and Purchase Intention, while Perceived Risk serves as a complementary mediator. Given that the direct effect of AI Usefulness on Purchase Intention is not significant, these findings confirm the presence of full mediation.

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

The R<sup>2</sup> values indicate that AI Usefulness explains 58.9% of the variance in Consumer Trust and 13.0% of the variance in Perceived Risk. Collectively, the model explains 44.0% of the variance in Purchase Intention, indicating a moderate level of explanatory power.

Overall, the structural model demonstrates that AI Usefulness influences Purchase Intention indirectly through Consumer Trust and Perceived Risk, highlighting the importance of psychological factors in determining consumer responses to AI-based personalised marketing.

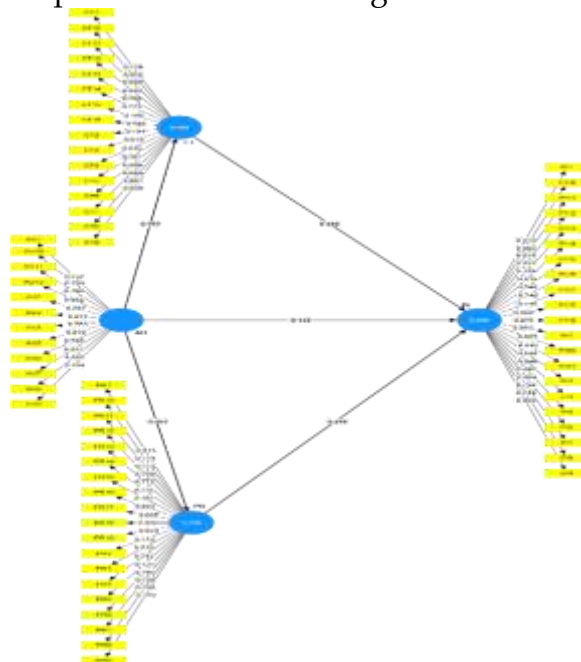


Figure 2. Structural Model Results

The structural model illustrates the relationships among Artificial Intelligence Usefulness, Consumer Trust, Perceived Risk, and Purchase Intention. The diagram shows that AI Usefulness significantly influences Consumer Trust and Perceived Risk, which in turn affect Purchase Intention. The absence of a significant direct path from AI Usefulness to Purchase Intention confirms the mediating roles of Consumer Trust and Perceived Risk within the model.

## DISCUSSION

The findings of this study confirm that AI Usefulness exerts a meaningful and statistically significant influence on both Consumer Trust formation and Perceived Risk reduction. When AI-powered systems successfully deliver contextually relevant recommendations, high-quality information, and genuinely personalised service encounters, consumers are inclined to evaluate the underlying technology as dependable and value-generating. This favourable perception of usefulness cultivates a series of positive consumer experiences that cumulatively reinforce trust in the e-commerce platforms through which such AI interactions occur. At the same time, the ability of AI to provide consistent and responsive interactions helps to reduce uncertainty related to transactions, data security, and information accuracy, thereby lowering perceived risk. These findings indicate that AI usefulness contributes to creating a more reliable and secure digital environment that supports consumer engagement.

Notwithstanding its significant indirect effects, AI Usefulness was found to have no statistically significant direct impact on Purchase Intention. This outcome

implies that functional technological competence, in isolation, is inadequate as a catalyst for motivating consumers to commit to purchasing decisions. The absence of a direct effect reveals that consumers do not straightforwardly convert their appraisal of AI usefulness into concrete purchasing behaviour; rather, they necessitate additional layers of psychological confidence and reassurance before proceeding to act on their intentions. Thus, AI usefulness functions as a foundational factor that shapes consumer perceptions, while its impact on purchase intention operates indirectly through mediating variables, particularly Consumer Trust and Perceived Risk. This highlights that the effectiveness of AI depends not only on functionality but also on its ability to influence consumer perceptions and confidence.

Among the variables examined, Consumer Trust stands out as a particularly influential determinant of Purchase Intention. Consumers who attribute qualities of trustworthiness, credibility, and reliability to AI systems demonstrate a markedly greater readiness to proceed with transactional engagement. The role of trust in this process is multifaceted: it functions to diminish perceived uncertainty, consolidate consumer confidence in the digital platform, and ultimately facilitate the transition from cognitive evaluation to concrete behavioural commitment. This finding reinforces the importance of trust as a central mechanism in digital environments, where interactions are mediated by technology rather than direct human contact.

By contrast, Perceived Risk operates as a constraining force on Purchase Intention. Consumers harbouring elevated concerns regarding data privacy, the security of personal information, or the overall reliability of AI-driven systems are considerably more prone to hesitation when contemplating purchase decisions. Although AI Usefulness contributes to attenuating these risk perceptions, the magnitude of this effect is comparatively modest when placed alongside the more robust and direct influence exerted by Consumer Trust. This indicates that while risk reduction is important, it is not sufficient on its own to significantly drive purchase intention without the presence of strong trust.

The dual mediation structure identified in this study reveals that the pathway from AI Usefulness to Purchase Intention is psychological rather than direct in nature. Consumer Trust assumes the role of primary mediating mechanism, channelling the majority of AI usefulness effects into purchase motivation through accumulated confidence in the platform. Perceived Risk, while secondary in magnitude, nonetheless constitutes a meaningful intervening variable its reduction by AI usefulness creates conditions more conducive to transactional engagement. Taken together, these mediating dynamics underscore a key insight: what ultimately governs consumer purchasing behaviour in AI-driven environments is not the sophistication of the technology itself, but the degree to which that technology successfully shapes how consumers feel about transacting within it.

Synthesising the results across all tested pathways, this study establishes that AI Usefulness occupies an upstream position in the causal chain leading to Purchase Intention it shapes the psychological landscape through which consumers evaluate and respond to AI-powered marketing, but does not

independently produce purchasing motivation. The full mediation pattern observed here assigns primacy to Consumer Trust and Perceived Risk as the proximate drivers of behavioural intention, with AI Usefulness functioning as their common antecedent. Consequently, organisations seeking to leverage AI marketing effectively must recognise that system performance and consumer psychology operate as complementary imperatives: technical excellence creates the foundation, while trust cultivation and risk management determine whether that foundation translates into measurable commercial outcomes.

## CONCLUSIONS AND RECOMMENDATIONS

The present study arrives at the conclusion that AI Usefulness constitutes a foundational determinant of Consumer Trust enhancement and Perceived Risk attenuation within the specific context of AI-enabled personalised marketing deployed across e-commerce platforms operating in Jakarta. Nevertheless, the data reveal that AI Usefulness does not independently produce a direct effect on Purchase Intention; rather, its impact is transmitted through a series of consumer-centred psychological pathways that mediate the relationship between technological perceptions and behavioural outcomes.

The empirical findings establish Consumer Trust as the dominant mediating variable within the proposed model, demonstrating a robust and positive contribution to Purchase Intention. Perceived Risk, on the other hand, assumes the role of a complementary mediator operating in the negative direction, such that escalating risk perceptions correspond with a progressive decline in consumers' purchasing intentions. Furthermore, AI Usefulness is shown to exert a dual effect: it simultaneously and significantly elevates Consumer Trust while suppressing Perceived Risk, thereby generating favourable conditions for purchase intention to materialise. These results suggest that the effectiveness of AI implementation in marketing is not solely determined by technological sophistication, but rather by the system's ability to build trust and create a sense of security for consumers.

From a theoretical perspective, this study reinforces the integration of the Technology Acceptance Model (TAM), Commitment-Trust Theory, and the Theory of Planned Behaviour (TPB) in explaining consumer behaviour in AI-driven environments. The findings demonstrate that the relationship between technological perceptions and behavioural intention is indirect, operating through trust and risk perception as key mediating factors in consumer decision-making.

### *Recommendations*

Based on these findings, e-commerce firms are encouraged to design and implement AI systems that not only enhance technical performance but also strengthen consumer trust. This can be achieved through greater transparency in algorithmic processes, clear communication regarding data usage, and robust data protection mechanisms. Ensuring that AI systems are perceived as reliable, ethical, and secure is essential in fostering consumer confidence.

Furthermore, reducing perceived risk should be prioritised as part of AI-driven marketing strategies. Companies should provide explicit assurances regarding privacy protection, improve system security, and maintain consistent

service quality to minimise consumer concerns. By addressing both trust and risk simultaneously, firms can more effectively enhance Purchase Intention.

Academically, this study opens several avenues for theoretical refinement. Future investigations may strengthen explanatory power by introducing constructs not captured in the present model among them, consumers' sensitivity to personalisation quality, their awareness of algorithmic decision processes, or the cumulative effect of prior platform experience on trust formation. Equally important is the matter of boundary conditions: the dynamics observed in Jakarta's urban e-commerce context may differ substantially across regions with varying levels of digital literacy, regulatory oversight, or cultural orientations toward privacy. Researchers are therefore encouraged to pursue multi-site designs or cross-national comparisons that test the generalisability of these findings. Additionally, panel-based or longitudinal methodologies would allow scholars to track how trust and risk perceptions evolve as consumers accumulate sustained experience with AI-driven platforms a dimension that cross-sectional designs are inherently unable to capture.

#### **FURTHER STUDY**

Future studies should consider broadening the analytical framework by integrating additional constructs that may influence Purchase Intention, such as AI transparency, perceived personalisation quality, or user experience. Incorporating these variables may provide deeper insights into how consumers evaluate and respond to AI-driven marketing strategies. In addition, expanding the scope of research beyond Jakarta to include different regions or cross-country comparisons would improve the external validity of the findings. Employing longitudinal or mixed-method approaches is also recommended to better capture behavioural changes and provide a more nuanced understanding of consumer adaptation to AI technologies over time.

#### **ACKNOWLEDGMENT**

The completion of this research was made possible through the collective support of numerous individuals whose contributions deserve formal recognition. Foremost among these are the survey participants, whose willingness to invest time and share their perspectives provided the empirical foundation upon which all findings rest. The authors also wish to acknowledge the constructive engagement of academic colleagues who reviewed earlier versions of this manuscript; their thoughtful critique and subject-matter expertise materially elevated both the analytical depth and communicative precision of the final work. It is the authors' sincere aspiration that the knowledge generated through this investigation will advance scholarly dialogue concerning the intersection of artificial intelligence and consumer decision-making in contemporary digital commerce.

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