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The Role of Islamic Ethical Consideration in Shaping Artificial Intelligence Usage Behavior in Higher Education

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Abstract

Purpose—This study aims to examine the effects of perceived usefulness, perceived ease of use, and Islamic Ethical Consideration on ChatGPT usage behavior among Muslim university students in Indonesia.

Design/methodology/approach—A quantitative survey was conducted with 259 respondents and analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) to test both direct and indirect relationships within an extended Technology Acceptance Model.

Findings—The findings indicate that perceived usefulness significantly increases usage behavior ($\beta = 0.241$, $p < 0.001$). Perceived ease of use does not directly influence usage behavior ($\beta = 0.065$, $p = 0.180$) but shows a significant indirect effect through perceived usefulness ($\beta = 0.119$, $p < 0.001$). Islamic Ethical Consideration has a significant negative effect on usage behavior ($\beta = -0.176$, $p = 0.006$).

Research implication/limitation—This study is limited by its cross-sectional design and sample concentration, and it implies the need for ethically grounded AI guidance in higher education and broader future research.

Theoretical Contribution/Originality—This study extends TAM by showing that ChatGPT usage among Muslim students is shaped not only by functional perceptions but also by Islamic ethical considerations.

Keywords: Islamic Ethical Consideration, Technology Acceptance Model, Artificial Intelligence, ChatGPT, Muslim Student.
JEL Classifications: O33, D83, I23, Z12

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1. Introduction

Generative artificial intelligence (AI), most notably ChatGPT, has become increasingly prominent in how students gather information, accomplish academic tasks, and engage with digital tools. Within university settings, these technologies present notable advantages in terms of productivity, efficiency, and learning support. Yet their growing adoption has simultaneously sparked debate over academic integrity, responsible engagement, and excessive dependence on AI-generated outputs. When misused, generative AI tools carry potential risks for both learners and institutions, particularly in promoting inaccuracies, eroding critical reasoning, or undermining ethical standards in academic work (Alfiani & Saptomo, 2024; Sallam et al., 2024).

Among Muslim university students, decisions about AI use may be governed not solely by functional utility, but also by deeply held religious and ethical convictions. Islamic moral principles such as *amanah* (trustworthiness), accountability, and justice; form a normative framework through which technology may be evaluated. *Amanah*, in particular, transcends social convention; it constitutes a fundamental duty articulated in the Qur'an itself. In Surah Al-Anfal (8:27), Allah states, "*O you who have believed, do not betray Allah and the Messenger or betray your trusts while you know (the consequence)*" (Qur'an 8:27). This Qur'anic command extends moral responsibility beyond interpersonal relations into the domain of knowledge and academic conduct. Such ethical awareness may therefore lead students to approach ChatGPT with greater caution and discernment, even when they recognize its functional advantages (Mohadi & Tarshany, 2023; Raquib et al., 2022; Serevan, 2025).

Scholarship on AI adoption in educational settings has frequently drawn on the Technology Acceptance Model (TAM), centering on instrumental constructs such as perceived usefulness and perceived ease of use (Davis, 1989; Venkatesh & Davis, 2000). Research on ChatGPT adoption follows a similar pattern, confirming these utilitarian factors as significant drivers of student engagement (Sallam et al., 2024). Nonetheless, far less scholarly attention has been directed at how religiously grounded ethical orientations influence actual technology use, especially in Muslim-majority contexts like Indonesia. The body of work integrating Islamic values into technology adoption frameworks has predominantly examined digital financial services and Islamic fintech, leaving generative AI in higher education largely unexplored (Alsmadi et al., 2024; Darmansyah et al., 2020; Ibrahim et al., 2024).

To address this gap, the present study augments TAM with Islamic Ethical Consideration as an explanatory variable for ChatGPT usage behavior among Muslim university students in Indonesia. The study investigates how perceived ease of use, perceived usefulness, and Islamic Ethical Consideration jointly predict actual use. Its contribution lies in extending TAM beyond instrumental reasoning toward a value-based framework, generating contextually relevant evidence from an underrepresented setting, and demonstrating that AI adoption is conditioned not only by perceptions of utility and ease but also by ethical responsibility rooted in religious belief.

2. Literature Review

2.1 Theoretical Background

2.1.1 Technology Acceptance Model

Among the theoretical frameworks used to understand technology adoption, TAM has achieved enduring prominence due to its conceptual clarity and empirical robustness. At its core, TAM posits that two cognitive evaluations which determine whether individuals will adopt or reject a technological system. The two cognitive evaluation consist of perceived usefulness and perceived ease of use. These evaluations capture users' assessments of both the instrumental value and the operational accessibility of a technology, which together shape actual engagement (Davis, 1989; Venkatesh & Davis, 2000). Given its parsimony and explanatory strength, TAM has been deployed widely in educational, organizational, and digital service research (Sodik et al., 2022).

The Technology Acceptance Model (TAM) has been widely used to explain individual acceptance of technology through cognitive evaluations, particularly perceived usefulness and perceived ease of use (Fred D. Davis, 1989; Viswanath Venkatesh & Davis, 2000). These constructs have consistently been found to influence behavioral intention and actual usage across various technological contexts (Sodik et al., 2022; Lingga et al., 2021; Wandira et al., 2024; Sallam et al., 2024). However, TAM primarily focuses on utilitarian and efficiency-based considerations, which may not fully capture the complexity of human decision-making, especially in contexts involving ethical or value-laden judgments.

In the context of generative artificial intelligence, such as ChatGPT, usage behavior is not solely driven by perceptions of usefulness or ease, but may also be influenced by normative and ethical considerations (Pillai & Sivathanu, 2020; Kim et al., 2024). Prior studies have extended TAM by incorporating additional factors such as trust, perceived risk, and contextual influences to better explain user behavior in complex technological environments (Gangwar et al., 2015; Zhonggen & Xiaozhi, 2019; Al-Adwan et al., 2023). These findings suggest that cognitive evaluations alone may be insufficient to fully explain technology usage.

While alternative frameworks such as UTAUT and TPB provide broader perspectives by incorporating social influence and behavioral control, prior studies also indicate that these models still have limitations in capturing value-based or ethical dimensions of decision-making (Sodik et al., 2022; Liu & Wu, 2020). This limitation becomes particularly relevant in contexts where ethical considerations are deeply embedded in users' daily practices.

Therefore, this study introduces Islamic Ethical Consideration (IEC) as an extension to TAM to capture value-based evaluations grounded in religious principles. Previous research has shown that ethical beliefs and religiosity can significantly influence individual attitudes and behaviors in various domains, including technology adoption (Darmansyah et al., 2020; Alsmadi et al., 2024; Ibrahim et al., 2024). Furthermore, ethical frameworks grounded in Islamic principles, such as *amanah* and *maqasid al-shariah*, have been discussed as relevant foundations for evaluating emerging technologies including artificial intelligence (Mohadi & Tarshany, 2023; Raquib et al., 2022; Serevan, 2025). By integrating IEC into the model, this study moves beyond purely cognitive determinants and incorporates a normative dimension that may either reinforce or constrain technology usage behavior.

2.1.2 Usage Behavior

In technology adoption research, usage behavior denotes the degree to which individuals actually engage with a system in their everyday or task-oriented activities. This construct differs substantively from behavioral intention, which captures anticipated rather than realized use. The gap between intention and behavior has been well documented, as many factors, including contextual conditions, personal assessment, and practical fit within users' routines, shape whether planned use translates into sustained action (Dhewandrie & Yuniawan, 2023; Nadal et al., 2020).

Prior research highlights that realized technology use is conditioned by both internal cognitive evaluations and external situational factors. Digital tools that are well integrated into users' everyday routines and offer high accessibility tend to be adopted consistently, whereas impediments such as low compatibility, insufficient support, or elevated risk perceptions may disrupt the progression from intent to action (Kim et al., 2024; Li et al., 2024; Widyaningrum et al., 2025). This complexity underscores the need to treat usage behavior as a substantively distinct construct worthy of independent empirical examination.

Within the context of ChatGPT, measuring usage behavior as the outcome variable is particularly appropriate, given the informal and fluid manner in which students incorporate generative AI across academic and non-academic domains. Engagement with the tool may be governed not only by assessments of its utility and ease of operation, but also by whether such use is deemed morally appropriate given the student's religious values and academic commitments. Accordingly, actual usage behavior serves as the most directly relevant indicator of student engagement with ChatGPT in this study.

2.1.3 Perceived Ease of Use

Perceived ease of use (PEU) captures the degree to which individuals believe that engaging with a technology requires little cognitive or procedural effort. In the TAM framework, this construct signals whether a system appears intuitive, learnable, and manageable to the average user. Lower perceived difficulty tends to reduce adoption barriers and encourages greater willingness to engage with the technology (Ardian et al., 2023; Sukainah et al., 2019).

Across a range of digital adoption studies, ease of use has consistently emerged as a meaningful predictor of technology acceptance. When a system is perceived as intuitive and straightforward, users are more inclined to incorporate it into their regular activities without significant friction (Al-Adwan et al., 2023; Alakrash & Razak, 2021; Liu & Wu, 2020). This dynamic is especially visible in educational and digital service settings, where usability directly shapes whether users sustain their engagement over time (Alfani et al., 2023; Mardhiah et al., 2022).

ChatGPT's reliance on conversational natural-language input makes perceived ease of use a particularly salient factor in this context, as the platform requires no specialized technical competence. Students who find it straightforward and uncomplicated are likely to use it more readily within their academic and daily routines. Based on this reasoning, the following hypothesis is proposed:

H1: Perceived ease of use has a positive effect on ChatGPT usage behavior.

2.1.4 Perceived Usefulness

Perceived usefulness (PU) denotes the subjective belief that using a particular technology will improve one's task performance or ability to achieve valued outcomes. Within the TAM framework, this construct reflects the instrumental evaluation of a system, particularly whether it meaningfully improves efficiency, productivity, or output quality (Al-Suqri, 2014; Han & Sa, 2022). Its performance-centered nature makes perceived usefulness one of the most consistently influential factors across technology adoption research.

Research consistently indicates that users are more favorably disposed toward systems they perceive as functionally beneficial. In learning and digital service contexts, perceived usefulness has been associated with deeper engagement, greater user satisfaction, and stronger continuance intention, particularly when the technology is perceived to directly support task completion or improve learning performance (Putra et al., 2021; Zahrani, 2021; Zhonggen & Xiaozhi, 2019). TAM research further suggests that ease of use indirectly amplifies perceived usefulness, as lower operational effort reinforces users' evaluations of a system's practical value (Al-Suqri, 2014; Han & Sa, 2022).

For ChatGPT specifically, usefulness perceptions are likely to be a primary driver, as students typically turn to generative AI to accelerate task completion, support idea generation, and improve their overall productivity. When students perceive ChatGPT as genuinely beneficial for both academic and personal purposes, they are more likely to use it more frequently. Based on this reasoning, the following hypotheses are proposed:

H2: Perceived usefulness has a positive effect on ChatGPT usage behavior.

H3: Perceived ease of use has a positive effect on perceived usefulness.

2.1.5 Islamic Ethical Consideration

Islamic Ethical Consideration is defined here as the degree to which individuals assess their technology use through the lens of Islamic moral principles. In digital contexts, this construct refers to whether a system is perceived as compatible with key Islamic values, including *amanah* (trustworthiness), justice, accountability, and the obligation to avoid harm and deception. While functional evaluations focus on what a technology can do, Islamic ethical consideration introduces a normative dimension by addressing whether its use aligns with divinely enjoined moral responsibility and the broader consequences of human conduct (Mohadi & Tarshany, 2023; Raquib et al., 2022; Serevan, 2025).

The concept of *amanah* holds particular salience within Islamic ethical thought, as it frames trustworthiness as simultaneously a social duty and a spiritual imperative. As expressed in Surah Al-Anfal (8:27), Allah states, "*O you who have believed, do not betray Allah and the Messenger or betray your trusts while you know (the consequence)*" (Qur'an 8:27). Applied to generative AI, this principle serves as a moral benchmark, reminding users that technological tools should not be used in ways that compromise intellectual honesty, academic responsibility, or the integrity of knowledge production. For student users of ChatGPT, this translates into an ethical evaluation that goes beyond convenience and efficiency to encompass moral propriety in academic conduct.

Accumulating evidence suggests that Islamic values meaningfully influence how individuals approach technology-related choices, shaping their assessments of legitimacy, moral permissibility, and normative compliance. In the domain of Islamic fintech and related digital services, religious and ethical factors have been shown to significantly condition how

users evaluate and accept technology (Alsmadi et al., 2024; Darmansyah et al., 2020; Ibrahim et al., 2024). Extending this perspective to generative AI, students with higher levels of Islamic ethical consideration may exercise greater restraint in using ChatGPT, especially when they perceive that reliance on such tools may conflict with principles of academic integrity and moral accountability. Accordingly, the following hypothesis is proposed:
H4: Islamic Ethical Consideration has a negative effect on ChatGPT usage behavior.

2.2 Research Framework

Drawing on the theoretical framework and hypotheses outlined above, the proposed research model is illustrated in Figure 1.

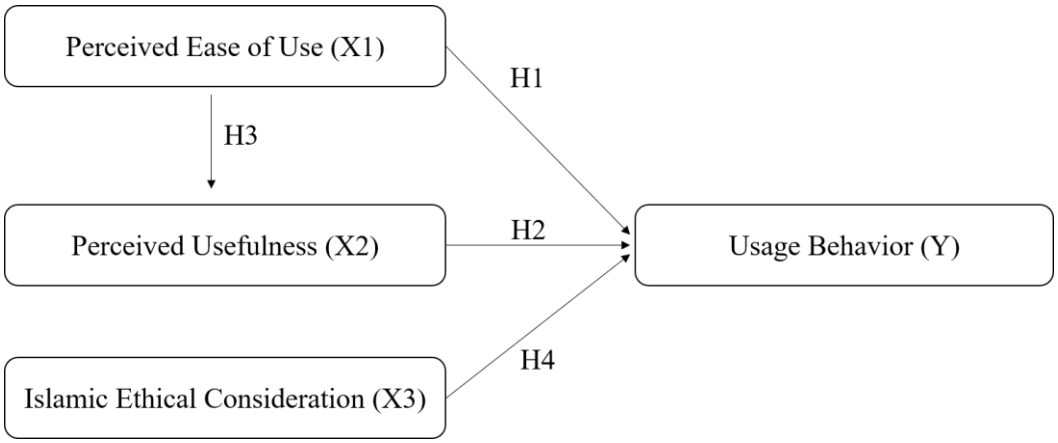

Figure 1. Proposed Research Model
Source(s): Authors' own work

3. Methodology

A quantitative cross-sectional survey design was employed to investigate the factors shaping ChatGPT usage behavior among Muslim university students in Indonesia. Respondents were selected through purposive sampling based on two qualifying criteria: self-identification as Muslim and prior experience with ChatGPT. These criteria were adopted because the study specifically targets the intersection of Islamic ethical values and AI engagement in academic contexts. The final sample comprised 259 respondents, a size judged sufficient for PLS-SEM analysis given the model's parsimonious structure and its prediction-oriented focus. The adequacy of the sample size was assessed using statistical power considerations as recommended in PLS-SEM literature (Hair et al., 2014). With a sample size of 259, the study exceeds the minimum requirement for detecting medium effect sizes at a statistical power level of 0.80, given the model complexity and number of predictors. This indicates that the sample size is sufficient to ensure reliable parameter estimation and hypothesis testing. Demographic characteristics of the sample are detailed in Table 1. The majority of respondents were enrolled in social and humanities programs (81.85%), with the remaining 18.15% from STEM fields. Female respondents constituted 70.27% of the sample, while 29.73% were male. Most participants (89.19%) fell within the 17–19 age bracket, followed by 20–22 years (10.04%) and 23–25 years (0.77%). Public university students made up 90.35% of the sample, compared to 9.65% from private institutions. These figures reflect a sample concentrated among younger undergraduates at

public institutions, consistent with the demographic profile of ChatGPT users in Indonesian higher education.

All constructs were operationalized using multi-item scales on a 5-point Likert response format (1 = strongly disagree to 5 = strongly agree). The IEC scale comprised three items grounded in Ratten (2012) ethical adoption framework and subsequently adapted to reflect ChatGPT-specific academic scenarios. PEU and PU were each measured with three items drawn from Gangwar et al. (2015), while UB was assessed using three items adapted from Pillai & Sivathanu (2020). Detailed item wording and translations are provided in Appendix 1. Analysis was carried out using PLS-SEM in SmartPLS. Reliability and convergent validity of the measurement model were assessed through Cronbach's alpha, composite reliability, and AVE, while discriminant validity was evaluated using the Fornell–Larcker criterion and the HTMT ratio. Collinearity was assessed via VIF values. For the structural model, significance testing was performed using bootstrapping with 5,000 resamples, and R^2 values were used to gauge the model's explanatory power.

The structural model was further evaluated using multiple criteria, including the coefficient of determination (R^2) to assess explanatory power, effect size (f^2) to examine the contribution of each exogenous construct, and predictive relevance (Q^2) using blindfolding procedures. Additionally, out-of-sample predictive performance was assessed using PLS-Predict to evaluate the model's predictive capability.

Table 1. Characteristics of Respondent

Measure	Items	Frequency	Percentage
Field of Study	Social and Humanities	212	81.85%
	STEM	47	18.15%
Sex	Male	77	29.73%
	Female	182	70.27%
Age Group	17–19 years	231	89.19%
	20–22 years	26	10.04%
	23–25 years	2	0.77%
Category of University	Private	25	9.65%
	Public	234	90.35%

Source(s): Authors' own work

4. Results and Discussion

4.1 Common Method Bias

To assess the potential for common method bias (CMB), this study employed a full collinearity test using variance inflation factor (VIF) values, as recommended in PLS-SEM literature. As shown in Table 4, all constructs exhibited VIF values below the conservative threshold of 3.3, indicating that common method bias is unlikely to pose a serious concern. Additionally, Harman's single-factor test was conducted, and the results show that the first factor accounts for 34.30% of the total variance, which is below the 50% threshold. This finding indicates that no single factor dominates the variance, further confirming the absence of substantial method bias.

4.2 Measurement Model Assessment

Prior to testing the structural model, the psychometric properties of all constructs were assessed. Table 2 shows that every indicator loading surpassed the 0.70 threshold, attesting to satisfactory item-level reliability. Construct-level reliability was equally strong, with Cronbach's alpha and composite reliability values exceeding 0.70 for all constructs. Furthermore, AVE values universally exceeded 0.50 across constructs, confirming sufficient convergent validity.

Table 2. Measurement Model Result

Constructs	Items	Loadings	Cronbach's Alpha	CR (rho_c)	AVE	Cross Loadings
IEC	IEC1	0.934	0.857	0.908	0.768	0.934
	IEC2	0.899				0.899
	IEC3	0.791				0.791
PEU	PEU1	0.868	0.886	0.929	0.814	0.868
	PEU2	0.918				0.918
	PEU3	0.920				0.920
PU	PU1	0.741	0.704	0.818	0.601	0.741
	PU2	0.737				0.737
	PU3	0.844				0.844
UB	UB1	0.866	0.89	0.932	0.820	0.866
	UB2	0.922				0.922
	UB3	0.927				0.927

Source(s): Authors' own work

Discriminant validity was examined through the HTMT ratio criterion. As reported in Table 3, all HTMT values fell comfortably below the 0.85 threshold, confirming that each construct is empirically distinguishable from the others. Taken together, these findings establish that the measurement model demonstrates sound discriminant validity.

Table 3. Discriminant Validity Assessment Using HTMT

Constructs	IEC	PEU	PU	UB
IEC	—			
PEU	0.395	—		
PU	0.208	0.549	—	
UB	0.263	0.274	0.351	—

Source(s): Authors' own work

Collinearity among indicators was assessed using VIF values, as presented in Table 4. All VIF values fell below the acceptable limit of 5.0, indicating an absence of problematic multicollinearity. Collectively, the measurement model evaluation supports the reliability and validity of all constructs, permitting subsequent structural model testing.

Table 4. Indicator Collinearity Assessment (VIF Values)

Construct	Indicator	VIF
IEC	IEC1	2.344
	IEC2	2.740
	IEC3	1.847
PEU	PEU1	2.098
	PEU2	3.080
	PEU3	2.938
PU	PU1	1.702
	PU2	1.776
	PU3	1.176
UB	UB1	2.014
	UB2	3.499
	UB3	3.479

Source(s): Authors' own work

4.3 Structural Model and Hypothesis Testing

Hypothesis testing was conducted through structural model estimation, with results displayed in Table 5. PEU did not exert a statistically significant direct effect on UB ($\beta = 0.065$, $p = 0.180$), thus H1 was not supported. PU, by contrast, showed a positive and significant direct effect on UB ($\beta = 0.241$, $p < 0.001$), confirming H2. This outcome indicates that students' ChatGPT adoption is primarily driven by how much they believe the tool enhances their task performance and productivity.

Table 5. Structural Model Result (Hypothesis Testing)

Hypothesis	Path	β	t-value	p-value	Result
H1	PEU → UB	0.065	0.915	0.180	Not supported
H2	PU → UB	0.241	3.647	0.000	Supported
H3	PEU → PU	0.492	11.806	0.000	Supported
H4	IEC → UB	-0.176	2.512	0.006	Supported

Source(s): Authors' own work

PEU also significantly and positively predicted PU ($\beta = 0.492$, $p < 0.001$), lending support to H3 and suggesting that ease-of-use perceptions serve as an antecedent to usefulness evaluations. Notably, IEC demonstrated a significant negative effect on UB ($\beta = -0.176$, $p = 0.006$), supporting H4. This finding implies that students holding stronger Islamic ethical values are less likely to engage extensively with ChatGPT, particularly when they perceive a moral tension between its use and Islamic principles of responsibility and academic integrity. The complete path model is displayed in Figure 2.

The explanatory power of the model was assessed using the coefficient of determination (R^2). As described in the Table 6, the results indicate that perceived usefulness (PU) has an R^2 value of 0.242, suggesting that 24.2% of its variance is explained by perceived ease of use. Meanwhile, usage behavior (UB) has an R^2 value of 0.135, indicating that 13.5% of its

variance is explained by its predictors. These values suggest that the model has modest explanatory power, which is common in behavioral research.

Table 6. Results of Structural Model Assessment (R^2, f^2, and Q^2)

Construct	R^2	R^2 Adjusted	Q^2	f^2 (IEC → UB)	f^2 (PEU → PU)	f^2 (PEU → UB)	f^2 (PU → UB)
PU	0.242	0.239	0.122	—	0.320	—	—
UB	0.135	0.125	0.110	0.031	—	0.003	0.051

Source(s): Authors' own work

Effect size (f^2) analysis further reveals that perceived ease of use has a substantial effect on perceived usefulness (f^2 = 0.320) as seen in the Table 6. In contrast, perceived usefulness shows a small effect on usage behavior (f^2 = 0.051), while Islamic Ethical Consideration exhibits a small effect (f^2 = 0.031). The direct effect of perceived ease of use on usage behavior is negligible (f^2 = 0.003), indicating that its influence is primarily indirect through perceived usefulness.

The predictive relevance of the model was evaluated using the blindfolding procedure. The results is represented in Table 6 that shows the Q^2 value for perceived usefulness is 0.122, while the Q^2 value for usage behavior is 0.110. Since all Q^2 values are greater than zero, the model demonstrates adequate predictive relevance. Although the magnitude of these values is relatively small, this is consistent with the modest explanatory power of the model and reflects the complexity of behavioral phenomena.

4.4 Discussion

By incorporating Islamic Ethical Consideration into TAM, this study offers a more contextually sensitive account of ChatGPT adoption among Muslim university students. The results reveal that PEU does not independently predict usage, whereas PU emerges as a significant positive predictor, and PEU exerts its influence on usage indirectly through PU. These patterns align with established TAM propositions regarding the primacy of usefulness in driving technology engagement, while also indicating that ease of use functions predominantly as an antecedent to usefulness rather than as a direct determinant of behavior (Davis, 1989; Venkatesh & Davis, 2000). This may be attributed to the standardized and intuitive design of generative AI interfaces, which reduces variability in users' perceptions of ease of use and renders it a baseline expectation rather than a decisive factor.

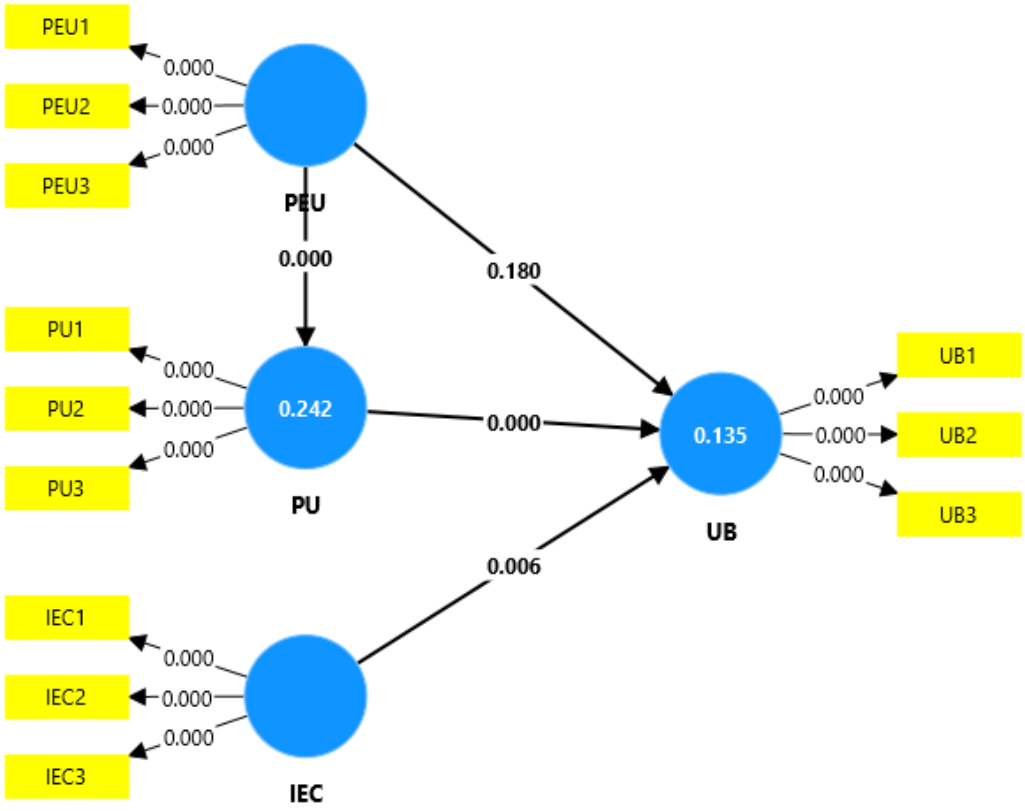

Figure 2. Structural Model Result
Source(s): Authors' own work

The most theoretically notable finding is the significant negative effect of IEC on ChatGPT usage. This result reveals that Muslim students do not make AI adoption decisions based purely on utility; religious and ethical principles also enter into their evaluations. When students sense a conflict between using ChatGPT and Islamic values such as amanah, honesty, and moral accountability, they tend to moderate or restrict their engagement with the tool. This confirms that moral judgment can meaningfully counteract instrumental motives in technology adoption decisions. In this regard, IEC functions as a boundary condition that constrains technology usage when ethical considerations become salient. The finding extends the literature on Islamic value-based technology acceptance, which has hitherto been concentrated in digital finance contexts rather than generative AI in academic settings (Alsmadi et al., 2024; Darmansyah et al., 2020; Ibrahim et al., 2024). Unlike prior TAM extensions that have incorporated facilitating constructs; such as trust (Gangwar et al., 2015; Al-Adwan et al., 2023), perceived risk (Sallam et al., 2024), or moral norms (Liu & Wu, 2020) which generally reinforce technology adoption; IEC in the present study operates in the opposite direction, functioning as a normative inhibitor that restrains usage behavior. This distinction underscores a theoretically novel contribution: value-based constructs embedded in religious frameworks do not merely augment TAM's predictive scope, but can fundamentally reorient the direction of its effects.

Viewed in aggregate, these results affirm that TAM retains explanatory power in the generative AI domain but benefits from augmentation when users are embedded in religiously and ethically oriented communities. The inclusion of Islamic Ethical Consideration as a statistically significant predictor advances the theoretical understanding of AI adoption beyond purely functional determinants. This demonstrates that incorporating

value-based constructs into TAM is essential for explaining technology adoption in contexts where ethical considerations are integral to decision-making. For practitioners, the findings signal that institutions should complement promotional messaging about AI utility with structured ethical guidance that explicitly addresses issues of academic integrity and responsible technology use.

5. Conclusion and Recommendation

This study investigated the determinants of ChatGPT usage behavior among Muslim university students in Indonesia by augmenting TAM with an Islamic Ethical Consideration construct. PU was confirmed as a significant positive predictor of usage, while PEOU influenced usage indirectly through its effect on PU. Crucially, IEC emerged as a significant negative predictor, indicating that religiously grounded moral values can restrain AI engagement alongside functional drivers and, in some cases, in opposition to them. These findings underscore that generative AI adoption cannot be fully explained by utilitarian calculations alone; ethical and religious orientations constitute equally meaningful determinants. The study thus contributes to the literature by demonstrating the value of embedding Islamic ethical constructs within TAM for contextually appropriate AI adoption research.

Several limitations should be acknowledged. The sample was concentrated among younger social and humanities students at public universities, which constrains generalizability to other student demographics and institutional types. The cross-sectional design captures a single temporal snapshot of perceptions and behavior, precluding causal inference or an examination of how ethical considerations evolve with sustained AI use. Additionally, although the model's parsimonious scope supports conceptual clarity, it may have excluded potentially important variables such as social influence, academic pressure, and institutional AI policies.

On the basis of these findings, several practical and scholarly recommendations follow. University instructors and administrators should develop AI-use guidelines that emphasize ethical responsibility, particularly academic integrity, rather than treating AI adoption as a purely technical matter. Policymakers overseeing higher education should embed ethical AI literacy within digital literacy curricula, especially in contexts where religious and moral dimensions of technology use are salient. Future researchers are encouraged to recruit broader, more heterogeneous student samples, incorporate additional predictors such as social norms and institutional support, and employ longitudinal or experimental designs to better trace how ethical and functional considerations co-evolve over time.

Declarations

Authorship

All authors actively participated in the work and have agreed to the final version of the manuscript.

Author Contribution Statement

Satrio Tegar Sadewo: conceptualization, methodology, writing of the original draft, review and editing of the manuscript, and supervision of the overall research process. Abdul Aziz Baihaqi: investigation process and supported data curation throughout the study. Aditya Kumala Dewi:

validation, visualization, and assisted in reviewing and editing the manuscript. All authors discussed the results together and approved the final version of the manuscript.

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Data Availability Statement

This research relies on primary quantitative data gathered via a Likert-scale survey instrument. In line with ethical guidelines and confidentiality commitments to participants, the raw dataset is not openly accessible. An anonymized version of th e data may be made available by the corresponding author upon reasonable request.

Declaration of Interests Statement

The author declares that there are no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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APPENDIX

Appendix 1. Construct And Measurement Items

Construct	Measurement Item	Translated Item	References
Islamic Ethical Consideration (IEC)	A student using ChatGPT to write essays or assignments without conducting deeper analysis violates ethics in Islam	*Seorang mahasiswa menggunakan ChatGPT untuk menulis esai atau tugas kuliah tanpa menganalisis lebih dalam, menyalahi etika dalam Islam.*	(Ratten, 2012)
	A student using ChatGPT to write essays or assignments without comparing with other references violates ethics in Islam.	*Seorang mahasiswa menggunakan ChatGPT untuk menulis esai atau tugas kuliah tanpa membandingkan dengan referensi lain, menyalahi etika dalam Islam.*	
	A student using ChatGPT to manipulate research data violates ethics in Islam.	*Seorang mahasiswa menggunakan ChatGPT untuk memanipulasi data penelitian, menyalahi etika dalam Islam.*	
Perceived Ease of Use (PEOU)	The steps for using ChatGPT are simple and clear.	*Langkah-langkah untuk menggunakan ChatGPT itu sederhana dan jelas.*	(Gangwar et al., 2015)
	Learning to operate ChatGPT is easy for me.	*Bagi saya, mempelajari cara menggunakan ChatGPT itu mudah.*	
	ChatGPT is simple to use.	*ChatGPT mudah digunakan.*	
Perceived Usefulness (PU)	ChatGPT helps me complete tasks more effectively.	*ChatGPT membantu saya menyelesaikan tugas dengan lebih efektif.*	(Gangwar et al., 2015)
	ChatGPT boosts my productivity.	*ChatGPT meningkatkan produktivitas saya.*	
	ChatGPT makes it easier for me to complete tasks quickly.	*ChatGPT mempermudah saya menyelesaikan tugas dengan cepat.*	
Usage Behavior (UB)	I regularly use ChatGPT for study and non-study matters	*Saya rutin menggunakan ChatGPT untuk studi dan diluar studi*	(Pillai & Sivathanu, 2020)
	I use ChatGPT daily	*Saya menggunakan ChatGPT sehari-hari*	
	I often use ChatGPT in my daily life	*Saya sering menggunakan ChatGPT dalam keseharian saya*	