Final Group Project: Audience Analysis Research Paper

To what extent does the use of Generative AI for academic writing influence university students' writing self-efficacy, and how is this relationship moderated by their level of trust in Generative AI?

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Abstract

Generative Artificial Intelligence (GenAI) tools are transforming academic writing in higher education, raising questions about their impact on students' confidence and learning. This study investigates the relationship between GenAI use, trust and writing self-efficacy among university students, drawing on Bandura's Theory of Self-Efficacy. Using a cross-sectional survey of 102 students and validated scales, we examined whether GenAI use predicts writing self-efficacy and whether trust moderates this relationship. Results indicate that while frequent GenAI use correlates with higher trust, neither use nor trust significantly influences writing self-efficacy, and trust does not moderate the effect. These findings challenge assumptions that technological adoption alone enhances academic confidence, highlighting the enduring role of mastery experiences and reflective practice. Implications include integrating GenAI as a supportive tool rather than a substitute for skill development. Future research should employ longitudinal and mixed-methods designs to clarify causal mechanisms.

Introduction

The rapid proliferation of Generative Artificial Intelligence (GenAI) tools such as ChatGPT, DeepSeek, Gemini, or Copilot has reshaped academic writing practices in higher education. Recent reports indicate that a substantial proportion of university students now rely on GenAI for ideation, composition, and revision tasks (OpenAI, 2025; Sousa & Cardoso, 2025). In Singapore, a 2024 CNA survey found that more than eight in 10 tertiary students had used GenAI for coursework or communication-related activities, often without formal instruction on responsible or ethical use (CNA, 2024a).

The widespread adoption of GenAI presents both opportunities and challenges. GenAI use is now a ubiquitous global issue that challenges how tertiary students learn and write (Hysaj et al., 2025). Since academic writing encompasses processes such as brainstorming, drafting,

revising, editing, and critical reflection (Wang, 2025), GenAI's integration into these processes represents more than just a writing aid—it transforms the cognitive and creative dimensions of writing itself. Therefore, understanding how GenAI affects students' academic writing beliefs and confidence is both timely and necessary.

Our research investigates the influence of GenAI use on writing self-efficacy—defined as students' belief in their ability to perform writing tasks successfully (Sun & Wang, 2020; Mitchell et al., 2023). Grounded in Bandura's (1977) Theory of Self-Efficacy, which posits that individuals' beliefs in their capabilities determine how they think, feel, and act when performing tasks, this framework provides a theoretical basis for examining students' confidence in managing academic writing with or without GenAI assistance. High writing self-efficacy predicts stronger engagement, persistence, and writing quality, whereas low self-efficacy is associated with avoidance and weaker outcomes (Mitchell et al., 2023).

While Generative AI is a novel technology, Bandura's self-efficacy theory remains relevant because it describes fundamental psychological processes that underlie learning and skill development, regardless of the specific tools involved. The mechanisms by which individuals build confidence through mastery experiences, reflection, and feedback apply whether students are using traditional methods or advanced technologies like GenAI. By focusing on how students' beliefs about their capabilities influence their engagement and outcomes, Bandura's framework provides a robust lens for examining the impact of GenAI on academic writing. Resultantly, the theory supports research into new technologies by explaining the human factors that shape adaptation and learning.

Besides, trust in GenAI, defined as the expectation that AI behaves reliably under uncertainty, is a key psychological moderator shaping how users engage with and perceive GenAI outputs. Lee and See (2004) note that trust shapes users' attitudes towards GenAI. Hence, we conceptualise trust as a psychological moderator that shapes how individuals engage with GenAI tools while influencing their writing self-efficacy. Although prior research has examined the pedagogical and ethical dimensions of GenAI use in higher education, limited work has addressed its psychological impact on students' writing efficacy, particularly the moderating role of trust. This study addresses this gap by investigating how students' cognitive engagement and trust in GenAI influence their academic writing beliefs and performance.

Literature Review

This literature review synthesises current research on the impact of GenAI on academic writing, focusing on students' writing self-efficacy and trust in GenAI systems.

Recent empirical work underscores that writing is the domain most immediately transformed by GenAI adoption in higher education. Chan and Hu (2023) report that students perceived GenAI as most helpful for improving writing fluency and grammar accuracy, positioning writing as the core area of GenAI-enabled learning. Ji et al. (2025) found that students with higher AI literacy exhibited greater self-efficacy and creativity, suggesting that using AI strengthened positive learning outcomes.

However, several papers caution that "hands-off" use can erode competence over time (Watermeyer et al., 2024; Jensen & Jensen, 2025; Han, 2025). Dependency on GenAI may undermine students' writing self-efficacy—their confidence in their ability to engage in critical

reading, argumentation, and revision.Wang (2025) mentions two dilemmas for this: 1. Navigating between enhancing one's writing while maintaining an authentic voice and 2. Balancing the loss and gain of learning experiences with GenAI integration. This conundrum is pointed out by educators, where GenAI use is capable of both disrupting and enhancing academic writing (Stanford, 2025).

Building on these perspectives, another key construct influencing GenAI adoption is trust, which shapes how students interpret and rely on AI-generated feedback. Wang et al. (2025) further support the moderating role of trust in educational GenAI use: In a survey of 682 university students, they found that trust in GenAI significantly predicted both reliance and resistance, which in turn affected students' intention to continue using the technology. Importantly, Amoozadeh (2023) states that trust in AI evolves continuously based on users' experiences; users' perceptions that AI helps task completion, provides assistance when stuck, improves knowledge, and enhances confidence all contribute to strengthening trust. Thus, while writing self-efficacy focuses on students' confidence in their own abilities, their experience with GenAI is also shaped by how much they trust the technology. Trust determines whether GenAI is seen as a supportive learning partner or a source of dependency, which alters how it affects students' writing efficacy.

Excessive trust may cause users to blindly accept AI suggestions, while insufficient trust can reduce the efficiency of GenAI usage. In education, trust impacts adoption rates and learning engagement. Both excessive and insufficient trust may undermine learning outcomes. Existing studies provide valuable insights into GenAI's pedagogical and ethical implications but remain limited in explaining its psychological effects on learners.

Specifically, there is a lack of empirical research examining how trust moderates the link between GenAI use and writing self-efficacy.

Research Hypotheses

Our study focuses on the following hypotheses:

Hypothesis 1: Greater GenAI use for academic writing is associated with higher writing self-efficacy among university students.

Hypothesis 2: The positive effect of GenAI use on writing self-efficacy is stronger among university students with higher trust in GenAI.

Research and Methodology

Research Design

Our research design is cross-sectional in nature, collecting data from university students at a fixed point in time. It lets us investigate the relationship between GenAI use for academic writing and university students' writing self-efficacy through one single data collection (alongside the role of trust as a moderator).

Sampling & Respondents

We surveyed 140 university students using convenience and snowball sampling. However, our inclusion criteria (university students who have used GenAI for academic writing in the past 12 months), led to 38 responses being removed as the respondents were either not university students or did not use GenAI for academic writing. Hence, this led to 102 responses being analysed. Furthermore, we ensured our survey was bilingual (Chinese and English), enabling us to reach out to more potential respondents (i.e. Chinese university students).

Questionnaire Instruments

Our scales of use: the new Media and Technology Usage and Attitudes Scale (MTUAS) (Rosen et al., 2013), the Self-Efficacy Scale for Academic Writing (SESAW) (Mitchell et al., 2017), and the Trust-In-LLMs Index (TILLMI) (De Duro et al., 2025) were adapted for our questionnaire due to their psychometric properties, theoretical justifications, and strong GenAI links. The new MTUAS was adapted to fit our questionnaire's items relating to our independent

variable—extent of GenAI use. The SESAW was used for measuring our dependent variable—writing self-efficacy. The TILLMI was adapted to measure moderation effects —trust in GenAI.

MTUAS Justification

The new MTUAS (Appendix B) consists of 60 items split into usage subscales (44 items comprising 11 smaller subscales that use a 10-point frequency scale), and attitudes subscales (16 items comprising 4 smaller subscales that use a 5-point Likert Scale).

We chose this scale because there is a dearth of existing scales that target the *extent* of GenAI use. Moreover, Rosen et al. (2013) mentioned that the MTUAS is a method of measuring media and technology across a variety of research studies, and can be "used as a single 60-item scale or any subset of the 15 subscales", which fits our purpose to examine GenAI, a new form of media-technology involvement. It also possesses high internal reliability across its subscales (Table 1) alongside strong external validity.

The new MTUAS captures self-reported frequency (Appendix E), aligning with how students engage with GenAI. It provides a more realistic and accurate measurement of GenAI use, rather than through time-based measurements (e.g. '1 hour', '2 hours', '3 hours').

SESAW Justification

The SESAW is a 10-item 4-point Likert Scale. It has strong internal reliability (Cronbach's alphas were established between .85-.90 (Mitchell et al., 2017)). Validity was assessed through comparisons with the General Self-Efficacy Scale and was .50 (pre-test) and .53 (post-test).

Explicitly developed based on Bandura's theory of self-efficacy and possessing domain-specificity (i.e. designed purposefully to measure academic writing self-efficacy), SESAW hence ties directly to our research on university students' writing self-efficacy. Notably, SESAW targets higher-education contexts—validated based on baccalaureate nursing students—unlike other scales which the SESAW researchers have stated as too diverse or broad.

TILLMI Justification

The 6-item TILLMI uses a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) (De Duro et al., 2025). TILLMI directly assesses trust in large language models (LLMs), including GenAI tools used by students for academic writing like ChatGPT, Claude, and many others — directly connecting to our moderator of trust in GenAI.

Furthermore, through large-scale validation (N=1000), exploratory and confirmatory factor analyses, a two-factor structure was confirmed with strong model fit (CFI = .995, TLI = .991, RMSEA = .046, pX2 > .05). TILLMI addresses human-GenAI trust through two dimensions: cognitive trust (reliance on LLMs), which looks at users developing trust based on an LLM's accuracy and consistency; and affective trust (closeness with LLMs), which looks at users being comforted by an LLM's responsiveness and fluency.

The scale also demonstrated high internal reliability and validity. Based on Cronbach's Alpha, each of the two factors had acceptable values (αF1 = .893 for affective trust; αF2 = .781 for cognitive trust). TILLMI also showcased divergent validity, discriminating between individuals who use LLMs and those who do not; non-users of LLMs showed no significance

while users of GenAI reported significantly higher trust scores, confirming TILLMI's applicability to real-life LLM contexts.

Adapted Questionnaire

To ensure consistency between our adapted TILLMI scale and the SESAW, we decided to adapt the TILLMI scale from a 5-point to a 4-point Likert format. Ensuring the same response format across instruments can reduce response errors and decrease cognitive burden (Podsakoff et al., 2012). Additionally, by removing the neutral midpoint for our adapted TILLMI scale, this allowed us to collect more discriminate responses and prevent central tendency bias (Johns, 2005). As long as items' meanings remain consistent, Joshi et al. (2015) argue that adjusting Likert points can be acceptable.

However, we kept the adapted MTUAS items to a 10-point frequency scale because it measures the frequency of a behaviour, which is difficult to collapse into a 4-point (Agree/Disagree) Likert scale and may risk invalidating the measurement of our independent variable. As the attitudes subscales did not relate to our measurement of extent of GenAI use, we did not choose to adapt it. We adapted 9 MTUAS items, selecting from subscales like Smartphone usage, Internet Searching, Text Messaging, and General Social Media Usage since they consisted of items that were easily mappable for our adaptations; e.g. "Use your mobile phone during class or work time" was adapted to "Use a GenAI tool during class or study sessions to help with academic writing tasks".

Ultimately, our questionnaire consisted of 30 item—five on demographics, six on trust in GenAI, 10 on writing self-efficacy, and nine on extent of GenAI use.

Results and Findings

Post-survey, we cleaned the data by filtering out invalid responses (e.g. responses that stated they were not university students or that they did not use GenAI for academic writing). Afterwards, we ran different tests on our cleaned dataset.

Reliability Analysis—*TILLMI*

The initial six-item Trust in GenAI scale demonstrated low internal consistency (Cronbach's α = .51) (Table 2). Item-total statistics (Table 3) indicated that Q8, Q9, and Q11 showed weak correlations with the overall scale (r = .18, r = .10, r = .20, respectively). Q11 was re-coded into Q11_rev. However, rerunning the reliability test yielded a slightly lower α (.49) (Table 4), suggesting that the reverse item did not contribute positively to internal consistency. Following recommended scale refinement procedures (DeVellis et al., 2021), items were evaluated for conceptual alignment and statistical adequacy. Specifically, Q8 (focused on behavioral engagement rather than trust), Q9 (negatively worded and semantically ambiguous), and Q11_rev ("the last word is mine," reflecting self-agency rather than trust) were removed. The refined three-item version (Q6, Q7, Q10) demonstrated a more acceptable reliability (α = .66) (Table 5).

Therefore, subsequent analyses were conducted using this revised Trust in GenAI scale, excluding Q8, Q9, and Q11.

Reliability Analysis—*MTUAS*

Reliability analysis revealed that our adapted items from the new MTUAS had excellent internal consistency (Cronbach's α = .91; Table 6), meaning that the items measured a coherent construct of GenAI use for academic writing.

Reliability Analysis—*SESAW*

Reliability analysis revealed that the SESAW had good internal consistency (Cronbach's α = .85; Table 7), meaning that the items measured a coherent construct of academic writing self-efficacy.

Correlation of Variables

Pearson's Correlation was conducted to examine the relationships between GenAI use, writing self-efficacy, and trust in GenAI (Table 8). The correlation between GenAI use and writing self-efficacy was positive but not statistically significant; $r(100) = .10$, $p = .34$. However, there was a significant association between GenAI use and trust in GenAI; $r(100) = .53$, $p < 0.01$, meaning that university students who used GenAI frequently also trusted it more. Lastly, there was no significant relationship between trust in GenAI and writing self-efficacy; $r(100) = -.02$, $p = .83$.

Linear Regression

We first tested our hypothesis—greater GenAI use for academic writing is associated with higher writing self-efficacy among university students—by running a hierarchical linear regression after controlling for gender, age, and level of study (Table 9). In the first step,

demographic variables collectively did not significantly predict writing self-efficacy, $F(3, 98) = 1.58$, $p = .20$, explaining 4.6% of the variance. After adding GenAI use in the second step, the overall model remained non-significant, $F(4, 97) = 1.22$, $p = .31$, and the change in explained variance was negligible ($\Delta R^2 = .001$, $p = .70$). GenAI use was not a significant predictor of writing self-efficacy, $\beta = .04$, $p = .70$. Hence, Hypothesis 1 was not supported.

Moderation Analysis

A moderation analysis was conducted using PROCESS Model 1 (Hayes, 2022) to examine whether trust in GenAI moderates the relationship between GenAI use and writing self-efficacy, controlling for gender, age, and level of study (Tables 10 and 11). The overall model was not significant, $F(6, 95) = 1.20$, $p = .31$, with an R^2 of .07. The interaction term between GenAI use and trust in GenAI was not significant, $\beta = .05$, $t(95) = 1.43$, $p = .16$, 95% CI [-.02, .12].

These results suggest that the effect of GenAI use on writing self-efficacy does not vary significantly depending on students' level of trust in GenAI. Thus, Hypothesis 2 was not supported.

Therefore, students' trust in GenAI did not alter how their use of GenAI influenced their writing self-efficacy. This may be due to students viewing GenAI more as a productivity tool than a skill-development partner. Even those who highly trust the technology might still rely on it for convenience rather than confidence-building.

Cluster Analysis

A K-means cluster analysis was conducted using three continuous variables: trust in GenAI (1–4 scale), extent of GenAI use (1–10 scale), and writing self-efficacy (1–4 scale).

Based on the hierarchical dendrogram, a three-cluster solution was selected (Tables 12 and 13).

Table 14: Cluster 1 (n = 24, 23.5%) consisted of skeptical low users, characterized by relatively low trust (*M*= 2.53) and minimal use of GenAI (*M* = 3.44). Cluster 2 (n = 36, 35.3%) represented confident heavy users, showing high trust (*M* = 3.21) and frequent use of GenAI (*M* = 8.44). Cluster 3 (n = 42, 41.2%) included moderates, reporting balanced levels of both trust (*M* = 2.79) and use (*M* = 5.78). ANOVA results revealed significant between-cluster differences for trust ($F(2, 99) = 15.15$, $p < .001$) and GenAI use ($F(2, 99) = 314.65$, $p < .001$), but no significant difference for writing self-efficacy ($F(2, 99) = 0.63$, $p = .54$).

These findings suggest that while students can be clearly differentiated by their degree of trust and engagement with GenAI, their overall writing confidence remains consistently moderate-to-high across all groups. Interestingly, even students who frequently used and highly trusted GenAI did not report higher self-efficacy than those who used it minimally. This may indicate that writing confidence is a more stable personal attribute, influenced less by technological reliance and more by individual skill development or prior writing experience. The results also imply that GenAI tools may enhance convenience, but not necessarily foster perceived writing competence.

Demographic Analysis

Table 15: the majority of our respondents were ‘females’ (55), followed by ‘males’ (42), then ‘non-binary’ (3) and ‘Prefer not to say’ (2). Regarding level of study, most were ‘Master’ students (55), followed by ‘Bachelor’ (43), then ‘PhD’ (4).

A one-way ANOVA was conducted to examine whether students at different levels of study differed in their use of GenAI for academic writing, trust in GenAI, and writing

self-efficacy (Tables 16 and 17). The results showed no significant differences across study levels for trust in GenAI, $F(2, 99) = 0.46$, $p = .632$, GenAI use, $F(2, 99) = 0.38$, $p = .682$, or writing self-efficacy, $F(2, 99) = 0.41$, $p = .665$.

These findings suggest that students' level of study (i.e. Bachelor's, Master's, PhD) does not significantly influence their trust in, extent of use, or confidence when writing with GenAI.

The one-way ANOVA was also used to test for differences amongst gender groups (Table 18). The effect of gender on GenAI use was marginally non-significant, $F(3, 98) = 2.65$, $p = .053$; no significant gender differences emerged for writing self-efficacy, $F(3, 98) = 1.89$, $p = .136$, or trust in GenAI, $F(3, 98) = 1.14$, $p = .338$. Hence, these findings show that students' gender does not significantly influence their trust in, extent of use, or confidence when writing with GenAI.

However, a trend did emerge for the means of each variable when it came to gender. Table 19: Male participants reported the highest means across all three variables—GenAI use ($M = 6.83$, $SD = 1.81$), writing self-efficacy ($M = 3.07$, $SD = 0.44$) and trust ($M = 2.91$, $SD = 0.60$) whereas non-binary respondents reported the lowest means overall. Although the aforementioned gender differences were not statistically significant, the consistent pattern of higher male means may warrant further analysis.

Implications & Take-aways

Theoretical Implications

This study extends Bandura's self-efficacy theory into the complex and dynamic context of GenAI in academic writing. Our findings challenge the assumption that increased GenAI use inherently leads to higher writing self-efficacy. Instead, the results reinforce that self-efficacy is fundamentally rooted in mastery experiences, reflective practice, and authentic engagement, which are core tenets of Bandura's framework, even as new technologies emerge. The lack of a significant relationship between GenAI use or trust and writing self-efficacy suggests that technology alone does not substitute for the deeper psychological processes that underpin confidence and skill development. This highlights a key research gap: the need to further explore how self-efficacy adapts in rapidly evolving, technology-rich learning environments, and how human agency interacts with AI mediation in shaping academic outcomes.

Practical Implications for Educators

For educators, these findings underscore the importance of integrating GenAI thoughtfully into writing instruction. GenAI should be positioned as a tool to support, rather than replace critical engagement and independent skill development. Instructional strategies should encourage students to actively integrate GenAI outputs, encouraging feedback and drafting cycles. AI literacy programs and reflective practices such as maintaining journals or portfolios can help students develop both technological competence and authentic writing confidence. Classroom activities that compare human and AI-generated texts can further promote

discernment and prevent overreliance, ensuring that trust in GenAI functions as an enabler of learning rather than a source of dependency.

Educational Recommendations

For students with "low trust × low usage", it is necessary to build confidence and basic abilities. Instructions should focus on building foundational AI literacy and demonstrating how GenAI can be leveraged as a supportive tool; e.g. teach students the following skills (Prompt design, AI output quality assessment, critical reading of AI text, and so on). Let students compare: the text generated by AI and their own text, the logical loopholes of AI and their own blind spots. Cultivate students' ability to distinguish and critical thinking. Also, include introductory workshops, hands-on tutorials, and guided practice sessions that demystify GenAI technologies. By building familiarity and confidence, educators can help these students overcome apprehension and recognize the potential benefits of GenAI for academic writing.

For students with "high trust × high usage", reduce dependence and enhance critical thinking. Educators should emphasize critical engagement, encouraging students to move beyond content generation to evaluation, editing, integration, and reflection. This includes establishing operational "AI usage norms and boundaries", clearly defining which stages can utilize AI (such as brainstorming, structural suggestions) and which must be completed by students (such as argumentation logic, data interpretation). Incorporate AI-assisted writing into the "reflection mechanism", and require students to fill out a reflection after each use of GenAI: What has the AI helped, what have they done, and how will they improve next time. Assignments can be designed to require students to compare GenAI outputs with their own drafts, analyze strengths

and weaknesses, and reflect on the revision process. This approach not only cultivates higher-order thinking skills but also guards against overreliance on technology.

Educational interventions should be designed to guide students through iterative writing processes, ensuring that GenAI serves as a catalyst for deeper learning rather than a shortcut. Collaborative activities, peer review, and scaffolded feedback can further reinforce independent skill development. Ultimately, the goal is to integrate GenAI in a way that enhances students' agency, critical thinking, and long-term writing proficiency, preparing them to navigate an increasingly digital academic landscape.

Limitations and Future Research

This study has several limitations. First, the cross-sectional design restricts the ability to draw causal inferences and does not capture changes in self-efficacy over time as students interact with evolving technologies. Second, reliance on self-reported data may introduce response bias and affect the accuracy of the findings. Third, our use of stringent inclusion criteria—requiring participants to be currently enrolled university students who had used GenAI for academic writing in the past 12 months—ensured relevance to the research questions but may limit the generalizability of results to the broader student population. Additionally, the sample's regional focus further constrains external validity. Finally, the exclusive use of quantitative methods provided breadth but lacked the depth needed to fully understand students' nuanced experiences with GenAI.

Future research should address these limitations by employing longitudinal and mixed-methods designs, such as qualitative interviews and classroom observations, to explore

how self-efficacy and writing practices develop over time with GenAI integration. Expanding the sample to include more diverse educational contexts and broader inclusion criteria will also enhance the applicability of findings.

Conclusion

This study examined the relationships between GenAI use, trust, and writing self-efficacy among university students. While frequent GenAI use was associated with higher trust in the technology, neither GenAI use nor trust significantly influenced writing self-efficacy, nor did trust moderate this relationship. These findings challenge the assumption that technological adoption alone can enhance academic confidence, underscoring the enduring importance of individual experience, reflective practice, and skill development.

However, these findings should be interpreted in light of several methodological limitations, including the cross-sectional design, reliance on self-reported data and a sample drawn from specific regions and disciplines. Addressing these limitations, future research should employ longitudinal or experimental designs, incorporate qualitative methods for deeper insight, and expand sampling to more diverse educational contexts. Such approaches will be important for clarifying causal relationships and enhancing the generalizability of findings.

Ultimately, while GenAI offers valuable support for academic writing, it cannot substitute for the foundational processes that underpin genuine writing growth. Educators and institutions should integrate GenAI thoughtfully, ensuring it complements rather than replaces the development of core academic skills.

(3,989 words)

Declaration on AI Use:

We used Copilot and Chatgpt to improve expression and refine our assignment. We are responsible for the content and quality of the submitted work.

References

Amoozadeh, M., Daniels, D., Chen, S., Nam, D., Kumar, A., Hilton, M., ... & Ragavan, S. S. (2023, August). Towards characterizing trust in generative artificial intelligence among students. In *Proceedings of the 2023 ACM Conference on International Computing Education Research-Volume 2* (pp. 3-4).

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychol Rev. 84*:191–215. doi: 10.1037/0033-295X.84.2.191

Bandura, A. (1997). *Self-efficacy: The exercise of control* (Vol. 11). Freeman.

Chan, C. K., & Hu, W. (17 July, 2023). *Students' voices on generative AI: perceptions, benefits, and challenges in higher education.* Retrieved from SpringerOpen: https://educationaltechnologyjournal.springeropen.com/articles/10.1186/s41239-023-00411-8

CNA. (2024a, March 12). *NUS, NTU issue guidelines on AI-assisted academic work.* https://www.channelnewsasia.com

CNA. (2024b, May 2). *NTU student gets zero mark for undisclosed AI use.* https://www.channelnewsasia.com

Daniel J. McAllister. Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal, 38*(1):24–59, 1995.

De Duro, E. S., Veltri, G. A., Golino, H., & Stella, M. (2025). Measuring and identifying factors of individuals' trust in Large Language Models. *arXiv preprint arXiv:*2502.21028.

DeVellis, R. F., & Thorpe, C. T. (2021). *Scale development: Theory and applications.* Sage publications.

Han, Y. (2025). Beyond the algorithm: Reconciling generative AI and human agency in academic writing education. *International Journal of Learning and Teaching*, 11 (1), 39–42. https://doi.org/10.18178/ijlt.11.1.39-42

Hysaj, A., Dean, B. A., & Freeman, M. (2025). Exploring the purposes and uses of generative artificial intelligence tools in academic writing for multicultural students. *Higher Education Research & Development*, *44*(7), 1686–1700. https://doi.org/10.1080/07294360.2025.2488862

Jensen, T. W., & Jensen, S. W. (2025). AI literacy in the context of working with sources: Pitfalls and possibilities of generative AI models in academic writing. Journal of Academic Writing, 15 (S2), 1–12. https://publications.coventry.ac.uk/index.php/joaw/article/view/1224

Johns, Robert (2005): One size doesn′t fit all: Selecting response scales for attitude items, *Journal of Elections, Public Opinion and Parties, 15*(2), 237‑64 (on neutral options).

Joshi, Ankur & Kale, Saket & Chandel, Satish & Pal, Dinesh. (2015). Likert Scale: Explored and Explained. *British Journal of Applied Science & Technology. 7*. 396-403. 10.9734/BJAST/2015/14975.

Lee, J. D., & See, K. A. (2004). Trust in Automation: Designing for Appropriate Reliance. *Human Factors: The Journal of the Human Factors and Ergonomics Society, 46*(1), 50-80. https://doi.org/10.1518/hfes.46.1.50_30392

Mitchell, K., Harrigan, T., Stefansson, T., & Setlack, H. (2017). Exploring Self-Efficacy and Anxiety in First-Year Nursing Students Enrolled in a Discipline-Specific Scholarly Writing Course. *Quality Advancement in Nursing Education. 3.* 10.17483/2368-6669.1084.

Mitchell, K. M., & McMillan, D. E. (2018). A curriculum-wide assessment of writing self-efficacy in a baccalaureate nursing program. *Nurse education today*, *70*, 20–27. https://doi.org/10.1016/j.nedt.2018.08.003

Mitchell, K.M., Zumbrunn, S., Berry, D., & Demczuk, L. (2023). Writing Self-Efficacy in Postsecondary Students: a Scoping Review. *Educ Psychol Rev* 35, 82. https://doi.org/10.1007/s10648-023-09798-2

Mitchell, Kim & McMillan, Diana & Lobchuk, Michelle & Nickel, Nathan & Rabbani, Rasheda & Li, Johnson. (2021). Development and validation of the Situated Academic Writing Self-Efficacy Scale (SAWSES). *Assessing Writing. 48*. 100524. 10.1016/j.asw.2021.100524.

Muir, B. M., & Moray, N. (1996). Trust in automation. Part II. Experimental studies of trust and human intervention in a process control simulation. *Ergonomics*, 39(3), 429–460. https://doi.org/10.1080/00140139608964474

OpenAI. (2025). *Usage and adoption report 2025.* https://openai.com/research

Pajares, F. (2003). Self-efficacy beliefs, motivation, and achievement in writing: A review of the literature. *Reading & Writing Quarterly: Overcoming Learning Difficulties, 19*(2), 139–158. https://doi.org/10.1080/10573560308222

Parasuraman, R., & Riley, V. (1997). Humans and Automation: Use, Misuse, Disuse, Abuse. *Human Factors: The Journal of the Human Factors and Ergonomics Society, 39*(2), 230-253. https://doi.org/10.1518/001872097778543886

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual review of psychology, 63*, 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Rodriguez, N. (2025). Academic Writing in the Age of Artificial Intelligence: A Study on Efficiency and Authenticity in Higher Education. *International Journal of Advanced Multidisciplinary Research and Studies. 5*. 1750-1756.

Rosen, L. D., Whaling, K., Carrier, L. M., Cheever, N. A., & Rokkum, J. (2013). The Media and Technology Usage and Attitudes Scale: An empirical investigation. *Computers in human behavior*, *29*(6), 2501–2511. https://doi.org/10.1016/j.chb.2013.06.006

Wang, C. (2025). Exploring Students' Generative AI-Assisted Writing Processes: Perceptions and Experiences from Native and Nonnative English Speakers. *Tech Know Learn 30*, 1825–1846. https://doi.org/10.1007/s10758-024-09744-3

Wang, F., Li, N., Cheung, A. C., & Wong, G. K. (August, 2025). *In GenAI we trust: An investigation of university students' reliance on and resistance to generative AI in*

language learning. Retrieved from ResearchGate: https://www.researchgate.net/publication/394767828_In_GenAI_we_trust_An_investigation_of_university_students'_reliance_on_and_resistance_to_generative_AI_in_language_learning

Watermeyer, R., Phipps, L., Lanclos, D., & Knight, C. (2024). Generative AI and the automating of academia. *Postdigital Science and Education*, 6 , 446–466. https://doi.org/10.1007/s42438-023-00440-6

Sousa, A. E., & Cardoso, P. (2025). Use of Generative AI by Higher Education Students. *Electronics*, *14*(7), 1258. https://doi.org/10.3390/electronics14071258

Stanford, J. (2025). How disruptive is AI in students' academic writing in higher education? *Studies in Technology Enhanced Learning*, *4*(1). https://doi.org/10.21428/8c225f6e.b1d05ed3

Thorne, S. (2024). Understanding the interplay between trust, reliability, and human factors in the age of generative ai. *International Journal of Simulation--Systems, Science & Technology*, *25*(1).

Appendix A

Participant Information Sheet (PIS) & Consent Form (CF)

Participant Information Sheet & Consent 参与者信息说明与同意书

1. Research Question: To what extent does the use of Generative AI for academic writing influence university students' writing self-efficacy, and how is this relationship moderated by their level of trust in Generative AI? 研究问题：生成式人工智能（GenAI）的学术写作使用在多大程度上影响大学生的写作自我效能？这种关系又如何受到信任程度的调节？

2. Purpose: This research seeks to understand how GenAI use influences writing self-efficacy and how this relationship is moderated by trust. 研究目的：探讨GenAI使用、写作自我效能与信任的关系。

3. Participants: University students who have used GenAI for academic writing in the past 12 months. 参与者：过去12个月内使用过GenAI进行学术写作的大学生。

4. Duration: ~10 minutes for 30 MCQ-style questions. 时间：约10分钟共30道选择题。

5. Period: October–November 2025. 研究周期：2025年10月至11月。

6. Procedure: Data will be aggregated and analysed anonymously. 研究程序：数据将匿名汇总与分析。

7. Privacy: No personal data collected. 隐私：不收集个人信息。

8. Risks: NIL; participants may withdraw anytime. 无；参与者可随时退出。

9. Reimbursement: None. 酬谢：无。

10. Benefits: None direct; results may inform future GenAI-learning integration. 益处：无直接益处，但结果可能促进未来GenAI与高等教育的结合。

11. Voluntary: Yes. 自愿参与：是。

12. Contact: Lim Jun Yi Keith (lim.keith@u.nus.edu). 联系方式：lim.keith@u.nus.edu

13. Informed Consent: I acknowledge I have read the information above, understand its contents, and consent to participate voluntarily. I may withdraw anytime and will not receive or claim any monetary or commercial benefits from this study.

知情同意：本人已阅读上述说明，理解内容并自愿参与，可随时退出，不享有研究所产生的任何金钱或商业利益。

Appendix B

TILLMI

Item No.	Item Statement
1	I would feel a sense of dismay if my interactions with an LLM were suddenly disrupted or halted
2	If I share my wellbeing concerns with LLMs, I know these agents will respond constructively and caringly
3	I invest plenty of time developing and improving my prompts to interact with LLMs.
4	I can rely on LLMs not to make my job more difficult by careless work.
5	Despite trusting LLMs' results overall, the last word is always mine
6	I tend to trust LLMs more than other people.

Appendix C

Self-Efficacy Scale for Academic Writing (SESAW)

Item No.	Item Statement
1	I feel I have the skills to write a scholarly paper.
2	Researching a topic comes easily to me.
3	If I encounter a problem with my chosen topic, I can find strategies to overcome my difficulties.
4	I am confident that I can write clearly so that others will understand my meaning
5	I am confident in my ability to understand the topic I've chosen.
6	I have the skills to choose appropriate research materials to support my ideas on my topic.
7	I am confident that I will understand the content of the research articles I find on my topic.
8	With persistence, I can write about anything asked of me.
9	Even when writing feels hard, I know I can complete the task on time.
10	I will remain calm and in control through the writing process.

Appendix D

New Media and Technology Usage and Attitudes Scale (MTUAS)

Usage Subscales (44 items across 11 categories)

Subscale	Item No.	Item Statement
E-mailing	1	Send, receive and read e-mails (not including spam or junk mail).
E-mailing	2	Check your personal e-mail.
E-mailing	3	Check your work or school e-mail.
E-mailing	4	Send or receive files via e-mail.
Text Messaging	5	Send and receive text messages on a mobile phone.
Phone Calling	6	Make and receive mobile phone calls.
Text Messaging	7	Check for text messages on a mobile phone.
Phone Calling	8	Check for voice calls on a mobile phone.
Smartphone Usage	9	Read e-mail on a mobile phone.
Smartphone Usage	10	Get directions or use GPS on a mobile phone.
Smartphone Usage	11	Browse the web on a mobile phone.
Smartphone Usage	12	Listen to music on a mobile phone.
Smartphone Usage	13	Take pictures using a mobile phone.
Smartphone Usage	14	Check the news on a mobile phone.
Smartphone Usage	15	Record video on a mobile phone.
Smartphone Usage	16	Use apps (for any purpose) on a mobile phone.

Smartphone Usage	17	Search for information with a mobile phone.
Text Messaging	18	Use your mobile phone during class or work time.
TV Viewing	19	Watch TV shows, movies, etc. on a TV set.
TV Viewing	20	Watch video clips on a TV set.
Media Sharing	21	Watch TV shows, movies, etc. on a computer.
Media Sharing	22	Watch video clips on a computer.
Media Sharing	23	Download media files from other people on a computer.
Media Sharing	24	Share your own media files on a computer.
Internet Searching	25	Search the Internet for news on any device.
Internet Searching	26	Search the Internet for information on any device.
Internet Searching	27	Search the Internet for videos on any device.
Internet Searching	28	Search the Internet for images or photos on any device.
Video Gaming	29	Play games on a computer, video game console or smartphone by yourself.
Video Gaming	30	Play games on a computer, video game console or smartphone with other people in the same room.

Video Gaming	31	Play games on a computer, video game console or smartphone with other people online.
General Social Media Usage	32	Check your Facebook page or other social networks.
General Social Media Usage	33	Check your Facebook page from your smartphone.
General Social Media Usage	34	Check Facebook at work or school.
General Social Media Usage	35	Post status updates.
General Social Media Usage	36	Post photos.
General Social Media Usage	37	Browse profiles and photos.
General Social Media Usage	38	Read postings.
General Social Media Usage	39	Comment on postings, status updates, photos, etc.
General Social Media Usage	40	Click 'Like' to a posting, photo, etc.
Facebook Friendships	41	How many friends do you have on Facebook?
Facebook Friendships	42	How many of your Facebook friends do you know in person?
Online Friendships	43	How many people have you met online that you have never met in person?
Online Friendships	44	How many people do you regularly interact with online that you have never met in person?

Attitudes Subscales (16 items across 4 categories)

Subscale	Item No.	Item Statement
Positive Attitudes	1	I feel it is important to be able to find any information whenever I want online.
Positive Attitudes	2	I feel it is important to be able to access the Internet any time I want.

Positive Attitudes	3	I think it is important to keep up with the latest trends in technology.
Anxiety/Dependence	4	I get anxious when I don't have my cell phone.
Anxiety/Dependence	5	I get anxious when I don't have the Internet available to me.
Anxiety/Dependence	6	I am dependent on my technology.
Positive Attitudes	7	Technology will provide solutions to many of our problems.
Positive Attitudes	8	With technology anything is possible.
Positive Attitudes	9	I feel that I get more accomplished because of technology.
Negative Attitudes	10	New technology makes people waste too much time.
Negative Attitudes	11	New technology makes life more complicated.
Negative Attitudes	12	New technology makes people more isolated.
Preference for Task Switching	13	I prefer to work on several projects in a day, rather than completing one project and then switching to another.
Preference for Task Switching	14	When doing a number of assignments, I like to switch back and forth between them rather than do one at a time.
Preference for Task Switching	15	I like to finish one task completely before focusing on anything else. (Reverse scored)
Preference for Task Switching	16	When I have a task to complete, I like to break it up by switching to other tasks intermittently.

Appendix E
Adapted Questionnaire

Demographics 人口统计

Please answer the following demographic questions. **请**回答以下人口**统计问题**。

Item No.	Item Statement
1	Are you a university student? 您目前是大学生**吗**？
2	Do you use GenAI for academic writing (e.g. brainstorming, researching, writing aid)? 您是否使用生成式人工智能（如ChatGPT、Gemini、Claude等）来**辅**助学**术**写作？
3	What is your gender? 您的性**别**是？
4	What is your level of study? 你的学**习阶**段是什么？
5	What is your age? 您的年**龄**是？

Trust in GenAI 生成式人工智能信任量表

For Q6-Q11, please rate the items on a scale of 1 to 4 on how much you agree with the statement: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree

对于第6至第11题，请根据您对陈述的同意程度，按照 1 到 4 的量表进行评分：1 = 非常不同意，2 = 不同意，3 = 同意，4 = 非常同意。

Item No.	Item Statement
6	I would feel a sense of dismay if I could no longer use GenAI for my academic writing. 如果我不能再使用生成式人工智能进行学术写作，我会感到失望。
7	If I share my writing or wellbeing concerns with GenAI, I believe they would respond constructively and supportively. 如果我向生成式人工智能表达写作或学习上的困扰，我相信它会给予建设性和支持性的回应。
8	I invest time in improving my prompts to interact effectively with GenAI for writing tasks. 我会花时间改进提示词，以便更有效地与生成式人工智能互动完成写作任务。
9	I can rely on GenAI not to make my writing process more difficult through careless or inaccurate output. 我相信生成式人工智能不会因粗心或不准确的输出而使我的写作过程更困难。
10	I tend to trust GenAI more than feedback from other people. 与他人的反馈相比，我更倾向于信任生成式人工智能。
11	Despite trusting GenAI's results overall, the last word is always mine. 尽管我总体上信任生成式人工智能的结果，但最终决定权仍在我自己手中。

Extent of GenAI Use 生成式人工智能使用频率

For Q12-Q20, please rate the items on a scale of 1 to 10 对于问题12至20，请按1至10分进行评分。

1 = Never, 2 = Once a month, 3 = Several times a month, 4 = Once a week, 5 = Several times a week, 6 = Once a day, 7 = Several times a day, 8 = Once an hour, 9 = Several times an hour, and 10 = All the time.

1 = 从不，2 = 每月一次，3 = 每月数次，4 = 每周一次，5 = 每周数次，6 = 每日一次，7 = 每日数次，8 = 每小时一次，9 = 每小时数次，10 = 持续不断。。

Item No.	Item Statement
12	Use a GenAI tool (e.g., ChatGPT, Gemini, Claude) for any part of your academic writing process. 在学术写作过程中使用生成式人工智能工具完成任何部分。
13	Use a GenAI tool to look up information or ideas relevant to your academic writing assignments. 使用生成式人工智能工具查找与学术写作作业相关的信息或想法。
14	Use a GenAI tool to get updates or current examples for your academic writing topics. 使用生成式人工智能工具获取与学术写作主题相关的最新信息或实例。
15	Use a GenAI tool to gather information or content for academic writing tasks. 使用生成式人工智能工具为学术写作任务收集资料或内容。
16	Use a GenAI tool to generate or find explanatory materials (e.g., examples, tutorials) to support your writing. 使用生成式人工智能工具生成或查找解释性材料以支持写作。

17	Use a GenAI tool to create or find illustrations, figures, or concept maps for academic assignments. 使用生成式人工智能工具为学术作业创建或查找插图、图表或概念图。
18	Use a GenAI tool during class or study sessions to help with academic writing tasks. 在课堂或学习过程中使用生成式人工智能工具辅助学术写作任务。
19	Open a GenAI tool to start or continue an academic writing session. 打开生成式人工智能工具以开始或继续学术写作。
20	Read responses or outputs produced by a GenAI tool for your academic writing. 阅读生成式人工智能工具为您的学术写作生成的回答或输出内容。

Self-Efficacy for Academic Writing 学术写作自我效能感

For Q21-Q30, please rate the items on a scale of 1 to 4 on how much you agree with the statement: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree 请对第21-30题进行评分, 根据您对陈述的认同程度在1至4分之间作答:1 = 非常不同意, 2 = 不同意, 3 = 同意, 4 = 非常同意。

Item No.	Item Statement
21	I feel I have the skills to write a scholarly paper. 我**认为**自己具**备**撰写学**术论**文的技能。
22	Researching a topic comes easily to me. 我**觉**得自己能**轻**松地**进**行主**题**研究。
23	If I encounter a problem with my chosen topic, I can find strategies to overcome my difficulties. 如果在所**选**主**题**上遇到困**难**, 我能**够**找到解决**问题**的策略。
24	I am confident that I can write clearly so that others will understand my meaning. 我有信心写得清楚明白，**让**他人理解我的意思。
25	I am confident in my ability to understand the topic I've chosen. 我**对**自己理解所**选**主**题**的能力充**满**信心。
26	I have the skills to choose appropriate research materials to support my ideas on my topic. 我具**备选择**合适研究**资**料以支持自己**观**点的技能。
27	I am confident that I will understand the content of the research articles I find on my topic. 我有信心理解与我研究主**题**相关的文献内容。
28	With persistence, I can write about anything asked of me. 只要**坚**持，我就能写好任何被要求的主**题**。
29	Even when writing feels hard, I know I can complete the task on time. 即使写作很困**难**，我也知道自己能按**时**完成任**务**。

30	I will remain calm and in control through the writing process. 我能在整个写作过程中保持冷静和掌控感。

Appendix F

Tables

Table 1

Subscales for the new MTUAS

Subscale	Mean	*SD*	*Skewness*	Alpha
Usage subscales				
Smartphone usage[a]	5.00	2.61	.01	.93
General Facebook usage[a]	4.82	2.21	.08	.97
Internet searching[a]	5.64	2.73	.01	.91
E-mailing[a]	5.89	2.37	−.23	.91
Media sharing[a]	3.76	2.29	.97	.84
Text messaging[a]	7.21	2.41	−.85	.84
Video gaming[a]	3.28	2.33	1.13	.83
Online friendships[b]	1.89	1.17	2.45	.83
Facebook friendships[b]	4.92	1.94	.24	.96
Phone calling[a]	6.47	2.06	−.28	.71
Television viewing[a]	5.33	2.42	.42	.61
Attitudes subscales				
Positive[c]	3.66	.84	−.70	.87
Anxiety and dependence[d]	3.15	1.09	−.23	.83
Negative[e]	3.35	.92	−.23	.80
Multitasking preference[f]	3.25	.92	−.05	.85

Table 2

Reliability Analysis (Cronbach's Alpha) for Adapted 6-item TILLMI Scale

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.505	.489	6

Item Statistics

	Mean	Std. Deviation	N
Q6: I would feel a sense of dismay if I could no longer use GenAI for my academic writing. 如果我不能再使用生成式人工智能进行学术写作，我会感到失望。	3.21	.749	102
Q7: If I share my writing or wellbeing concerns with GenAI, I believe they would respond constructively and supportively. 如果我向生成式人工智能表达写作或学习上的困扰，我相信它会给予建设性和支持性的回应。	3.17	.582	102
Q8: I invest time in improving my prompts to interact effectively with GenAI for writing tasks. 我会花时间改进提示词，以便更有效地与生成式人工智能互动完成写作任务。	3.09	.676	102
Q9: I can rely on GenAI not to make my writing process more difficult through careless or inaccurate output. 我相信生成式人工智能不会因粗心或不准确的输出而使我的写作过程更困难。	2.35	.816	102
Q10: I tend to trust GenAI more than feedback from other people. 与他人的反馈相比，我更倾向于信任生成式人工智能。	2.25	.817	102
Q11: Despite trusting GenAI's results overall, the last word is always mine. 尽管我总体上信任生成式人工智能的结果，但最终决定权仍在我自己手中。	3.72	.453	102

Table 3

Reliability Analysis (Item-Total Statistics) for Adapted 6-item TILLMI Scale

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q6: I would feel a sense of dismay if I could no longer use GenAI for my academic writing. 如果我不能再使用生成式人工智能进行学术写作，我会感到失望。	14.58	3.217	.456	.343
Q7: If I share my writing or wellbeing concerns with GenAI, I believe they would respond constructively and supportively. 如果我向生成式人工智能表达写作或学习上的困扰，我相信它会给予建设性和支持性的回应。	14.62	3.783	.389	.405
Q8: I invest time in improving my prompts to interact effectively with GenAI for writing tasks. 我会花时间改进提示词，以便更有效地与生成式人工智能互动完成写作任务。	14.70	4.035	.188	.495
Q9: I can rely on GenAI not to make my writing process more difficult through careless or inaccurate output. 我相信生成式人工智能不会因粗心或不准确的输出而使我的写作过程更困难。	15.43	4.010	.100	.555
Q10: I tend to trust GenAI more than feedback from other people. 与他人的反馈相比，我更倾向于信任生成式人工智能。	15.53	3.103	.428	.352
Q11: Despite trusting GenAI's results overall, the last word is always mine. 尽管我总体上信任生成式人工智能的结果，但最终决定权仍在我自己手中。	14.07	4.758	.020	.543

Table 4

Reliability Analysis for Adapted TILLMI Scale (Qs 6,7,8,9,10,11_rev)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.494	.470	6

Item Statistics

	Mean	Std. Deviation	N
Q6: I would feel a sense of dismay if I could no longer use GenAI for my academic writing. 如果我不能再使用生成式人工智能进行学术写作，我会感到失望。	3.2059	.74910	102
Q7: If I share my writing or wellbeing concerns with GenAI, I believe they would respond constructively and supportively. 如果我向生成式人工智能表达写作或学习上的困扰，我相信它会给予建设性和支持性的回应。	3.1667	.58162	102
Q8: I invest time in improving my prompts to interact effectively with GenAI for writing tasks. 我会花时间改进提示词，以便更有效地与生成式人工智能互动完成写作任务。	3.0882	.67638	102
Q9: I can rely on GenAI not to make my writing process more difficult through careless or inaccurate output. 我相信生成式人工智能不会因粗心或不准确的输出而使我的写作过程更困难。	2.3529	.81626	102
Q10: I tend to trust GenAI more than feedback from other people. 与他人的反馈相比，我更倾向于信任生成式人工智能。	2.2549	.81673	102
Q11_rev	1.2843	.45331	102

Table 5

Reliability Analysis for Adapted TILLMI Scale (Qs 6,7,10)

Reliability Statistics

Cronbach's Alpha	N of Items
.658	3

Item Statistics

	Mean	Std. Deviation	N
Q6: I would feel a sense of dismay if I could no longer use GenAI for my academic writing. 如果我不能再使用生成式人工智能进行学术写作，我会感到失望。	3.21	.749	102
Q7: If I share my writing or wellbeing concerns with GenAI, I believe they would respond constructively and supportively. 如果我向生成式人工智能表达写作或学习上的困扰，我相信它会给予建设性和支持性的回应。	3.17	.582	102
Q10: I tend to trust GenAI more than feedback from other people. 与他人的反馈相比，我更倾向于信任生成式人工智能。	2.25	.817	102

Table 6

Cronbach's Alpha for Adapted 9-item New MTUAS Scale

Reliability Statistics

Cronbach's Alpha	N of Items
.913	9

Table 7

Cronbach's Alpha for SESAW Scale

Reliability Statistics

Cronbach's Alpha	N of Items
.851	10

Table 8

Correlations Between Variables

Correlations

Descriptive Statistics

	Mean	Std. Deviation	N
trust_mean	2.8758	.55683	102
GenAIUse_mean	6.1678	2.06061	102
writingefficact_mean	3.0118	.41988	102

Correlations

		trust_mean	GenAIUse_mean	writingefficact_mean
trust_mean	Pearson Correlation	1	.527**	-.022
	Sig. (2-tailed)		<.001	.827
	N	102	102	102
GenAIUse_mean	Pearson Correlation	.527**	1	.096
	Sig. (2-tailed)	<.001		.335
	N	102	102	102
writingefficact_mean	Pearson Correlation	-.022	.096	1
	Sig. (2-tailed)	.827	.335	
	N	102	102	102

**. Correlation is significant at the 0.01 level (2-tailed).

Pearson Correlations

Highly Positive: *(None)*

Positive: *(trust_mean <---> GenAIUse_mean), (GenAIUse_mean <---> writingefficact_mean)*

No Linear Correlation: *(None)*

Negative: *(trust_mean <---> writingefficact_mean)*

Highly Negative: *(None)*

Note: Curated Help is calculated based on actual cell values, not the formatted values.

Table 9

Hierarchical Linear Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.215[a]	.046	.017	.41628	.046	1.584	3	98	.198
2	.218[b]	.048	.008	.41810	.001	.150	1	97	.699

a. Predictors: (Constant), Q5: What is your age?
您的年龄是? , Q3: What is your gender?
您的性别是? , Q4: What is your level of study? 你的学习阶段是什么?

b. Predictors: (Constant), Q5: What is your age?
您的年龄是? , Q3: What is your gender?
您的性别是? , Q4: What is your level of study? 你的学习阶段是什么?, GenAIUse_mean

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.823	3	.274	1.584	.198[b]
	Residual	16.983	98	.173		
	Total	17.806	101			
2	Regression	.850	4	.212	1.215	.309[c]
	Residual	16.956	97	.175		
	Total	17.806	101			

a. Dependent Variable: writingefficacy_mean

b. Predictors: (Constant), Q5: What is your age?
您的年龄是? , Q3: What is your gender?
您的性别是? , Q4: What is your level of study? 你的学习阶段是什么?

c. Predictors: (Constant), Q5: What is your age?
您的年龄是? , Q3: What is your gender?
您的性别是? , Q4: What is your level of study? 你的学习阶段是什么?,
GenAIUse_mean

Table 10

Moderation Regression

```
  Model: 1
      Y: writinge
      X: GenAIUse
      W: trust_me

Covariates:
 Q3       Q5       Q4

Sample
Size:  102

Variable descriptive statistics
       writinge   GenAIUse   trust_me         Q3         Q5         Q4
Mean     3.0118     6.1678     2.8758     1.6569     1.2549     1.6176
SD        .4199     2.0606      .5568      .6371      .6992      .5637
Min      1.8000     1.3333     1.3333     1.0000     1.0000     1.0000
Max      4.0000    10.0000     4.0000     4.0000     5.0000     3.0000

Variable intercorrelations (Pearson r)
           writinge   GenAIUse   trust_me         Q3         Q5         Q4
writinge     1.0000      .0964     -.0219     -.1994     -.0440     -.0519
GenAIUse      .0964     1.0000      .5268     -.2381     -.1583     -.0323
trust_me     -.0219      .5268     1.0000      .0089     -.1468      .0891
Q3           -.1994     -.2381      .0089     1.0000     -.1129     -.0381
Q5           -.0440     -.1583     -.1468     -.1129     1.0000      .2498
Q4           -.0519     -.0323      .0891     -.0381      .2498     1.0000
```

Table 11

Moderation Regression (Model Summary)

```
OUTCOME VARIABLE:
 writinge

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .2655      .0705      .1742     1.2003     6.0000    95.0000      .3129

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.3107      .1867    17.7340      .0000     2.9401     3.6814
GenAIUse      .0173      .0251      .6881      .4931     -.0325      .0670
trust_me     -.0613      .0905     -.6775      .4998     -.2410      .1184
Int_1         .0495      .0347     1.4255      .1573     -.0194      .1184
Q3           -.1214      .0688    -1.7633      .0811     -.2581      .0153
Q5           -.0503      .0643     -.7817      .4364     -.1780      .0774
Q4           -.0398      .0774     -.5138      .6086     -.1935      .1139

Product terms key:
 Int_1    :        GenAIUse x        trust_me

Covariance matrix of regression parameter estimates:
           constant   GenAIUse   trust_me      Int_1         Q3         Q5         Q4
constant      .0349     -.0013      .0026      .0002     -.0088     -.0040     -.0084
GenAIUse     -.0013      .0006     -.0012      .0000      .0005      .0002      .0001
trust_me      .0026     -.0012      .0082     -.0003     -.0010      .0006     -.0010
Int_1         .0002      .0000     -.0003      .0012      .0001     -.0004     -.0003
Q3           -.0088      .0005     -.0010      .0001      .0047      .0006      .0002
Q5           -.0040      .0002      .0006     -.0004      .0006      .0041     -.0011
Q4           -.0084      .0001     -.0010     -.0003      .0002     -.0011      .0060

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0199     2.0321     1.0000    95.0000      .1573
----------
    Focal predict: GenAIUse (X)
          Mod var: trust_me (W)
```

Table 12

Cluster Regression

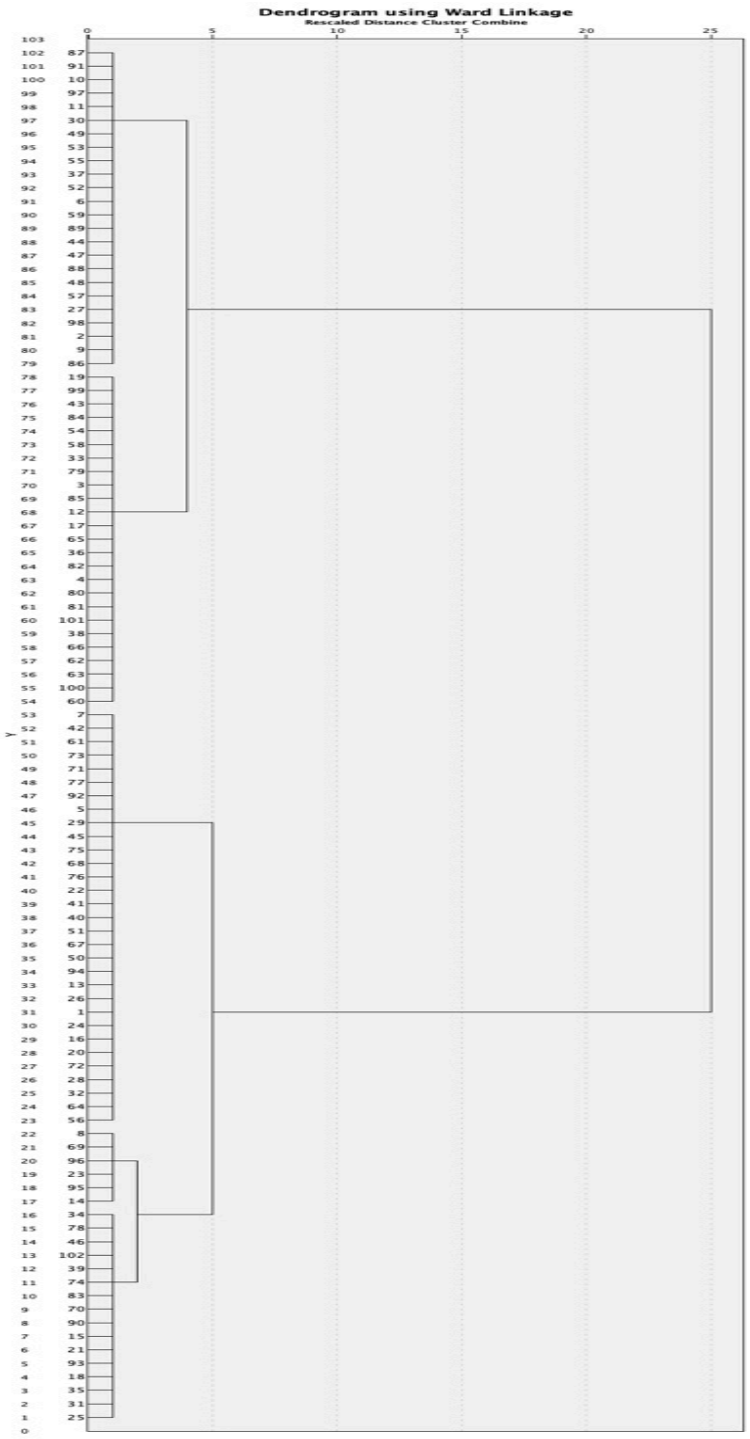

Table 13

Cluster Regression (Number of Clusters)

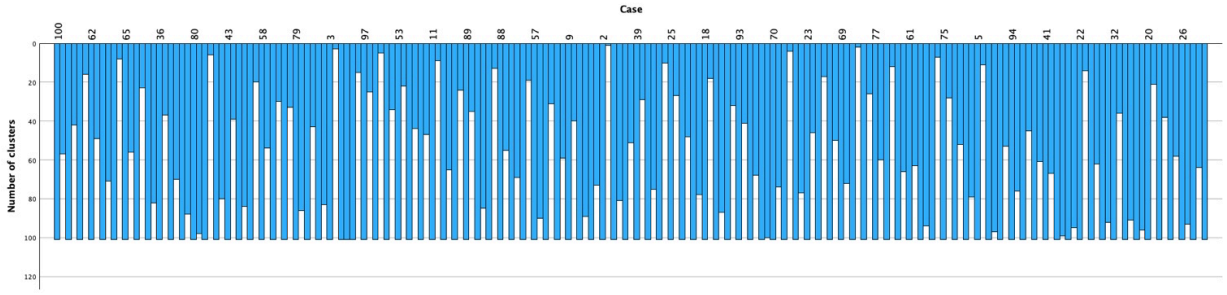

Table 14

Cluster Regression Analysis

Final Cluster Centers

	Cluster 1	Cluster 2	Cluster 3
Q1: Are you a university student? 您目前是大学生吗?	1	1	1
trust_mean	2.53	3.21	2.79
GenAIUse_mean	3.44	8.44	5.78
writingefficact_mean	2.95	2.99	3.06

Distances between Final Cluster Centers

Cluster	1	2	3
1		5.044	2.348
2	5.044		2.701
3	2.348	2.701	

ANOVA

	Cluster Mean Square	Cluster df	Error Mean Square	Error df	F	Sig.
Q1: Are you a university student? 您目前是大学生吗?	.000	2	.000	99	.	.
trust_mean	3.670	2	.242	99	15.154	<.001
GenAIUse_mean	185.281	2	.589	99	314.652	<.001
writingefficact_mean	.111	2	.178	99	.625	.537

The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

Number of Cases in each Cluster

Cluster	1	24.000
	2	36.000
	3	42.000
Valid		102.000
Missing		.000

Table 15

Gender

Q3: What is your gender?
您的性别是？

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male / 男	42	41.2	41.2	41.2
	Female / 女	55	53.9	53.9	95.1
	Non-binary / 非二元	3	2.9	2.9	98.0
	Prefer not to say / 不愿透露	2	2.0	2.0	100.0
	Total	102	100.0	100.0	

Table 16

ANOVA

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
trust_mean	Between Groups	.289	2	.145	.462	.632
	Within Groups	31.027	99	.313		
	Total	31.316	101			
GenAIUse_mean	Between Groups	3.300	2	1.650	.384	.682
	Within Groups	425.558	99	4.299		
	Total	428.858	101			
writingefficact_mean	Between Groups	.146	2	.073	.410	.665
	Within Groups	17.660	99	.178		
	Total	17.806	101			

Table 17

Level of Study Descriptives

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
trust_mean	Bachelor / 学士	43	2.8295	.52640	.08028	2.6675	2.9915	1.33	4.00
	Master / 硕士	55	2.8970	.57332	.07731	2.7420	3.0520	1.67	4.00
	PhD / 博士	4	3.0833	.73912	.36956	1.9072	4.2594	2.33	4.00
	Total	102	2.8758	.55683	.05513	2.7664	2.9852	1.33	4.00
GenAIUse_mean	Bachelor / 学士	43	6.3075	2.01155	.30676	5.6884	6.9266	1.33	10.00
	Master / 硕士	55	6.0182	2.03195	.27399	5.4689	6.5675	1.78	10.00
	PhD / 博士	4	6.7222	3.29921	1.64960	1.4724	11.9720	1.89	8.89
	Total	102	6.1678	2.06061	.20403	5.7630	6.5725	1.33	10.00
writingefficact_mean	Bachelor / 学士	43	3.0233	.37470	.05714	2.9079	3.1386	2.20	4.00
	Master / 硕士	55	3.0164	.45083	.06079	2.8945	3.1382	1.80	4.00
	PhD / 博士	4	2.8250	.51235	.25617	2.0097	3.6403	2.10	3.30
	Total	102	3.0118	.41988	.04157	2.9293	3.0942	1.80	4.00

Table 18

ANOVA of Variables

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
GENAI_USE	Between Groups	32.207	3	10.736	2.652	.053
	Within Groups	396.651	98	4.047		
	Total	428.858	101			
WRITING_SELF_EFFICACY	Between Groups	.974	3	.325	1.891	.136
	Within Groups	16.832	98	.172		
	Total	17.806	101			
TRUST	Between Groups	1.053	3	.351	1.137	.338
	Within Groups	30.263	98	.309		
	Total	31.316	101			

Table 19

Gender Descriptives

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
GENAI_USE	Male / 男	42	6.8307	1.81005	.27930	6.2666	7.3947	3.67	10.00
	Female / 女	55	5.7212	2.15928	.29116	5.1375	6.3049	1.33	10.00
	Non-binary / 非二元	3	5.2222	.29397	.16973	4.4920	5.9525	4.89	5.44
	Prefer not to say / 不愿透露	2	5.9444	3.22126	2.27778	-22.9975	34.8864	3.67	8.22
	Total	102	6.1678	2.06061	.20403	5.7630	6.5725	1.33	10.00
WRITING_SELF_EFFICACY	Male / 男	42	3.0714	.43689	.06741	2.9353	3.2076	2.10	4.00
	Female / 女	55	2.9964	.39061	.05267	2.8908	3.1020	2.20	4.00
	Non-binary / 非二元	3	2.8667	.15275	.08819	2.4872	3.2461	2.70	3.00
	Prefer not to say / 不愿透露	2	2.4000	.84853	.60000	-5.2237	10.0237	1.80	3.00
	Total	102	3.0118	.41988	.04157	2.9293	3.0942	1.80	4.00
TRUST	Male / 男	42	2.9127	.59382	.09163	2.7277	3.0977	1.33	4.00
	Female / 女	55	2.8364	.53623	.07231	2.6914	2.9813	1.67	4.00
	Non-binary / 非二元	3	2.6667	.33333	.19245	1.8386	3.4947	2.33	3.00
	Prefer not to say / 不愿透露	2	3.5000	.23570	.16667	1.3823	5.6177	3.33	3.67
	Total	102	2.8758	.55683	.05513	2.7664	2.9852	1.33	4.00