

The Paywall Divide: Premium AI Subscription as an Overlooked Equity Variable in Higher Education AI Research

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Abstract

Purpose – University AI-adoption research has extensively studied whether students use AI, but rarely how they pay for it. This paper argues that premium AI subscription status is an overlooked equity variable in higher-education AI research and proposes a research design to test it directly.

Design/methodology/approach – This is a conceptual/proposal paper motivated by a descriptive statistic from an existing dataset: in a survey of $n = 331$ university students in Uzbekistan (Tukhtaeva & Mirza, 2026), 42.3% reported paying out-of-pocket for a premium AI subscription, a variable collected but never analysed as a predictor or grouping variable in the original study. The paper situates this statistic within the emerging digital-divide literature on generative AI and specifies hypotheses and an analytic plan for testing it.

Findings – No new inferential findings are reported; respondent-level data required for group-comparison testing were not available for this analysis. The review shows converging international evidence that paid AI access is unevenly distributed and is itself predicted by AI literacy (Kanzamanova & Myeong, 2026), and that infrastructure, AI literacy, and economic constraints jointly shape generative-AI equity in higher education (Jamal Eddine et al., 2026).

Originality/value – Paid-tier access is largely absent from published AI-adoption models in higher education, which typically treat adoption as binary (use/non-use) rather than tiered. This paper proposes treating subscription status as a moderating or grouping variable and outlines the multi-group structural analysis needed to test it against academic and career outcomes.

Keywords: digital divide, AI equity, premium subscription, AI literacy, higher education

Paper type: Conceptual paper / research proposal

1. Introduction

Research on AI adoption in higher education has grown rapidly, but has almost universally treated adoption as a binary or continuous behavioural variable — whether and how much students use AI tools — without distinguishing free-tier from paid-tier access (Bond et al., 2023; Kasneci et al., 2023). This omission is increasingly consequential as generative AI providers differentiate capability by subscription tier: paid plans typically offer more capable models, higher usage limits, and access to features (e.g., advanced reasoning modes, larger context windows) that free tiers restrict.

A descriptive statistic from an existing dataset illustrates the scale of the issue. In a survey of 331 university students in Uzbekistan conducted for a study of AI adoption, academic success, and career readiness, 42.3% of respondents reported paying out-of-pocket for a premium AI subscription (Tukhtaeva & Mirza, 2026). This variable was collected as a demographic item but was not analysed in relation to any of the study's substantive constructs — AI literacy, critical thinking, academic success, or career readiness. This paper argues that it should be, and proposes how.

2. The Premium Digital Divide in Generative AI

Classical digital-divide scholarship distinguishes access, skills, and outcome divides (OECD, 2021; UNESCO, 2021). Generative AI reintroduces this structure in a new form. Jamal Eddine, Gide, and Al-Sabbagh (2026), in a systematised evidence mapping of twelve studies published between January 2023 and January 2025, identify inadequate infrastructure, low AI literacy, and economic constraints as recurring barriers to equitable generative-AI adoption in higher education, and call for targeted interventions to prevent these barriers from compounding existing inequities.

Direct evidence on paid AI access is still scarce but growing. Kanzamanova and Myeong (2026), analysing a cross-sectional survey of 2,000 South Korean adults, found that while 70.6% of respondents had used generative AI in the previous year, only 20.6% of users — 14.6% of the full sample — paid for access. Critically, they found that practical AI literacy was positively associated with both initial use and paid commitment, whereas critical AI awareness predicted use but not payment, suggesting that paid access is not simply a function of income but is entangled with users' existing AI competence.

Set against this benchmark, the 42.3% paid-subscription rate observed among university students in Uzbekistan (Tukhtaeva & Mirza, 2026) is strikingly high — nearly three times the South Korean general-population rate. Plausible explanations include differences in sampling (university students versus the general adult population), differences in the local pricing and availability of free-tier alternatives, or the academic pressure to use paid tools for coursework; the present data cannot adjudicate between these explanations, and this comparison is offered as an open question rather than a conclusion.

3. Motivating Evidence from the Present Sample

In the original $n = 331$ sample, 140 respondents (42.3%) reported holding a paid AI subscription and 191 (57.7%) did not (Tukhtaeva & Mirza, 2026). The same dataset separately reports that AI literacy was the highest-scoring construct in the survey ($M =$

4.00) and that AI adoption had the strongest single path coefficient in the structural model on AI literacy ($\beta = 0.447$, $p < .001$). Given the Kanzamanova and Myeong (2026) finding that practical AI literacy predicts paid commitment, it is plausible — though untested in this dataset — that paid-tier and free-tier students in this sample differ systematically in AI literacy, and potentially in the downstream constructs (critical thinking, academic success, career readiness) that AI literacy was shown to predict.

4. Proposed Study Design

Testing this proposition requires respondent-level data, which were not available for the present paper. The following design is proposed for a follow-up empirical study using the original (or a replication) dataset:

Proposed hypotheses:

P1. Students with a paid AI subscription report significantly higher AI literacy than students without one.

P2. Students with a paid AI subscription report significantly higher critical thinking scores than students without one.

P3. Students with a paid AI subscription report significantly higher academic success and career readiness than students without one.

P4. The structural paths from AI adoption to AI literacy and critical thinking (H3, H4 in the original model) are stronger for paid-tier than free-tier students, tested via partial least squares multi-group analysis (PLS-MGA).

P1–P3 can be tested with independent-samples t-tests (or Mann-Whitney U tests, given the ordinal nature of Likert data) comparing construct-level scores between paid and free-tier subgroups. P4 requires re-estimating the structural model separately for each subgroup in SmartPLS and testing path-coefficient differences via PLS-MGA or the Henseler et al. permutation test. A necessary caveat: the original survey did not

include a direct household-income or socioeconomic-status item, so subscription status can only proxy, not measure, economic constraint; a replication should add such an item to disentangle willingness-to-pay from ability-to-pay.

5. Practical and Policy Implications

If paid-tier students do show systematically higher AI literacy or outcomes, the implication is not that individual payment should be encouraged, but that unequal access itself becomes an equity concern requiring institutional response. The original study's own practical implications point in this direction, recommending that “institutions should explore subsidised or centrally licensed AI tool access to reduce inequality in AI engagement quality” given that 42.3% of respondents already pay from personal funds (Tukhtaeva & Mirza, 2026). This paper's contribution is to make that recommendation empirically testable: a centrally licensed AI tool policy is a stronger institutional case if paid-tier students can be shown to outperform free-tier students on the same competencies the institution is trying to build.

6. Limitations

As a conceptual paper, this analysis does not itself provide inferential evidence and should not be read as establishing a relationship between subscription status and any outcome. Its contribution is to identify an under-analysed variable already present in an existing dataset, situate it within recent international evidence, and specify a testable design. The proposed comparison with Kanzamanova and Myeong (2026) is cross-national and cross-population (general adults versus university students) and should be treated as context for hypothesis generation, not as a direct benchmark.

7. Conclusion

AI-adoption research in higher education has largely treated adoption as a uniform behaviour, overlooking that access to generative AI is increasingly tiered by price. With 42.3% of students in one Central Asian sample already paying for premium

access, and international evidence suggesting paid commitment is itself linked to AI literacy (Kanzamanova & Myeong, 2026), subscription status deserves treatment as a substantive equity variable rather than a background demographic. This paper has specified the hypotheses and analytic design needed to test that proposition directly.

References

- Bond, M., Khosravi, H., De Laat, M., Bergdahl, N., Nerantzi, C., Rospigliosi, A., & Siemens, G. (2023). A meta-systematic review of research on artificial intelligence in education. *Computers & Education: Artificial Intelligence*, 5, 100173.
- Jamal Eddine, R., Gide, E., & Al-Sabbagh, A. (2026). Systematised evidence mapping of generative artificial intelligence (GenAI) and digital divide phenomena in higher education. *Discover Computing*, 29(1).
<https://doi.org/10.1007/s10791-026-10044-w>
- Kanzamanova, R., & Myeong, S. (2026). Freemium generative AI as a socio-technical system: Paid commitment and the premium digital divide in South Korea. *Systems*, 14(8), 889. <https://doi.org/10.3390/systems14080889>
- Kasneci, E., Seßler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., & Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274.
- OECD. (2021). OECD digital education outlook 2021: Pushing the frontiers with AI, blockchain and robots. OECD Publishing. <https://doi.org/10.1787/589b283f-en>
- Tukhtaeva, A., & Mirza, M. Z. (2026). The impact of AI adoption on academic success and career readiness: The mediating effects of AI literacy and critical thinking skills [Unpublished master's thesis]. New Uzbekistan University.

UNESCO. (2021). AI and education: Guidance for policymakers. UNESCO
Publishing.