

The Influence of Artificial Intelligence on Human Decision-Making, Productivity, and Safety in the Field of Education at Pangasinan State University

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Abstract

The integration of Artificial Intelligence (AI) in higher education has increasingly influenced academic and administrative practices, reshaping how decisions are made, tasks are performed, and institutional risks are managed. This study examined the perceived influence of AI on human decision-making, productivity, and safety within a public higher education institution in the Philippines. A quantitative descriptive research design was employed, using a structured survey questionnaire administered to 300 university personnel with direct exposure to AI-enabled academic and administrative tools. Descriptive statistical techniques, including mean and standard deviation, were used to analyze respondents' perceptions across the three domains.

The findings indicate that AI is perceived to have a strong positive influence on productivity (composite mean = 4.29), particularly in automating routine tasks, improving efficiency, and supporting workload management. AI was also viewed as a valuable decision-support tool (composite mean = 4.17), enhancing access to information and enabling data-informed academic and administrative decisions. In contrast, perceptions related to AI safety and governance were comparatively moderate (composite mean = 3.95), reflecting cautious confidence in institutional safeguards, data privacy measures, and ethical oversight mechanisms.

Overall, the results suggest an uneven trajectory of AI adoption in higher education, where functional benefits related to productivity and decision support advance more rapidly than governance and safety readiness. The study highlights the importance of balanced AI integration strategies that align technological innovation with ethical governance, policy development, and capacity-building initiatives. By providing empirical evidence from a public university in a developing-country context, this study contributes to ongoing discussions on responsible AI adoption in higher education and offers insights for institutional leaders and policymakers seeking to harness AI while safeguarding human judgment and institutional accountability.

Keywords: Artificial Intelligence, Higher Education, Human Decision-Making, Productivity, AI Governance, Data Privacy, Human-AI Interaction.

1. Introduction

Artificial Intelligence (AI) has become a defining component of digital transformation in higher education, reshaping how universities design instruction, manage administrative operations, and support institutional decision-making. No longer limited to experimental or auxiliary applications, AI-driven systems are increasingly embedded in core academic and operational processes, including learning analytics, automated assessment, document generation, scheduling, and performance monitoring. As higher education institutions (HEIs) continue to integrate AI into everyday practices, attention has shifted from technological capability alone toward understanding how AI influences human judgment, work productivity, and institutional responsibility.

Recent empirical studies highlight AI's strong association with productivity enhancement in higher education settings. AI-enabled tools have been shown to automate repetitive tasks, accelerate information processing, and support more efficient workflow management among university personnel with direct exposure to AI-enabled academic and administrative tools. These capabilities allow educators and university personnel to allocate more time to higher-order tasks such as instructional design, research, and strategic planning. Consequently, AI adoption in HEIs is frequently justified through efficiency-driven narratives that emphasize speed, convenience, and output optimization (Bond et al., 2021; Holmes et al., 2022; Kasneci et al., 2023).

Beyond productivity, AI increasingly functions as a decision-support mechanism within universities (Jarrahi, 2021; Alon-Barkat & Busuioc, 2022; Chatterjee et al., 2021). AI-powered analytics systems can synthesize large volumes of institutional data and provide insights that inform academic planning, student performance evaluation, and administrative decision-making. When used appropriately, AI supports evidence-based decision processes by reducing uncertainty and improving access to relevant information. However, contemporary scholarship consistently emphasizes that AI should augment rather than replace human judgment, particularly in educational contexts where ethical reasoning, contextual awareness, and professional accountability remain central.

Despite its operational benefits, the growing use of AI in higher education has intensified concerns related to safety, data privacy, and institutional governance (Floridi et al., 2020; Selwyn, 2021; Tian & Fu, 2023). AI systems often rely on extensive data collection and algorithmic processing, raising questions about transparency, accountability, bias, and the protection of personal and institutional data. Studies published between 2020 and 2025 indicate that while AI adoption progresses rapidly, governance frameworks, ethical guidelines, and staff training frequently lag behind technological implementation. This imbalance may undermine trust in AI systems and create uneven or cautious adoption across institutional units.

A critical gap in the existing literature lies in how AI adoption outcomes are examined (Williamson & Eynon, 2020; Mhlanga, 2023; Zhai et al., 2024). Many studies focus on isolated dimensions such as instructional effectiveness, learning analytics, or productivity gains, without simultaneously considering decision-making, productivity, and safety as interconnected aspects of human-AI interaction. Moreover, empirical research remains disproportionately concentrated in technologically advanced or Western higher education systems. As a result, there is limited evidence on how AI influences human work practices and governance perceptions in public HEIs within developing-country contexts, where institutional resources, policy development cycles, and digital readiness may differ significantly.

In the Philippine higher education sector, AI adoption reflects broader national efforts toward digitalization and institutional modernization. Public universities have increasingly adopted AI-enabled platforms to support teaching, administration, and academic decision-making. While prior research has documented the effectiveness of technology-mediated platforms in supporting teaching and learning during periods of rapid digital transition, empirical evidence specifically examining the influence of AI on human decision-making, productivity, and safety perceptions among university personnel remains scarce.

Addressing these gaps, this study investigates the perceived influence of Artificial Intelligence on human decision-making, productivity, and safety among university personnel with direct exposure to AI-enabled academic and administrative tools at Pangasinan State University, a

public higher education institution in the Philippines. Using a quantitative descriptive research design, the study examines these three dimensions concurrently to provide a holistic understanding of AI adoption from the perspective of end users within an institutional setting.

By focusing on decision-making, productivity, and safety as interrelated domains, the study contributes empirical insights into how AI adoption unfolds in a public HEI within a developing-country context. The findings aim to inform institutional leaders, policymakers, and educators about the opportunities and challenges associated with AI integration, highlighting the need to balance operational efficiency with ethical governance, policy development, and sustained capacity-building for responsible AI use in higher education.

1.1 Research Objectives

This study aims to examine the perceived influence of Artificial Intelligence (AI) on human work practices within a public higher education institution in the Philippines. Specifically, it seeks to:

1. Determine the perceived influence of AI on human decision-making among university personnel with direct exposure to AI-enabled academic and administrative tools.
2. Assess the perceived influence of AI on productivity, particularly in relation to task automation, efficiency, and workload management.
3. Examine perceptions of AI safety and governance, including data privacy, ethical safeguards, and institutional readiness for responsible AI use.

By addressing these objectives concurrently, the study provides a holistic view of AI adoption in higher education, highlighting both functional benefits and governance-related challenges within a developing-country context.

2. Methodology

2.1 Research Design

This study employed a quantitative descriptive research design to examine the perceived influence of Artificial Intelligence (AI) on human decision-making, productivity, and safety among university personnel with direct exposure to AI-enabled academic and administrative tools in a higher education setting. A descriptive approach was deemed appropriate because the primary objective of the study was to describe and analyze patterns of perception related to AI use rather than to establish causal relationships or test predictive models.

Recent studies on AI adoption in higher education have demonstrated the suitability of descriptive designs when investigating user perceptions, institutional readiness, and governance-related concerns, particularly during early or transitional stages of AI integration. In this study, the descriptive design enabled a systematic examination of how AI is experienced by end users across multiple functional domains within the university.

2.2 Research Locale and Respondents

The study was conducted at Pangasinan State University (PSU), a public higher education institution in the Philippines. PSU represents a relevant research context due to its ongoing efforts toward digital transformation and increasing exposure to AI-enabled platforms for academic and administrative functions.

The respondents consisted of university personnel with direct exposure to AI-enabled academic and administrative tools who had direct experience or familiarity with AI-

supported tools used in instructional planning, academic decision-making, and administrative processes. To ensure the relevance of responses, purposive sampling was employed. This sampling technique was appropriate because the study required participants who could meaningfully evaluate AI's influence based on actual use or exposure within the institutional setting.

A total of 300 valid responses were included in the final analysis, strengthening the descriptive robustness of the study and allowing for stable mean estimates across the three domains examined. The inclusion of both academic and administrative personnel ensured that perceptions reflected a broad institutional perspective rather than a single occupational group.

2.3 Research Instrument

Data were collected using a structured survey questionnaire developed based on contemporary literature on AI adoption, human–AI interaction, and educational technology use in higher education. The questionnaire was designed to capture respondents' perceptions of AI influence across three core domains:

1. AI and Human Decision-Making
2. AI and Productivity
3. AI and Safety and Data Privacy

The instrument consisted of four sections:

- respondent demographic profile,
- AI and decision-making,
- AI and productivity, and
- AI and safety and privacy.

All perception items were measured using a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The questionnaire focused on perceived influence rather than objective performance metrics, consistent with the descriptive and perception-based orientation of the study.

Although the questionnaire section was labeled “AI Safety and Data Privacy,” the items collectively capture broader governance-related dimensions, including data protection, cybersecurity, ethical safeguards, institutional policies, and training. Consistent with contemporary literature, these indicators are interpreted in this study under the broader construct of AI safety and governance.

2.4 Theoretical Orientation of the Instrument

Although the study did not test a formal causal model, the survey instrument was theoretically informed by three complementary perspectives commonly applied in AI and educational technology research:

- Technology Acceptance perspectives, which emphasize perceived usefulness and value in shaping user engagement with AI-enabled tools;
- Task-Technology Fit theory, which explains productivity gains when technological capabilities align with task requirements; and
- Human–AI Interaction and governance perspectives, which highlight the role of trust, transparency, ethics, and institutional safeguards in shaping user confidence.

These perspectives guided the conceptual alignment of questionnaire items with the three domains examined, without imposing predictive or inferential assumptions. This approach

ensured theoretical grounding while remaining consistent with the study's descriptive purpose.

2.5 Validity and Reliability of the Instrument

To establish content validity, the questionnaire was reviewed by subject-matter experts with backgrounds in educational technology, AI-related research, and higher education administration. Feedback from the review process was used to refine item clarity, relevance, and alignment with the study objectives.

A pilot test was conducted prior to full-scale data collection, and the internal consistency of the instrument was assessed using Cronbach's alpha. The internal consistency of the instrument was high. Cronbach's alpha coefficients indicated excellent reliability for the decision-making subscale ($\alpha = 0.90$), good reliability for productivity ($\alpha = 0.84$), and good reliability for safety and governance ($\alpha = 0.89$), with an overall reliability coefficient of $\alpha = 0.91$. These values confirm that the instrument was suitable for measuring perceptions across the three domains of interest.

2.6 Data Collection Procedure

Approval to conduct the study was obtained from the appropriate university authorities. Data collection was carried out using a combination of online and printed survey formats to accommodate respondents' accessibility, availability, and institutional work arrangements.

Participants were informed of the purpose of the study, and informed consent was obtained prior to participation. Responses were collected over a defined period, screened for completeness, encoded, and prepared for statistical analysis. No personally identifiable information was collected, ensuring respondent anonymity throughout the research process.

2.7 Data Analysis

Collected data were analyzed using descriptive statistical techniques, including frequency distribution, mean, and standard deviation. These measures were used to summarize respondents' perceptions of AI's influence on decision-making, productivity, and safety.

Given the descriptive nature of the study, no inferential statistical tests or causal analyses were conducted. Instead, emphasis was placed on identifying patterns, trends, and relative differences across the three domains. The results were subsequently interpreted and contextualized through engagement with recent literature in the merged Results and Discussion section.

2.8 Ethical Considerations

Ethical standards were strictly observed throughout the research process. Participation was voluntary, and respondents were assured of anonymity and confidentiality. All collected data were used solely for academic and research purposes.

The study adhered to principles of responsible research conduct, particularly in relation to data handling, informed consent, and the ethical use of AI-related perceptions in academic inquiry.

3. Results and Discussion

This section presents and discusses the results of the study on the perceived influence of Artificial Intelligence (AI) on human decision-making, productivity, and safety among personnel at Pangasinan State University. Data from a total of 300 valid responses were

included in the final analysis using descriptive statistics, including mean scores derived from a five-point Likert scale, where higher values indicate stronger agreement.

3.1 Demographic Profile of Respondents

The demographic profile of the respondents provides context for interpreting perceptions of AI use within the institution. Respondents varied in terms of sex, age group, and years of service, indicating that the findings reflect perspectives from personnel with differing levels of professional experience and exposure to AI-enabled tools.

Table 1. Demographic Profile of Respondents (n = 300).

Variable	Category	Frequency (n)
Sex	Male	142
	Female	158
Age Group	21–30 years old	88
	31–40 years old	98
	41–50 years old	98
	51 years and above	16
Years in Service	0–5 years	136
	6–10 years	113
	11 years and above	51

Note. Frequencies are based on valid responses (n = 300).

The diversity in years of service suggests that perceptions of AI were informed by both relatively new and long-serving personnel, strengthening the descriptive validity of the study.

3.2 Influence of Artificial Intelligence on Human Decision-Making

The findings indicate a high level of agreement regarding the influence of AI on human decision-making. The computed composite mean for this domain is 4.17, suggesting that respondents generally perceive AI as a valuable decision-support tool in academic and administrative contexts.

Table 2. Respondents' Perceptions of the Influence of Artificial Intelligence on Human Decision-Making.

Indicator	Mean	SD
AI helps me make timely and informed decisions	4.23	0.71
I use AI insights for planning and policy	4.19	0.73
AI reduces uncertainty in decision-making	4.14	0.76
I trust AI analytics over manual methods	4.16	0.72
AI ensures fairness in grading/evaluation	4.09	0.79
AI has changed my instructional strategies	4.15	0.74
AI helps me analyze student performance	4.21	0.70
I feel confident using AI for curriculum decisions	4.12	0.75
AI promotes data-driven leadership	4.20	0.71
I consult AI before academic/operational decisions	4.18	0.72

Composite Mean = 4.17

Note. Scale: 1 = Strongly Disagree, 5 = Strongly Agree.

Respondents agreed that AI helps them make timely and informed decisions, reduces uncertainty, and supports planning and policy formulation. The high mean scores reflect confidence in AI-generated insights while maintaining human oversight. This finding aligns with studies emphasizing AI's role as an augmentative decision-support system that enhances access to information and analytical capacity without replacing professional judgment in higher education contexts (Jarrahi, 2021; Alon-Barkat & Busuioc, 2022; Chatterjee et al., 2021).

The results suggest that AI tools are increasingly embedded in institutional decision routines, particularly for data analysis, performance monitoring, and strategic planning. Such integration reflects broader trends in higher education where AI-enabled analytics support evidence-based governance while preserving human accountability in academic and administrative decisions (Ifenthaler & Schumacher, 2023; Faraj et al., 2024).

3.3 Influence of Artificial Intelligence on Productivity

Among the three domains examined, productivity obtained the highest overall rating, with a composite mean of 4.29. This indicates strong agreement that AI positively influences work efficiency and task performance.

Table 3. Respondents' Perceptions of the Influence of Artificial Intelligence on Productivity.

Indicator	Mean	SD
AI helps me work faster and more efficiently	4.36	0.65
I use AI to generate instructional materials	4.31	0.69
AI eases administrative tasks	4.28	0.71
AI automates repetitive processes	4.35	0.66
I track feedback and engagement via AI	4.21	0.73
AI improves meeting/report preparation	4.26	0.70
I accomplish more using AI tools	4.34	0.67
AI allows more time for teaching/research	4.27	0.71
Regular AI use increases my productivity	4.30	0.68
AI supports multitasking effectively	4.33	0.67

Composite Mean = 4.29

Note. Scale: 1 = Strongly Disagree, 5 = Strongly Agree.

Respondents strongly agreed that AI enables them to work faster, automate repetitive processes, generate instructional materials, and manage administrative tasks more effectively. The prominence of productivity-related benefits reflects AI's ability to streamline routine academic and administrative work, a finding consistently reported in prior studies on AI adoption in higher education (Bond et al., 2021; Holmes et al., 2022; Kasneci et al., 2023). These findings support the task-technology fit perspective, which suggests that productivity gains occur when technological capabilities align closely with task requirements. From a task-technology fit standpoint, AI tools appear well matched to recurring instructional and administrative tasks, thereby enhancing efficiency and workload management among university personnel (Isaac et al., 2020; Brynjolfsson & McAfee, 2020).

3.4 Influence of Artificial Intelligence on Safety and Governance

In contrast to decision-making and productivity, perceptions related to AI safety and governance were comparatively moderate, with a composite mean of 3.95. While respondents generally acknowledged the importance of ethical standards and data protection, confidence in institutional safeguards was less pronounced.

Table 4. Respondents' Perceptions of the Influence of Artificial Intelligence on Safety and Governance.

Indicator	Mean	SD
I understand AI-related data privacy risks	4.05	0.88
I feel secure using institutional AI tools	3.97	0.92
I feel confident that my personal data is handled responsibly	3.94	0.91
Our institution has AI safety policies	3.89	0.96
AI systems are protected against cybersecurity risks	3.88	0.97
I trust the protection of AI-generated data	3.99	0.90
I am comfortable using AI platforms for academic tasks	4.02	0.89
I believe student data is safe with AI tools	3.96	0.93
I've received training on safe/ethical AI use	3.91	0.98
There is a clear AI safety protocol on campus	3.87	0.99

Composite Mean = 3.95

Note. Scale: 1 = Strongly Disagree, 5 = Strongly Agree.

Respondents expressed cautious agreement regarding data privacy protection, cybersecurity measures, and the existence of institutional AI safety policies. The comparatively lower mean scores indicate ongoing concerns related to transparency, accountability, and institutional preparedness, particularly as AI systems increasingly rely on large-scale data processing (Floridi et al., 2020; Tian & Fu, 2023).

This pattern reflects broader trends in higher education, where AI adoption often advances more rapidly than governance frameworks. Similar gaps between functional AI adoption and governance readiness have been documented in higher education systems globally, underscoring the need for clearer policies, ethical guidelines, and staff training to support responsible AI use (Selwyn, 2021; Mhlanga, 2023; Ifenthaler & Schumacher, 2023).

3.5 Comparative Synthesis Across AI Domains

A comparative analysis across the three domains reveals a clear asymmetry in perceived AI influence. Productivity ranked highest ($M = 4.29$), followed by decision-making ($M = 4.17$), while safety and governance ranked lowest ($M = 3.95$).

Table 5. Summary of Perceived Influence of Artificial Intelligence by Domain.

Domain	Composite Mean	Rank
Productivity	4.29	1
Decision-Making	4.17	2
Safety and Governance	3.95	3

This pattern suggests that AI adoption within the university is driven primarily by functional benefits, particularly efficiency and task automation, while governance and safety

considerations lag behind. Such asymmetry has been observed in prior research, where immediate productivity and decision-support gains often precede the development of comprehensive governance structures and ethical oversight mechanisms in higher education (Williamson & Eynon, 2020; OECD, 2024). Balancing innovation with governance is increasingly emphasized in international policy and research discussions on responsible AI adoption in education, particularly within public and developing-country contexts (UNESCO, 2023; Zhai et al., 2024).

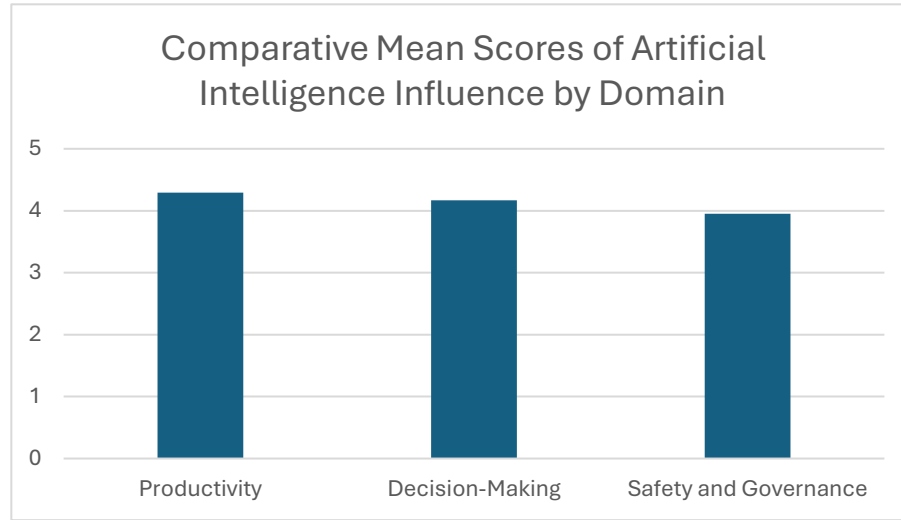


Figure 1. Comparative Mean Scores of Artificial Intelligence Influence by Domain. Productivity recorded the highest composite mean, followed by decision-making, while safety and governance obtained comparatively lower ratings.

4. Conclusion and Implications

4.1 Conclusion

This study examined the perceived influence of Artificial Intelligence (AI) on human decision-making, productivity, and safety among personnel at Pangasinan State University using a quantitative descriptive approach. The findings indicate that AI is widely perceived as a valuable institutional tool, particularly in enhancing productivity and supporting data-informed decision-making. Respondents reported strong agreement regarding AI's role in automating routine tasks, improving efficiency, and assisting with academic and administrative responsibilities.

In contrast, perceptions related to AI safety and governance were comparatively moderate. While respondents acknowledged the importance of ethical standards, data privacy, and institutional safeguards, confidence in existing governance mechanisms was less pronounced than in functional domains. This suggests that although AI adoption has progressed in operational terms, institutional readiness to manage ethical, privacy, and governance concerns has not advanced at the same pace.

Overall, the results demonstrate that AI adoption within a public higher education institution follows an uneven trajectory. Productivity and decision-support benefits are realized more

quickly, while governance and safety considerations require more deliberate institutional development. These findings underscore the importance of viewing AI integration not only as a technological innovation but also as a socio-organizational process shaped by policy, human judgment, and institutional capacity.

4.2 Practical and Institutional Implications

The findings offer practical implications for higher education institutions. First, administrators may continue to leverage AI tools to enhance productivity and support evidence-based decision-making, particularly where task automation and information processing yield clear efficiency gains. Establishing shared guidelines for AI use across academic and administrative units may help ensure consistent and effective application.

Second, the comparatively moderate perceptions of AI safety highlight the need for strengthened institutional governance. Universities should prioritize the development and communication of clear policies related to data privacy, ethical use, transparency, and accountability in AI-enabled systems. Clearly articulated guidelines can enhance user trust and reduce uncertainty associated with AI adoption.

Third, capacity-building initiatives are essential to support responsible AI use. Regular training programs for personnel can improve AI literacy, raise awareness of ethical considerations, and promote informed human-AI collaboration. Such initiatives may help bridge the gap between functional adoption and governance readiness identified in the study.

4.3 Policy Implications

At the policy level, the findings suggest that higher education institutions should pursue balanced AI strategies that integrate technological innovation with ethical governance. Institutional leaders may consider establishing oversight mechanisms or committees responsible for monitoring AI use, reviewing risks, and ensuring compliance with ethical standards and data protection regulations.

For public universities in developing-country contexts, aligning institutional AI practices with national and international policy frameworks can support sustainable and responsible AI adoption. Policies emphasizing transparency, accountability, and user protection are particularly important in maintaining trust and legitimacy as AI becomes more embedded in academic and administrative processes.

4.4 Limitations and Future Research Directions

This study has several limitations. First, it employed a descriptive design and relied on self-reported perceptions, which may not fully capture objective performance outcomes or institutional practices. Second, the study was conducted within a single public university, which may limit the generalizability of the findings.

Future research may extend this work through mixed-methods or longitudinal designs to examine how perceptions of AI evolve over time and how governance frameworks develop alongside technological adoption. Comparative studies across institutions or regions may also provide deeper insights into contextual factors influencing AI adoption, trust, and policy development in higher education.

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