

The Impact of Artificial Intelligence on Teaching Decision-making in Public Administration Higher Education

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Abstract

Artificial intelligence (AI) advancement creates new possibilities in higher education, particularly in teaching decision-making. This study examines the applicability of AI in managerial decision-making, based on an experiment conducted among students at a public administration higher education institution. The research aims to identify differences between decision-making methods chosen by students in public administration management courses and the approaches used by AI, as well as to measure students' satisfaction with AI's decision-making capabilities. The main questions revolve around methodological differences, the divergences between human and AI-driven decisions, and levels of student satisfaction. During the research, students tackled various decision-making scenarios and compared their methods with AI-generated suggestions. The analysis was conducted using both quantitative and qualitative tools, including statistical and content analyses, to evaluate decision-making processes and satisfaction levels. Results indicate that the methods employed by AI and students often diverged, yet the outcomes were frequently similar. A significant portion of students expressed satisfaction with AI-generated decisions, especially when these aligned with their solutions. The study's findings support the idea that AI can effectively aid decision-making, albeit with certain limitations, such as disregarding local factors. The methodology applied in this research serves as a control factor in the education of managerial decision-making.

Keywords

Artificial intelligence (AI), public administration, higher education, decision-making

1. Introduction

In recent years, the rapid development of artificial intelligence (AI) has presented new opportunities across various domains, including higher education and decision-making. ChatGPT, a GPT-based language model developed by OpenAI, is a notable example of this technology. Built on natural language processing (NLP), ChatGPT is increasingly utilized to address diverse challenges. Its capabilities include processing large volumes of textual data and quickly summarizing complex information, making it a valuable tool in decision-making. The evolution of AI and ChatGPT has significantly impacted higher education, offering universities new possibilities that influence learning, teaching, and research.

This study examined the effectiveness of integrating ChatGPT into decision-making processes within the context of teaching decision-making in higher education. Using a group of students' experiences, the research explored the differences between decision-making methods chosen by students and ChatGPT, as well as the resulting decisions

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made by humans and AI. Additionally, it assessed students' satisfaction with ChatGPT's decision-making methods and outcomes. The findings aim to serve as a foundation for further research on effective collaboration with language models, maximizing their benefits while mitigating potential risks.

In the following sections, the use of ChatGPT in higher education is reviewed based on the literature, focusing on its benefits and challenges for educators and students, as well as its pedagogical applications and limitations. Subsequently, an exploration is made into how ChatGPT and similar language models can support decision-making, discussing their advantages and risks in this domain.

2. ChatGPT in Higher Education

The advent of generative artificial intelligence, particularly models like ChatGPT, has sparked transformative discourse in higher education, raising diverse perspectives on its implications. This literature review highlights recent research exploring the benefits and risks of ChatGPT's integration into higher education, focusing on teaching, learning, student engagement, and institutional practices.

Among its advantages several studies emphasize ChatGPT's potential to enhance learning experiences in higher education. Aristovnik (2024) explains that ChatGPT facilitates personalized learning by adapting to individual student needs, thereby promoting engagement and a deeper understanding of course materials. This capability enables a tailored educational approach where students interact with AI to clarify concepts and receive immediate feedback, simulating a more interactive learning environment.

Similarly, Li (2024) notes that integrating ChatGPT into teaching practices can significantly complement traditional pedagogical methods. ChatGPT functions as a supplementary educational tool that enhances critical thinking and analytical skills by providing students with access to a vast repository of information and resources. This support is particularly valuable in complex subjects requiring immediate clarification.

According to Shahzad et al. (2024), ChatGPT is also a valuable educational resource. They can utilize ChatGPT to streamline administrative tasks such as grading and feedback, allowing them to focus more on the strategic aspects of teaching. The efficiency gained through automation can improve the quality of education by enabling educators to dedicate more time to developing engaging and effective course materials.

Furthermore, a systematic review by Dikilitaş et al. (2024) highlights that educators can leverage ChatGPT for professional development. The model assists in designing course content, developing assessments, and exploring innovative teaching strategies, thereby enhancing overall teaching effectiveness.

Jensen (2024) suggests that ChatGPT has the potential to bridge informational gaps among students with diverse backgrounds. By providing equal access to information and resources, AI can help reduce disparities in educational opportunities. This “knowledge democratization” fosters an inclusive learning environment where all students can engage with educational content, regardless of their prior experiences or academic backgrounds.

Despite its numerous benefits, several studies underscore significant risks associated with ChatGPT's use in higher education. Abulaiti et al. (2024) identify trust as a critical factor in the acceptance and adoption of ChatGPT in educational contexts. Reliance on AI for educational purposes can provoke skepticism among both students and instructors regarding the accuracy and reliability of AI-generated content. Since trust is essential for effective

interaction with AI tools, perceived unreliability may hinder the integration of ChatGPT in educational environments.

One of the primary concerns related to ChatGPT's integration is its potential impact on academic integrity. As Nebieridze and Jojua (2024) emphasize, the ease of access to AI-generated content raises issues of plagiarism and the authenticity of student work. Students may be tempted to use AI to generate essays or complete assignments, undermining the core values of “academic trust”. Instructors face the challenge of developing frameworks and policies to effectively address these ethical dilemmas while leveraging the benefits of AI.

A study by Song et al. (2024) offers a nuanced view of students' experiences with ChatGPT. While some students report positive interactions, others express concerns about the quality and relevance of AI-generated responses. This variability in perception underscores the need for further research to understand the factors influencing mixed experiences, such as familiarity with technology, learning styles, and disciplinary differences.

Additionally, Dikilitaş et al. (2024) reveal that while some students welcome the integration of AI tools, others approach it with apprehension, fearing that AI might replace critical thinking and problem-solving skills. This dichotomy indicates a pressing need for educational institutions to address these concerns through targeted training and awareness campaigns.

The integration of ChatGPT into higher education thus entails both advantages and challenges. On one hand, it offers enhanced learning experiences and support for educators and bridges informational gaps, potentially transforming the educational landscape. On the other hand, issues related to trust, ethical considerations, and diverse student experiences require careful attention. Future research should focus on establishing best practices for introducing AI tools like ChatGPT in higher education, ensuring they enhance rather than undermine academic integrity and the overall educational experience. Continuous dialogue among stakeholders—students, educators, and policymakers—is essential for effectively managing AI integration in higher education.

3. ChatGPT in Decision-Making

The rapid advancement of generative artificial intelligence, particularly ChatGPT, has spurred extensive research on its impact on decision-making across various sectors, including business, education, and engineering. This literature review synthesizes recent studies that focus on the benefits and risks associated with integrating ChatGPT into decision-making processes, highlighting its transformative potential while addressing the challenges it poses.

One of ChatGPT's key advantages in decision-making lies in its ability to process large volumes of data and generate actionable insights. According to Chuma et al. (2024), ChatGPT facilitates data-driven decision-making by providing real-time analysis of extensive datasets. Its capability to quickly identify patterns and trends enables organizations to apply strategies effectively and respond rapidly to market dynamics, thereby enhancing competitiveness. Additionally, Jiang et al. (2024) emphasize that integrating ChatGPT with data visualization tools further enhances its utility, particularly in higher education, allowing decision-makers to better interpret complex data and make informed decisions regarding resource allocation and curriculum development.

The integration of ChatGPT with decision management systems, such as Pega's Adaptive Decision Manager (ADM), illustrates another dimension of its utility in business environments. Kumar (2024) discusses how combining ChatGPT with ADM can facilitate more nuanced decision-making processes. By simulating human

interactions, ChatGPT helps decision-makers pose contextual questions and suggest personalized solutions based on algorithmic analyses. This synergy improves flexibility and responsiveness in business operations, making decision-making more adaptable to changing circumstances.

ChatGPT also contributes to improving logical analysis within decision-making frameworks. Aljaž (2024) explores ChatGPT's application in the Theory of Constraints (TOC) thinking process, highlighting its role in identifying bottlenecks and proposing logical solutions. Its ability to process complex logical frameworks and generate clear, actionable insights makes ChatGPT a valuable tool for managers engaged in strategic planning. ChatGPT enhances the decision-maker's ability to adapt quickly to evolving business conditions by providing immediate feedback and information.

In the context of business information systems, Diantoro et al. (2024) examine how ChatGPT can support strategic decision-making in medium-sized enterprises. Their study finds that such enterprises can leverage ChatGPT to understand market trends and operational efficiency without requiring extensive data analysis teams. ChatGPT enables smaller organizations to access advanced analytical capabilities, by democratizing decision-making tools, leveling the playing field with larger competitors.

Despite these advantages, numerous studies highlight the risks associated with ChatGPT's use in decision-making. Reliance on ChatGPT raises concerns about overdependence on AI systems, potentially reducing human oversight in critical decision-making processes. Nivetha and Prasanth (2024) argue that while ChatGPT provides valuable insights, it cannot replace human judgment, particularly in complex decision scenarios involving ethical considerations. They caution that excessive reliance on AI could undermine critical thinking and moral reasoning, especially in decisions with significant social or ethical implications.

An exploratory study by Xu et al. (2024) raises questions about the quality and reliability of ChatGPT's outputs, particularly in subjective decision-making contexts, such as engineering design. While the tool may generate creative solutions, its effectiveness diminishes when subjective preferences or ethical dilemmas arise. The study warns that AI-generated recommendations may reflect biases inherent in training data, necessitating thorough validation by human decision-makers to ensure alignment with organizational values and ethical norms.

Integrating ChatGPT into existing decision-making frameworks can also present challenges, particularly in aligning AI capabilities with organizational goals and processes. Integrating Kumar (2024) notes that while ChatGPT facilitates decision-making through its interactive capabilities, organizations must consider how to effectively incorporate this technology into their existing systems. This requires comprehensive training and adaptation of existing decision-making protocols to fully exploit the benefits of AI tools.

In conclusion, the integration of ChatGPT into decision-making processes offers significant benefits, including enhanced data analysis, adaptive decision-making, and improved logical reasoning. However, it also poses critical risks, such as ethical concerns, AI dependency, and integration challenges. Future research should focus on developing frameworks that balance ChatGPT's strengths with the need for human oversight in decision-making. Addressing these challenges will enable organizations to harness the full potential of ChatGPT to improve decision-making outcomes while safeguarding against the inherent risks of AI technologies.

4. Decision-Making Experiment – Research Design

The single group, i.e., a self-controlled experiment, was conducted by the first author of this study within the framework of the *Public Service Management* course at *Ludovika University of Public Service*, involving correspondence students from the *Political Sciences MA program*. The student's task was to present and analyze an individual decision-making process based on the following criteria: (1) Clearly define the decision-making situation/problem. (2) Describe the decision-making process using an arbitrarily chosen method or tool. (3) Analyze your decision-making process: highlight the advantages and risks and how the latter can be managed. (4) Consult ChatGPT regarding the decision. (5) Compare your and ChatGPT's decision-making processes and results and evaluate the differences. The decision-making methods students could apply during the experiment are presented in Table 1:

Table 1. Decision-making methods used in the experiment.

I. Decision Tables	II. Decision Charts
1. Pros and Cons	4. Decision Tree Analysis
2. Paired Ranking	5. Flow Diagram
3. Grid Analysis	6. Cause-and-Effect Diagram

Annex 1 includes a brief description of these decision-making methods. These methods allow managers to make decisions systematically, ensuring that choices are well-informed, logical, and aligned with organizational objectives. A common feature of these two categories of methods is the calculation and maximization of subjective expected utility. The need to ensure objectivity drove the selection of methods in the experiment.

The effectiveness of incorporating ChatGPT into individual decision-making was examined using the above decision-making methods. The *research questions* were: (Q1) How do the *decision-making methods* chosen by students and ChatGPT differ for a given problem? (Q2) How do the *decisions* made by students and ChatGPT differ? (Q3) How satisfied are students with ChatGPT's *decision-making method and outcomes*?

The following *hypotheses* were formulated for the study: (H1) The decision-making methods chosen by students and ChatGPT differ for a given problem, depending on the nature of the decision-making situation. (H2) The decisions made by students and ChatGPT are not identical and rely on the alignment of their chosen methods. (H3) Students' satisfaction with ChatGPT's involvement varies based on the alignment of decision outcomes.

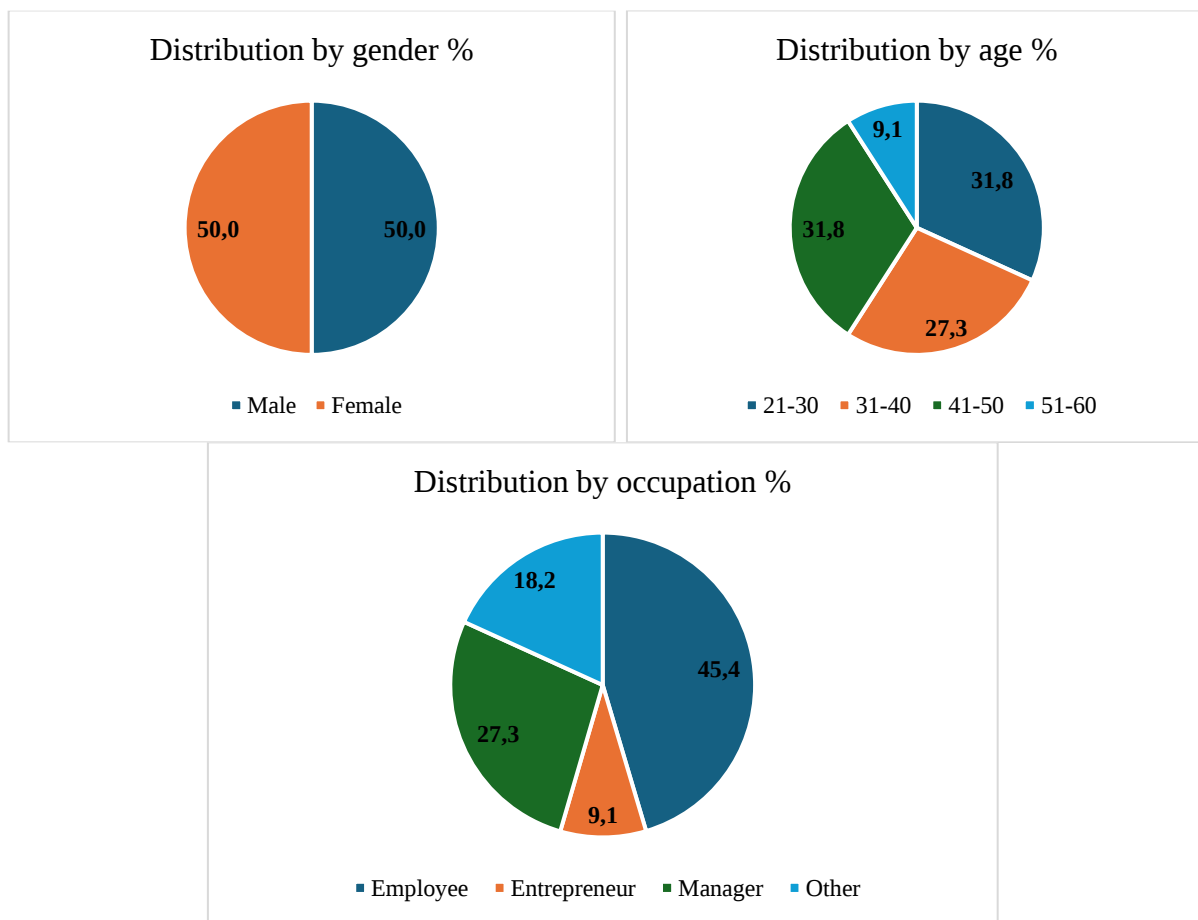
The research methodology involved *quantitative statistical data analysis* for H1 and H2, focusing on correlations between demographic characteristics, decision-making methods, and outcomes. For H3 partly by *statistical analysis*, and partly by a *qualitative content analysis* of opinions regarding satisfaction was performed.

5. Analysis of the Results

5.1 Statistical Data Analysis

The experiment involved 22 student participants with an equal gender distribution, as women and men participated in a 50/50 ratio. Regarding age distribution, the largest groups were, in equal proportion, the youngest (21–30 years) and the 41–50-year-olds (31.8% each); the 31–40-year-old group comprised one fewer participants (6 persons, 27.3%), and two individuals represented the 41–50 age (9.1%). In terms of occupation, 6 participants

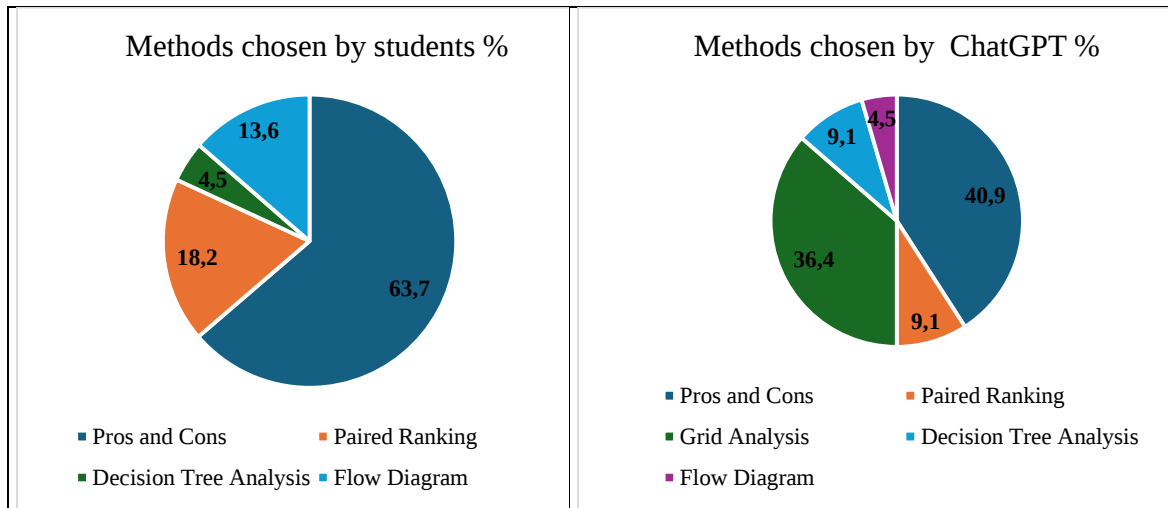
(27.3%) held managerial positions, 10 participants (45.4%) were employees, while the remaining students identified themselves as entrepreneurs (2 persons) or as having other occupations (4 persons). The characteristics of the sample are presented in Diagram 1



1. Diagram. Sample characteristics by gender, age, and occupation.

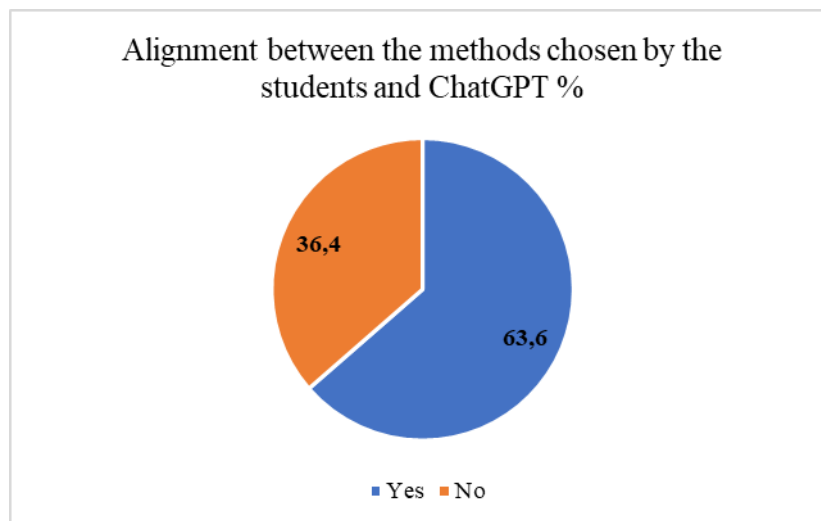
In the experiment, participants were allowed to choose the decision-making problem, the situation, and the decision-making procedure to be applied. Of the group, 54.5% (12 persons) selected a workplace-related decision situation, while 45.5% (10 persons) opted for a private decision situation as the topic of the experiment. An overwhelming majority of the students (14 persons, 63.7%) used the “Arguments and Counterarguments” procedure to solve their problem; 4 persons (18.2%) chose the “Paired Ranking” method, 3 persons (13.6%) employed the “Tree Diagram,” and 1 person (4.5%) opted for the “Decision Tree” method.

When soliciting ChatGPT’s opinion for solving the decision-making problems, it was observed that similar to the students, the chatbot most frequently employed the “Arguments and Counterarguments” procedure (in 40.9% of cases). Interestingly, its second most frequently recommended method (36.4%) was a new procedure, the “Filter Grid,” which was not chosen by any of the students; additionally, the AI used the “Decision Tree” and “Paired Ranking” methods in 9.1% of cases each, and in one case (4.5%) it employed the “Tree Diagram” method to reach its decision. The comparison of the decision-making methods chosen by the students and ChatGPT is illustrated in Diagram 2.



2. Diagram. Comparison of decision-making procedures chosen by the students and ChatGPT.

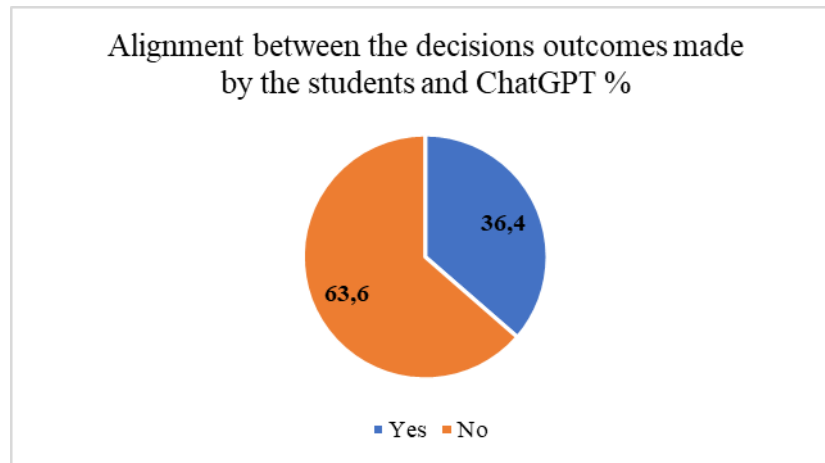
The first part of hypothesis H1, which posited that “the decision-making methods chosen by the students and ChatGPT are not identical,” was not confirmed in the sample, as in the majority of cases (14 cases, 63.6%) the method chosen by the students and the AI was the same; only in 8 cases (36.4%) did the chatbot employ a different method than that chosen by the students. The second part of H1 – that the chosen procedures are associated with the nature of the decision-making situation – was statistically confirmed for the students’ method selections: a significant relationship was found between the decision situation and the types of procedures chosen (based on the Pearson Chi-square statistic, $p = 0.029 < 0.05$); however, regarding ChatGPT’s procedure selection, this association was not statistically confirmed ($p = 0.105 > 0.05$). The alignment between the decision-making methods chosen by the students and ChatGPT is illustrated in Diagram 3.



3. Diagram. Alignment between the decision-making methods chosen by the students and ChatGPT.

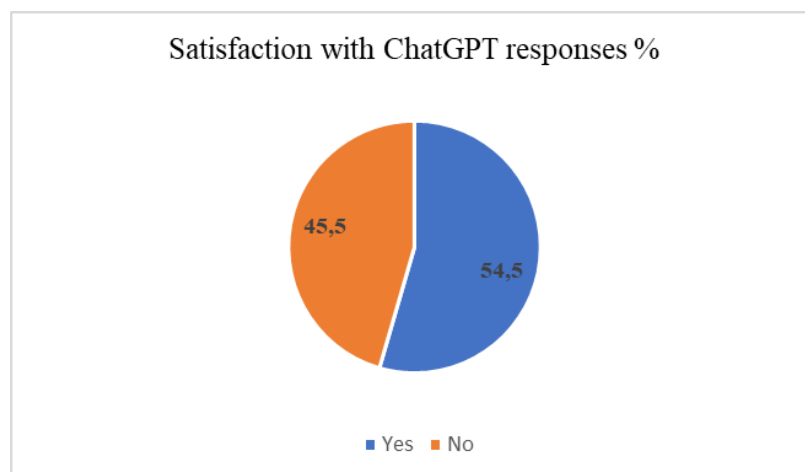
Concerning the alignment between the decisions reached by the students and ChatGPT, it can be observed that the ratio was exactly reversed relative to the chosen methods; that is, in the majority of cases (14 cases, 63.6%), the students and the chatbot arrived at different decisions. Thus, the first part of hypothesis H2 is confirmed, namely

that in most cases (63.6%) the outcomes of human and machine decision-making were not identical; however, the assertion that the concordance of decision outcomes is determined by the concordance of the chosen procedures was not confirmed according to the cross-tabulation analysis ($p = 0.933$). The alignment between the decision outcomes made by the students and ChatGPT is illustrated in Diagram 4.



4. Diagram. Alignment between the decision outcomes made by the students and ChatGPT.

Due to the substantial discrepancies between the decisions made by the students and those made by the AI, 63.6% of the students expressed their dissatisfaction with the outcomes produced by ChatGPT; only those students whose decisions coincided with those of the chatbot reported satisfaction. However, the assertion of hypothesis H3 was not statistically confirmed, as the Chi-square statistics did not reveal a significant relationship between the variables ($p = 0.145$). That is, in the general population, the concordance between the decisions made by the students and ChatGPT does not significantly determine the students' satisfaction with the chatbot's responses. The students' satisfaction with ChatGPT's responses is illustrated in Diagram 5.



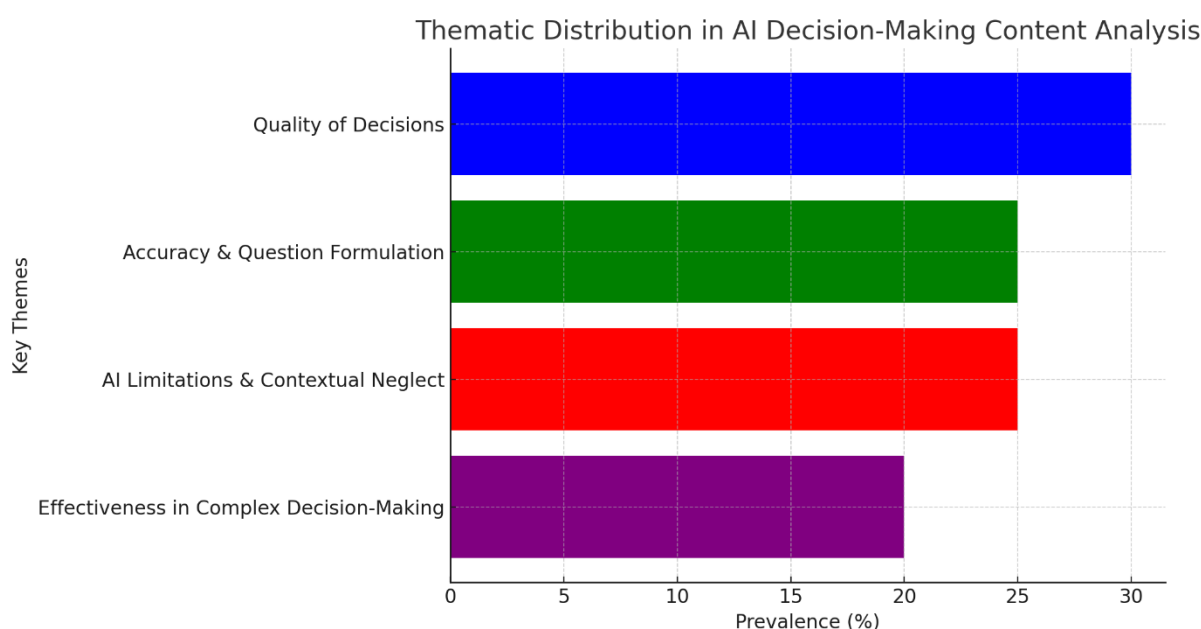
5. Diagram. Students' satisfaction with ChatGPT's responses.

The statistical analysis only partially confirmed the hypotheses. Although the sample results were generally affirmative, the Chi-square statistics did not verify significant relationships between the variables. In H1, while the hypothesis that the decision-making methods chosen by the students and ChatGPT are not identical was not confirmed in the sample, the decision situation significantly determined the methods selected in the student

population. In H2, it was confirmed that the students and ChatGPT did not reach the same decision; however, the differences did not depend on the concordance of the chosen methods. Finally, in H3, the research results indicate that the concordance between the decisions made by the students and ChatGPT does not have a significant effect on the students' satisfaction with ChatGPT's responses in the general population.

5.2 Content Analysis of Opinions

In the content analysis of the opinions, we examined users' articulated experiences with the application of artificial intelligence – specifically ChatGPT – in decision-making processes. The analysis revealed several key themes and trends that encapsulate the role and impact of ChatGPT in decision-making. These key themes include: (1) the quality, concordance, or divergence of decisions; (2) the significance of accuracy and question formulation; (3) the limitations of AI and its neglect of local circumstances; and (4) the effectiveness of artificial intelligence in complex decision-making. The *thematic distribution chart* illustrates the relative prevalence of key themes identified in the content analysis shown in Diagram 6.



6. Diagram. The thematic distribution chart in AI decision-making content analysis.

According to the majority of respondents, AI decision-making is characterized by a structured, objective, and data-driven approach. The solutions generated by AI are based on logical principles and are capable of thoroughly weighing the pros and cons. One respondent stated: *“ChatGPT endeavored to provide a comprehensive answer based on the available information and the question I supplied, to identify the optimal decision-making method.”*

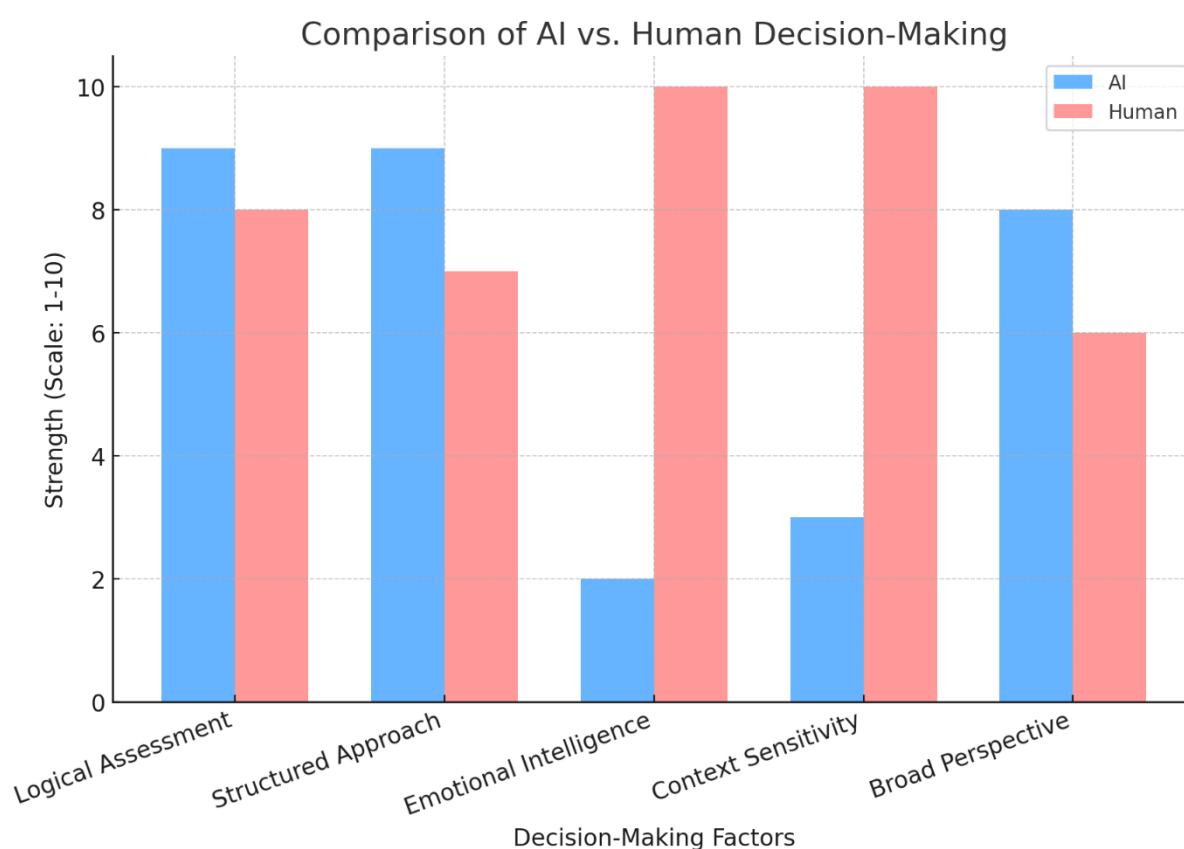
At the same time, several individuals pointed out that AI is incapable of considering emotional and contextual factors: *“It did not take local conditions and specific characteristics into account, but rather formulated the decision-making process factually, based on the text of the law.”*

In the respondents' view, emotional factors, local characteristics, and intuition are crucial elements of human decision-making. They emphasized that these aspects represent components of the decision-making process that

AI cannot replace: *“AI may play a role in the preparation of decisions, but it is unlikely ever to substitute for the complex thought processes and evaluative methods inherent in human cognition.”*

Several respondents also noted that there are numerous similarities between AI and human decision-making, particularly regarding the logical assessment of arguments. Nonetheless, the generalized approach adopted by AI does not fully capture the complexity of human thought.

The importance of human intuition and emotions was given prominent emphasis on opinions. One respondent noted: *“Decisions are primarily based on an individual’s self-awareness.”* Although AI may facilitate an objective approach, it does not substitute for human flexibility: *“Artificial intelligence largely relies on the provided prompts and inquiries, yet it does not examine the problem from every participant’s perspective.”* The comparison of AI vs. human decision-making illustrates the overlap and divergence in their approaches shown in Diagram 7.

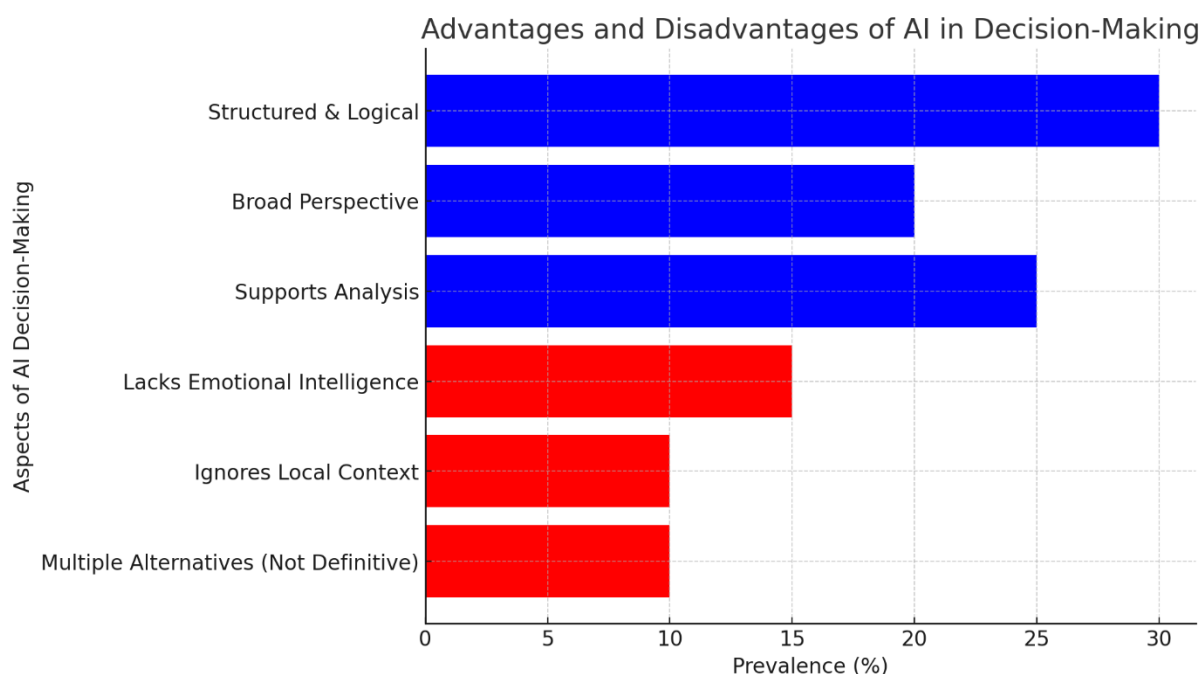


7. Diagram. The comparison of AI vs. human decision-making in the opinion of respondents.

Among the advantages of AI responses, the structured approach was frequently mentioned. AI clearly and transparently organizes problems. As one respondent remarked: *“ChatGPT and I both concluded that it is worthwhile to take the risk, as the new job could be profitable in the long term.”* Additionally, the broad perspective employed by AI was highlighted, as it often raises considerations that users might not have otherwise taken into account: *“Artificial intelligence has introduced solutions or decision pathways that were either long forgotten or entirely new to me.”*

Regarding the disadvantages of AI responses, it was noted that these issues partly stem from the lack of emotional intelligence. AI is unable to consider emotional aspects, which are fundamental elements of human decision-

making: “It is currently not equipped with emotional intelligence, so formulating an ‘overly bureaucratic’ policy is merely a task for it.” Furthermore, due to its general approach, AI tends to neglect local specifics and does not always adapt to particular situations: “It did not render an immediate, unequivocal decision when considering only one aspect.” The *pros and cons distribution chart* highlights the advantages (blue) and disadvantages (red) of AI-based decision-making as perceived by respondents, shown in Diagram 8.



8. Diagram. The pros and cons distribution chart of AI in decision-making.

The respondents agreed that AI does not replace but rather complements human decision-making. AI supports structuring thought processes and introducing new perspectives: “Artificial intelligence can even influence a simple decision; although it will not replace human thinking, it rather supplements it.”

The content analysis of opinions indicated that while AI offers significant support in weighing pros and cons, it lacks human intuition and contextual sensitivity. Generally, respondents found the application of AI useful in the preparatory stages of decision-making; however, they stressed that the human element must continue to play a decisive role. Future developments in AI should place greater emphasis on integrating emotional intelligence and contextual factors. In its current form, AI represents a valuable supportive tool, particularly in formulating systematic and data-driven responses.

5.3 Results Summary

The study proposed three core hypotheses to explore the interplay between human and AI decision-making in public administration higher education settings. Returning to these hypotheses formulated at the beginning of the research, the results can be summarized as follows:

H1: Differences in decision-making methods – It was hypothesized that students and ChatGPT would choose different decision-making methods based on the nature of the problem. The results showed that while the methods

were often the same, students' choices were significantly influenced by the decision-making situation, while ChatGPT's choices were not.

H2: Differences in decision outcomes – The study predicted that the decisions made by students and ChatGPT would not be identical. This hypothesis was confirmed, as students and the AI reached different conclusions 63.6% of the time. However, the assumption that these differences were due to method selection was not statistically supported.

H3: Student satisfaction with AI decisions – It was hypothesized that student satisfaction with ChatGPT's decisions would depend on how closely the AI's outcome matched their own. While students were generally dissatisfied when AI decisions differed from their own, statistical analysis did not confirm a significant relationship between decision matching and satisfaction.

Although hypothesis H3 was not statistically confirmed, the qualitative research revealed how students perceived the involvement of ChatGPT in decision-making. The majority of students rated the responses provided by ChatGPT positively and felt that the AI assistance added value to their decision-making processes. It was confirmed that ChatGPT can be a useful tool to support decision-making, especially in cases where more information needs to be collected and synthesized quickly. However, the limitations of AI are also evident, in particular, the inability to take into account local or specific circumstances and the importance of precise question formulation.

6. Conclusions and Recommendations

This study has demonstrated that integrating ChatGPT into higher education, specifically in the realm of managerial decision-making, can yield outcomes that are both reliable and complementary to human judgment. Although the decision-making methods employed by ChatGPT and the students were not always identical, their final outcomes frequently converged, indicating that despite methodological differences, AI can generate decisions that are largely in line with human reasoning. A majority of the students expressed satisfaction with the AI-generated decisions, particularly when these were consistent with their own. However, the study also highlights significant limitations: ChatGPT's decision-making process, while objective and systematic, sometimes neglected essential local and contextual factors, and tended to offer multiple alternatives rather than a definitive recommendation. These findings underscore the need to view AI as a supportive tool that should be integrated with, rather than replace, human decision-making, especially in complex scenarios requiring contextual awareness.

To enhance the integration of ChatGPT in teaching decision-making in public administration and similar disciplines, the following recommendations are proposed:

1. *Contextual integration:* Future developments of AI decision-support tools should aim to incorporate local economic, political, and cultural factors to ensure that recommendations are contextually relevant.
2. *Enhanced training:* Both educators and students should receive targeted training on the effective use of AI tools. This includes developing skills in prompt engineering and critical evaluation of AI outputs to maximize the benefits of AI while mitigating its limitations.

3. *Broader research*: Further research should be conducted with larger and more diverse samples to validate the findings and explore variations in decision-making across different contexts and academic disciplines.
4. *Ethical frameworks*: Establish clear guidelines and ethical frameworks for AI integration in educational settings to ensure that the use of such tools does not compromise critical thinking or academic integrity.
5. *Hybrid decision-making models*: Educational strategies should promote a hybrid model where AI-generated insights are used to complement human expertise. This approach can help decision-makers leverage the strengths of both systematic data analysis and human intuition.

These conclusions and recommendations offer a roadmap for leveraging AI to enhance decision-making education while addressing its inherent challenges and ensuring that human oversight remains central in the decision-making process.

References

- Abulaiti, M. (2024). Higher Education in the Era of AI. In: G. Morris, S. Kozuch (Eds.), *Developments and Future Trends in Transnational Higher Education Leadership*. IGI Global Scientific Publishing. pp. 244-265. <https://doi.org/10.4018/979-8-3693-2857-6.ch014>
- Aljaž, T. (2024). Leveraging ChatGPT for Enhanced Logical Analysis in the Theory of Constraints Thinking Process. *Organizacija*, 2024, vol. 57 no. 2, pp. 202-214. <https://doi.org/10.2478/orga-2024-0014>
- Aristovnik, A. (2024). Exploring the global impact of ChatGPT in higher education from students' perspective. *International Conference on Business, Economics, Law, Language & Psychology*. Vol. 2024, pp. 335-336. <https://doi.org/10.20319/icssh.2024.335336>
- Diantoro, K., Munthe, E. S., Herwanto, A., Mubarak, R., Istianingsih, N. (2024). The role of ChatGPT in business information systems to support strategic decision making in medium-scale enterprises. *Jurnal Minfo Polgan*, Vol. 13 No. 1, pp. 382-389 <https://doi.org/10.33395/jmp.v13i1.13673>
- Dikilitaş, K., Furenes Klippen, M. I., Keles, S. (2024). A Systematic Rapid Review of Empirical Research on Students' Use of ChatGPT in Higher Education. *Nordic Journal of Systematic Reviews in Education*, Vol. 2(1), pp. 103-125. <https://doi.org/10.23865/njsre.v2.6227>
- Chuma, E., L., A. M., Alves, G. G., Oliveira, G. (2024). Evolution of generative AI for business decision-making: A case of ChatGPT. *Management Science and Business Decisions*, Vol. 4 No. 1, pp. 5-14. <https://doi.org/10.52812/msbd.87>
- Jensen, L. X., Buhl, A., Sharma, A., Bearman, M. (2024). Generative AI and higher education: A review of claims from the first months of ChatGPT. *The International Journal of Higher Education*, Springer. Vol. 88, Issue 6, pp. 1-17. <https://doi.org/10.1007/s10734-024-01265-3>

- Jiang, T. Y., Liu, E., Baig, T., Li, Q. (2024). Enhancing decision-making in higher education: Exploring the integration of ChatGPT and data visualization tools in data analysis. *New Directions for Higher Education*, Wiley. Vol. Fall 2024, Issue 207, pp. 15-29. <https://doi.org/10.1002/he.20510>
- Kumar, P. T. (2024). Leveraging conversational AI for enhanced decisioning: Integrating ChatGPT with Pega's Adaptive Decision Manager. *Journal of Software*, Vol. 19(2), pp. 42-51, <https://doi.org/10.17706/jsw.19.2.42-51>
- Li, M. (2024). The Impact of ChatGPT on Teaching and Learning in Higher Education: Challenges, Opportunities, and Future Scope. In M. Khosrow-Pour, D.B.A. (Ed.), *Encyclopedia of Information Science and Technology*, Sixth Edition. pp. 1-20. <https://doi.org/10.4018/978-1-6684-7366-5.ch079>
- Nebieridze, M., Jojua, N. (2024). Towards the use of artificial intelligence (ChatGPT) in higher education: Students' perspective. *Journal of Education in Black Sea Region*, Vol. 9 No. 2. pp. 1-15. <https://doi.org/10.31578/jebs.v9i2.313>
- Nivetha, P., Prasanth, S. (2024). Transforming Management Decision-Making: Role of ChatGPT. *Shanlax International Journal of Management*, Vol. 11(4), pp. 29-33. <https://doi.org/10.34293/management.v11i4.7486>
- Shahzad, M.F., Xu, S., Javed, I. (2024). ChatGPT awareness, acceptance, and adoption in higher education: the role of trust as a cornerstone. *Int J Educ Technol High Educ* 21, No. 46. <https://doi.org/10.1186/s41239-024-00478-x>
- Song, X., Zhang, J., Yan, P., Hahn, J., Krüger, U., Mohamed, H., Wang, G. (2024). Integrating AI in college education: Positive yet mixed experiences with ChatGPT. *Meta-Radiology*, Volume 57, Issue 4, pp. 1-4. <https://doi.org/10.1016/j.metrad.2024.100113>
- Xu, W., Kotecha, M. C., McAdams, D. A. (2024). How good is ChatGPT? An exploratory study on ChatGPT's performance in engineering design tasks and subjective decision-making. *Proceedings of the Design Society*, 4, 2307–2316. <https://doi.org/10.1017/pds.2024.233>

Brief description of the decision-making methods used in the experiment.

Decision-making method	Description	Purpose	Example
I. Decision Tables	Decision tables organize and analyze decision-making scenarios in a tabular format. They consist of conditions (criteria or variables) and their corresponding actions or outcomes.	To handle complex, rule-based decisions by systematically evaluating all combinations of criteria.	Choosing a supplier based on price, quality, and delivery time.
1. Pros and Cons	<i>This method involves creating a list of advantages (pros) and disadvantages (cons) for each option. The lists are compared to determine the best choice.</i>	<i>To weigh options qualitatively and make straightforward comparisons.</i>	<i>Deciding whether to outsource a project by evaluating cost savings (pro) versus quality control risks (con).</i>
2. Paired Ranking	<i>Options are compared in pairs, with preferences recorded for each comparison. Scores are totaled to rank the options.</i>	<i>To prioritize options based on subjective judgments or preferences.</i>	<i>Choosing the best candidate for a managerial role by comparing their qualifications pairwise.</i>
3. Grid Analysis	<i>Also known as a decision matrix, grid analysis scores options against criteria that are weighted by importance. The scores are totaled to identify the best choice.</i>	<i>To make objective, data-driven decisions that account for multiple criteria.</i>	<i>Selecting a marketing strategy based on cost, reach, and effectiveness.</i>
II. Decision Charts	Decision charts visually represent choices, alternatives, and outcomes, often in a flowchart-like structure. They clarify the steps and consequences of decisions.	To simplify complex decision-making by mapping out potential paths.	Deciding whether to launch a new product based on market research results.
4. Decision Tree Analysis	<i>A decision tree is a graphical tool that models decisions, potential outcomes, probabilities, and costs. Branches represent choices, and their consequences are mapped out.</i>	<i>To evaluate decisions involving uncertainty and multiple steps.</i>	<i>Assessing whether to invest in a new technology based on projected returns and associated risks.</i>
5. Flow Diagram	<i>Flow diagrams depict the sequence of decisions and their potential outcomes using symbols and arrows. They illustrate the process from start to finish.</i>	<i>To understand the decision-making process step by step and ensure no aspect is overlooked.</i>	<i>Developing a process for resolving customer complaints.</i>
6. Cause-and-Effect Diagram	<i>Also called a fishbone or Ishikawa diagram, it identifies the root causes of a problem by organizing potential causes into categories.</i>	<i>To diagnose issues and focus on addressing root causes rather than symptoms.</i>	<i>Investigating the reasons for declining product quality.</i>