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Teaching decision-making in public administration using AI: A comparative study of student and ChatGPT approaches

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Abstract

The rapid integration of artificial intelligence (AI) into higher education is transforming how decision-making is taught, particularly in fields such as public administration, where complexity, uncertainty, and accountability are central. This study examines how students engage with AI-supported decision-making by comparing human and AI-generated approaches in two educational contexts: public management and business management. Using an experimental classroom design, students were asked to solve a structured decision-making task, apply a selected method, and compare their solutions with recommendations generated by ChatGPT. The study analyzes differences in decision-making methods, outcome alignment, and student satisfaction, complemented by qualitative reflections. The findings reveal significant differences between human and AI approaches to decision-making, while outcome alignment varies independently of methodological similarity. Student satisfaction is strongly associated with agreement between human and AI decisions, suggesting the presence of confirmation effects. Differences between public and business management students are more pronounced in qualitative reflections, particularly regarding the importance of contextual, ethical, and emotional considerations. The results highlight the importance of critically engaging with AI in decision-making education. Rather than replacing human reasoning, AI tools can support reflective learning by enabling comparison, evaluation, and deeper understanding of decision processes. The study contributes to emerging research on AI in public administration education by linking empirical findings to theoretical perspectives on bounded rationality and algorithmic decision-making.

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Introduction

In recent years, the rapid development of artificial intelligence (AI) has significantly reshaped higher education, including the teaching of decision-making in public administration (PA) and management programs. Among these technologies, large language models such as ChatGPT, developed by OpenAI, have gained widespread attention due to their ability to generate human-like text, synthesize complex information, and provide structured responses to problem-solving tasks. These capabilities position AI as a potentially valuable tool in educational settings, particularly in supporting analytical thinking and decision-making processes.

The integration of AI into higher education offers several *opportunities*, including enhanced decision support, rapid information processing, and the possibility of personalized learning experiences. At the same time, it introduces important *challenges*, such as algorithmic bias, lack of transparency, over-reliance on automated outputs, and limited sensitivity to contextual, social, and ethical dimensions of decision-making. These tensions have generated a growing body of research examining both the benefits and risks of AI-assisted learning, especially in fields where decision-making plays a central role.

Despite this emerging literature, there remains a notable gap in understanding how AI-supported decision-making interacts with *different educational contexts*, particularly in comparative terms. Business management and public management education are grounded in distinct decision-making logics: the former typically emphasizes efficiency, optimization, and structured problem-solving, while the latter often involves complexity, ambiguity, and competing public values. However, limited empirical evidence exists on how these differences influence the ways students engage with AI-generated recommendations and how closely their decisions align with those produced by AI systems.

To address this gap, this study investigates the use of ChatGPT as a *decision-support tool* in two higher education contexts. The empirical analysis is based on a *mixed-method, quasi-experimental design* involving two groups of master's students: business management students enrolled in a "Managerial Decision Making" course at Collegium Humanum Warsaw Management University, and public management students participating in a "Public Service Leadership and Management" course at Ludovika University of Public Service. Students were asked to solve a decision-making task and subsequently compare their own approach and outcomes with those generated by ChatGPT.

The study focuses on three key dimensions: (1) differences in *decision-making method selection*, (2) the degree of *alignment between human and AI-generated decision outcomes*, and (3) *student satisfaction* with AI-supported decision-making. By examining these dimensions, the research aims to provide a more nuanced understanding of how AI tools function in different educational and disciplinary contexts.

Conceptually, the study is grounded in a comparative pedagogical framework that integrates insights from decision theory, management education, and AI-assisted learning. In particular, it draws on the notion that decision-making is not purely technical, but shaped by contextual and institutional factors, which may influence both human reasoning and the interpretation of AI-generated outputs. This perspective allows the study to move beyond performance comparison and explore how students engage with AI as a *reflective and interpretive tool*.

Based on the theoretical framework and the identified gaps in the literature, the study addresses the following research questions:

- *RQ1*: How do students' decision-making method choices differ between business management and public management programs, and how do these compare with ChatGPT's suggested methods?
- *RQ2*: To what extent do student decision outcomes align with ChatGPT-generated recommendations across the two educational contexts?
- *RQ3*: How does the alignment between student and AI-generated decisions relate to student satisfaction with ChatGPT's involvement in the decision-making process?

This study contributes to the literature by providing empirical evidence on how students in different disciplinary contexts engage with AI in decision-making tasks, and by linking decision outcome alignment with student satisfaction in an experimental educational setting.

The remainder of the paper is structured as follows. The next section reviews the relevant literature on differences between business and public management education, as well as the role of AI in decision-making and personalized learning. This is followed by the presentation of research design, results, and discussion of findings in relation to existing theoretical and empirical work, and finally, the conclusion and implications.

Literature review

Decision-making in business and public management education

Decision-making constitutes a core element of both business management and public management education; however, the two domains differ significantly in their underlying logics, institutional environments, and pedagogical approaches. Business management education is typically oriented toward efficiency, profit maximization, and competitive strategy, reflecting the operational logic of the private sector (Rana, 2012). In contrast, public management focuses on governance, accountability, and public service delivery within politically and socially embedded systems (Elmore, 1986).

These differences are reflected in both curriculum design and teaching practices. Business management programs often emphasize structured analytical tools, strategic planning, and performance optimization, frequently supported by case-based learning approaches. While effective for developing practical skills, this focus has been criticized for underrepresenting ethical considerations and broader social responsibilities (Dhillon, 2009). By contrast, public management education places greater emphasis on policy

analysis, institutional complexity, and legal frameworks, preparing students to operate in uncertain and politically influenced environments (Averch and Dluhy, 1997).

Pedagogically, business education tends to adopt skills-based and performance-oriented methods, often incorporating competitive and simulation-based learning (JyothiSreedhar, 2023). Public management education, however, prioritizes critical thinking, contextual awareness, and sensitivity to societal needs (Kennedy, 2013). Public sector decision-makers must also operate under stricter accountability constraints and often pursue ambiguous or negotiated goals, unlike the clearer performance indicators typical of the private sector (Tangsgaard et al., 2022). Ethical considerations and societal impacts, therefore, play a more prominent role in public management (Chandler, 1988).

These differences can be further understood through the concept of bounded rationality, as developed by Herbert Simon (1997), which highlights that real-world decision-making is constrained by limited information, cognitive capacity, and contextual uncertainty. Similarly, research on human cognition emphasizes that decision-making is shaped by heuristics and biases rather than purely rational calculation, as discussed by Daniel Kahneman (2011). In more complex environments, such as public administration, decision-making often resembles context-sensitive, experience-based judgment rather than formal optimization (Klein, 2008).

These theoretical perspectives suggest that business management students are more likely to rely on standardized and method-driven approaches, while public management students may adopt more diverse and context-sensitive strategies. Despite these differences, there is a growing recognition that integrating perspectives from business and public management education can enhance students' ability to address complex, cross-sector challenges (Ticlau, 2014).

AI in decision-making education: Opportunities and limitations

The application of artificial intelligence in higher education has gained increasing attention, particularly in the context of decision-making. AI systems such as ChatGPT enable rapid data processing, structured reasoning, and the generation of alternative solutions, positioning them as powerful decision-support tools.

In business management education, AI is widely applied in predictive analytics and decision modeling, supporting strategic planning and operational optimization (Khan and Mahade, 2023; Kvam et al., 2024). This reflects a broader transformation in which AI is increasingly seen as complementing human decision-making rather than replacing it (Brynjolfsson and McAfee, 2017). Empirical research also suggests that AI-supported tools can enhance efficiency and provide actionable insights (Farooq et al., 2025; Siminto et al., 2023).

At the same time, a growing body of literature highlights the limitations and risks of AI use. AI systems are not neutral tools but shape decision environments through data-driven logics (Zuboff, 2019). Moreover, algorithmic systems may reproduce and amplify existing biases, particularly in socially complex decision-making contexts (O'Neil, 2016). These concerns are especially relevant in education, where uncritical reliance on AI-generated outputs may limit the development of independent reasoning.

The issue of transparency is particularly important. The so-called "black box" nature of AI systems means that the internal logic of output generation is not directly observable, limiting accountability and interpretability (Pasquale, 2015). This has important implications for decision-making education, where understanding the reasoning process is as important as the outcome.

Recent contributions on this topic further emphasize these concerns. For example, Morrison et al. (2023) highlight that the increasing use of algorithmic systems in public services raises fundamental ethical challenges that should be explicitly addressed in public administration education. Similarly, studies on the use of ChatGPT in higher education suggest that AI can function as a collaborative learning partner, supporting engagement and skill development, while also requiring careful pedagogical framing (Muniandy and Selvanathan, 2024).

AI in business and public management contexts

The effectiveness of AI-supported decision-making varies significantly across contexts. In business environments, decision problems are often structured, data-driven, and performance-oriented, which increases the likelihood that AI-generated recommendations align with human decision-making processes. This alignment can be attributed to the compatibility between AI's formalized reasoning patterns and the optimization-oriented logic of business decision-making.

In contrast, public management contexts are characterized by higher levels of complexity, ambiguity, and value pluralism. Decision-making in this domain requires balancing competing interests, interpreting institutional constraints, and considering broader societal impacts. These features limit the applicability of purely algorithmic reasoning, particularly when AI systems fail to capture contextual, social, and ethical dimensions.

Empirical research highlights that AI applications in public sector contexts may produce suboptimal or contested outcomes when contextual factors are insufficiently addressed (Abdurohman, 2025; Söker, 2024). Moreover, algorithmic systems may reinforce hidden biases and reduce transparency, further complicating their use in public decision-making (O'Neil, 2016; Pasquale, 2015). These concerns are closely linked to the ethical challenges of AI governance discussed in recent public administration literature (Morrison et al., 2023).

At the same time, AI-supported personalized learning has been shown to increase student engagement and motivation (Khan and Mahade, 2023; Siminto et al., 2023). However, there is also a risk that algorithmic learning patterns may lead to homogenization of perspectives, reducing diversity in decision-making approaches (Abdurohman, 2025). This issue is particularly relevant in public management education, where exposure to multiple perspectives is essential.

Recent research also highlights the growing importance of integrating AI-related competencies into public administration curricula, emphasizing the need to prepare students for AI-supported governance environments (Kamukapa et al., 2024). Bibliometric analyses further confirm the growing importance of artificial intelligence in public

administration research and practice, highlighting its expanding role in decision-making, service delivery, and governance processes (Aristovnik et al., 2024).

AI and personalized learning in decision-making education

AI technologies are increasingly associated with personalized and adaptive learning environments that can tailor educational experiences to individual needs. AI-based virtual tutors provide real-time feedback and adaptive guidance, supporting both cognitive and affective learning processes (Rathika et al., 2024). This aligns with the concept of "intelligence augmentation," where AI enhances rather than replaces human cognitive capabilities (Luckin, 2018).

Empirical studies demonstrate that AI-driven decision-support applications can enhance analytical capabilities and improve learning outcomes in higher education settings, particularly in complex decision-making scenarios (Lestari et al., 2024). Adaptive learning platforms have demonstrated potential in improving student engagement and academic performance (Rekha et al., 2024; Taşkın, 2025; Zaharuddin and Yao, 2024). However, concerns remain regarding technological dependency, reduced human interaction, and challenges in scalability (Iman et al., 2024). More broadly, AI in education should be understood as augmenting, rather than replacing, human teaching and learning processes (Selwyn, 2019).

In decision-making education, the effectiveness of AI-supported learning depends on how students engage with AI-generated outputs. Without structured guidance, students may adopt a passive or confirmatory approach, accepting AI recommendations without critical evaluation. This underscores the importance of integrating AI into pedagogical frameworks that promote reflection, critical thinking, and contextual interpretation.

Theoretical integration and hypothesis development

The literature reviewed above highlights a fundamental tension between structured, data-driven decision-making and context-sensitive, experience-based judgment.

First, differences in educational context and decision-making logic suggest that *students' choice of decision-making methods will vary across programs* and may also diverge from AI-generated recommendations. This provides the basis for hypotheses related to method selection (H1).

Second, the literature indicates that AI-generated outputs are more likely to align with human decisions in *structured and optimization-oriented environments*, while divergence is expected in more complex and context-dependent settings. This underpins hypotheses concerning *decision outcome alignment* (H2).

Third, prior research suggests that users' evaluations of AI are influenced by the degree of agreement between AI outputs and their own judgments, forming the basis for hypotheses related to *student satisfaction* (H3).

In consequence, the following hypotheses were proposed:

- *H1a:* The decision-making methods chosen by the students vary from one another and from the method selected by ChatGPT. *H1b:* The methods selected by business

management students present a more uniform picture, while those chosen by public management students show a more diverse one. *H1c:* For both groups, the methods selected by ChatGPT reflect a diverse picture.

- *H2a:* The outcomes of decisions made by students and ChatGPT vary based on the homogeneity of the chosen methods. *H2b:* The outcomes of decisions made by business management students align more closely with those of ChatGPT due to method homogeneity, while the outcomes of decisions made by public management students differ more significantly from those of ChatGPT because of method heterogeneity.
- *H3a:* Satisfaction among students regarding ChatGPT's involvement varies depending on the uniformity of the decision outcomes. *H3b:* Business management students tend to report higher satisfaction with ChatGPT's involvement due to method homogeneity, whereas public management students report lower satisfaction owing to method heterogeneity.

Finally, the literature highlights the importance of *contextual and interactional factors*, such as task complexity and prompt quality, which may influence both AI-generated outputs and their interpretation. These factors are therefore incorporated as moderating variables in the conceptual framework visualized in Figure 1.

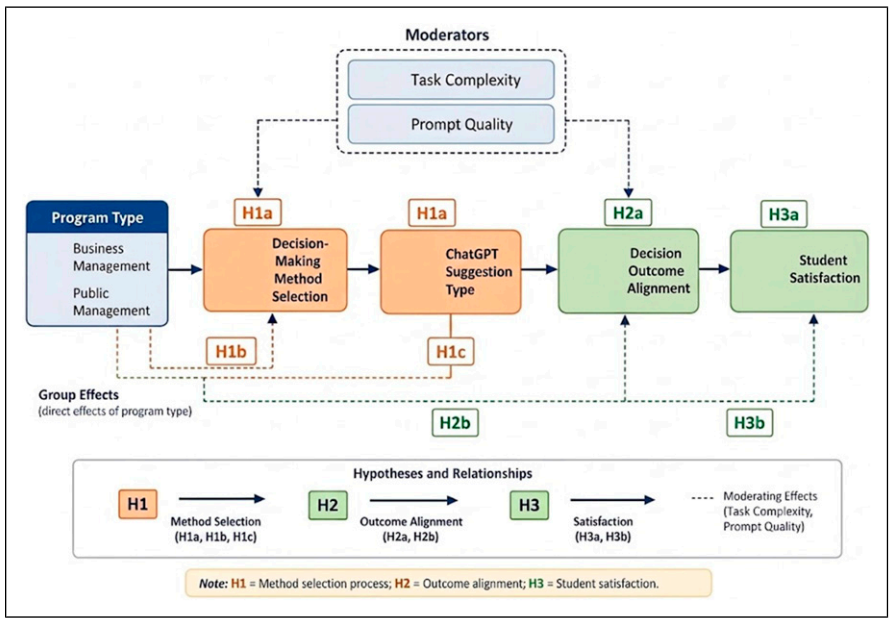

Figure 1. A conceptual framework of the impact of ChatGPT integration on method selection, outcome alignment, and satisfaction. Source: authors.

Methodology

Research design

This study employed a *mixed-method, comparative quasi-experimental design* to investigate differences between students' and AI-supported decision-making in two higher education contexts: business management and public management. The design combined quantitative analysis of decision-making patterns and outcomes with qualitative thematic analysis of students' reflections.

The study does not involve a randomized control group; instead, it compares two naturally occurring groups of students enrolled in different master's-level courses. In addition, within each group, students' own decision-making processes were compared with solutions generated by ChatGPT, allowing for *a within-subject comparison between human and AI-supported decision outputs*.

Participants

A total of *46 part-time MA students* participated in the study. Of these, *24 students (52.2%)* were enrolled in a business management course ("Managerial Decision Making") at Collegium Humanum Warsaw Management University, and *22 students (47.8%)* were enrolled in a public management course ("Public Service Leadership and Management") at Ludovika University of Public Service.

Participants were predominantly working professionals with relevant sectoral experience. The sample included a balanced gender distribution and a wide age range, with the majority of participants falling into the 31–50 age category. Given their professional background, participants brought real-world decision-making situations into the exercise, increasing the ecological validity of the study.

Task and procedure

The study was conducted as part of regular course activities in both programs. Students were asked to complete an *individual decision-making assignment* based on a real or realistic professional problem, typically drawn from their workplace context.

The task consisted of six sequential steps, illustrated in Figure 2:

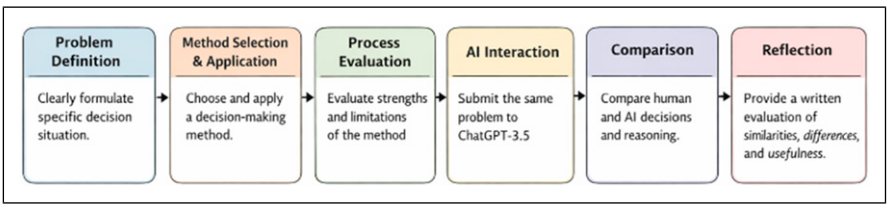

Figure 2. Process of the AI-supported decision-making task. Source: authors.

(1) *Problem definition:* Clearly formulate a specific decision situation.
(2) *Method selection and application:* Choose and apply a decision-making method (See Table 1).
(3) *Process evaluation:* Reflect on the strengths and limitations of the chosen method.
(4) *AI interaction:* Submit the same decision problem to ChatGPT-3.5 using structured prompts.
(5) *Comparison:* Compare their own decision-making approach and outcome with ChatGPT's generated recommendation and reasoning.
(6) *Reflection:* Provide a written evaluation of similarities, differences, and overall usefulness.

Before the assignment, students received a short methodological introduction to effective prompting using the *CRAFT framework* (Context, Role, Act, Format, Target). This ensured a minimum level of consistency in how students interacted with ChatGPT. To ensure consistency, students were instructed to submit the same problem description to ChatGPT using a standardized prompt structure, which included: (a) problem definition, (b) decision criteria, and (c) request for a recommended solution with justification.

Students were presented with the choice of decision methods outlined in Table 1. The selected methods represented commonly taught decision tools with varying degrees of structure and complexity, allowing students to compare intuitive, semi-structured, and structured approaches to problem solving.

Students submitted their work in written form, including the description of their decision problem, the applied method, the comparison with ChatGPT, and their final reflection. No control group was applied; instead, the study employed a within-task comparative design, where each participant's decision was compared to the corresponding AI-generated output.

Variables and measures

The study examined five main variables related to decision-making processes and AI interaction.

– *Decision-making method (categorical):* This variable captures the type of method selected by students (e.g., pros and cons analysis, decision tree, grid analysis) as well as the method suggested by ChatGPT. Methods were coded into categories reflecting their level of structure (intuitive, semi-structured, structured).

Table 1. Decision-making methods used in the decision-making experiment. Source: authors.

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

- *Methodological similarity (binary):* This variable indicates whether the decision-making method chosen by the student corresponds to the type of method suggested by ChatGPT (0 = no match, 1 = match).
- *Decision outcome (categorical):* The final decision selected by the student and the recommendation generated by ChatGPT.
- *Outcome alignment (binary):* This variable captures whether the student's final decision corresponds to the recommendation provided by ChatGPT (0 = no alignment, 1 = alignment).
- *Student satisfaction (binary):* Student satisfaction was measured using a single post-task question asking whether the participants found ChatGPT's contribution useful in supporting decision-making (0 = no, 1 = yes).

In addition to quantitative variables, qualitative data were collected through written reflections. These responses provided insights into students' perceptions of AI-supported decision-making, including perceived advantages, limitations, and ethical considerations.

Data analysis

The quantitative data were analyzed using *descriptive statistics and inferential statistical tests* to identify differences between groups and relationships between variables.

- *Pearson's chi-square test* (χ^2) was used to examine associations between categorical variables (e.g., program type and method choice, outcome alignment, satisfaction).
- *Fisher's exact test* was applied where expected cell counts were low.
- Statistical significance was assessed at the $p < 0.05$ *level.*

The qualitative data were analyzed using *thematic analysis following* Braun and Clarke (2006). The analysis involved: familiarization with the data, initial coding, identification of themes, review and refinement of themes, and definition and naming of themes.

The qualitative findings were used to complement and contextualize the quantitative results.

Ethical considerations

Participation in the study was voluntary. Students were informed about the purpose of the research, the use of their data, and their right to withdraw. Informed consent was obtained from all participants. All data were anonymized before analysis to ensure confidentiality and compliance with ethical research standards.

Results

Sample characteristics

The final sample consisted of *46 participants*, including *24 students (52.2%)* from the business management program and *22 students (47.8%)* from the public management program. Participants were predominantly part-time students with professional experience, occupied a range of professional positions, including middle and senior management roles in both private and public sector organizations. The sample showed a relatively balanced gender distribution (41.3% male, 58.7% female) and a concentration in the 31–50 age range, with an average of 37.8 years (SD = 9.5).

No statistically significant differences were identified between the two groups in terms of demographic characteristics; therefore, the groups were considered comparable for subsequent analyses.

Decision-making method choices by students

The majority (67.4%) of the students in the two groups combined used the "Pros and Cons" method to solve their problem; 10.9% used the "Paired Ranking" method, 8.7% used the "Grid Analysis" method, and a smaller number of students chose the other methods ("Flow Diagram", "Decision Tree Analysis", "Cause-and-Effect Diagram") to solve their problem.

Comparing the two groups, in both cases, the simpler decision-making methods were overwhelmingly used, suggesting that people generally prefer the more convenient, i.e., quick and easy solutions. Interestingly, two of the methods were chosen by students from only one group: e.g., the "Grid Analysis" method was only used by students in the Business Management course, while the "Flow Diagram" method was only chosen by students in the public management course; these are among the more complex methods, as shown in Figure 3.

Pearson's Chi-square statistics for the test of the difference between the two groups' choices show a significant difference ($p = 0.034 < 0.05$), which supports the hypothesis *H1a* that the two groups choose different decision-making procedures to solve their tasks. The statistical analysis supports hypothesis *H1b,* as a difference was observed in the selection of decision-making methods between Public Management (PM) and Business Management (BM) students. This indicates that the students' academic background significantly influences the methodological framework they apply when solving tasks with AI assistance.

Decision-making methods suggested by ChatGPT

To solve the decision problems, ChatGPT found that the chatbot, like the students, used the "Pros and Cons" decision procedure more often — 43.5% of the sample. The second most frequently recommended method (28.3%) was the "Grid Analysis"; 8.7% used the "Cause-and-Effect Diagram" and "Paired Ranking," while a smaller number utilized the "Decision Tree Analysis" and "Flow Diagram" to make

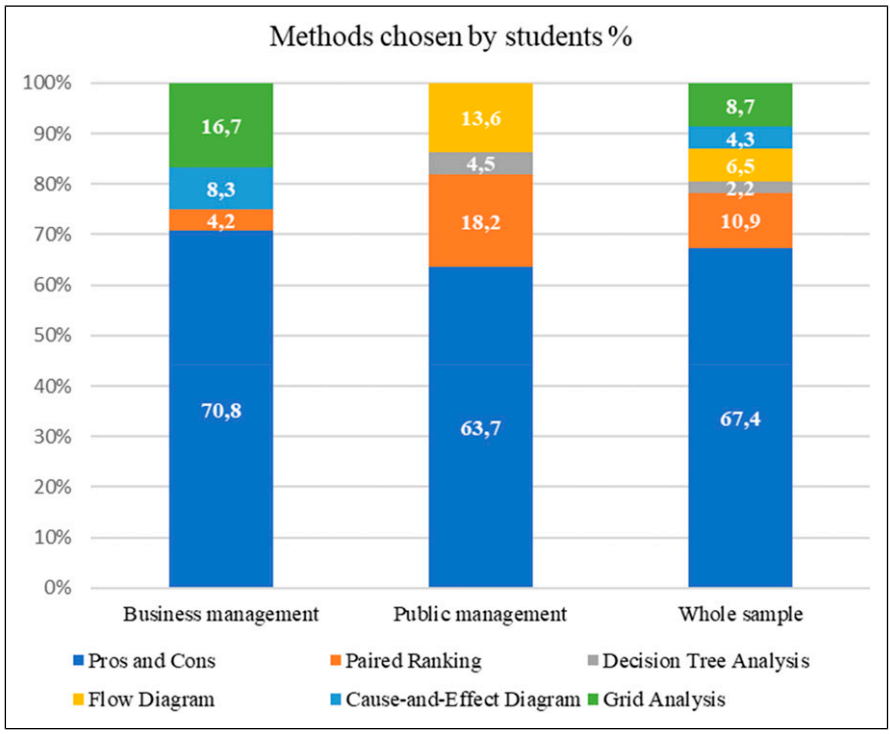

Figure 3. Distribution of decision-making methods selected by students. Source: authors.

their decision. However, it can be observed that for both groups, the AI sought a less "convenient" solution and was more diversified, aiming for an adequate decision that best fits the problem, as illustrated in Figure 4.

Statistical analysis indicates no significant difference in the distribution of methods selected by the AI across the two groups ($p = 0.398 > 0.05$). This suggests that the observed variations are likely attributable to random fluctuations rather than group-specific factors. These findings are consistent with hypothesis *H1c*, as the AI-generated methods exhibit high heterogeneity across a broad spectrum in both contexts, a trend clearly visualized in the corresponding graph.

Alignment between student and AI method choices

When comparing the decision-making methods chosen by students and ChatGPT and analysing the two groups separately regarding how the approaches of the human participants and AI differ, it is striking that the decision-making methods selected by students in the business management group differ much more (54.2%) than those chosen by students in the public management group (36.4%), as presented in Figure 5.

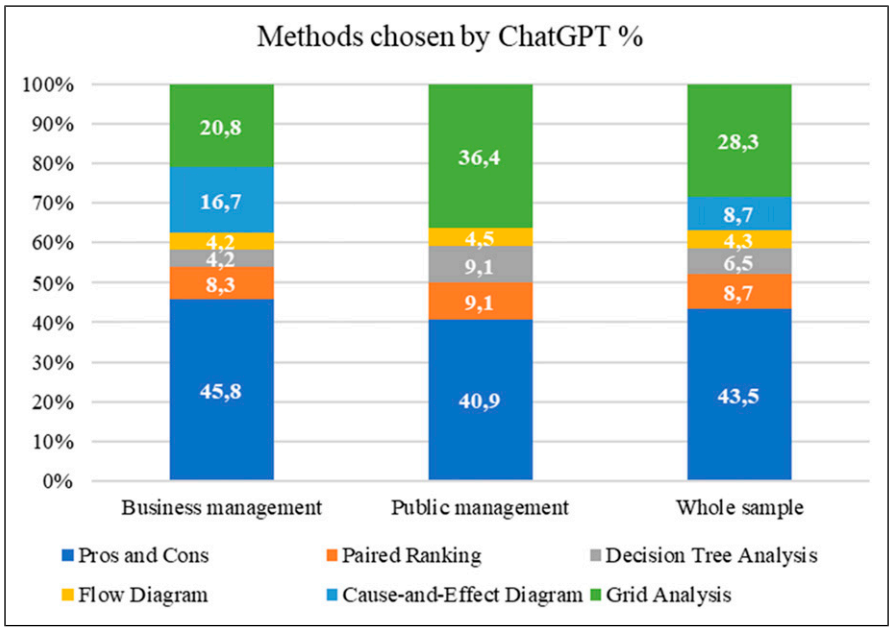

Figure 4. Distribution of decision-making methods selected by ChatGPT. Source: authors.

It is interesting to note, however, that while the students in the public management course did not select the "Grid Analysis" method at all as a solution to their problem, which offers a more complex solution, the AI recommended this method to them to a significant extent.

Alignment of decision outcomes

Regarding the consistency of outcomes from the decisions made by the students and ChatGPT, it can be noted that the proportion of the total sample aligns with that of the chosen methods, i.e., in most cases (54.3%), the students and the chatbot reached the same decision. Interestingly, when examining the two groups of students separately, we observe exactly the opposite proportions compared to the choice of method. The decisions made revealed a much higher proportion of agreement (70.8%) in decision outcomes between the human and the AI in the business management group than in the public management group, where a larger proportion (63.6%) of students and AI reached different outcomes, as shown in Figure 6.

These results demonstrate a significant difference between groups and provide statistical support for the hypothesis *H2b* ($p = 0.019 < 0.05$). The data shows that Business Management students tended to align more frequently with ChatGPT than their Public Management counterparts. However, when considering all the students in the two groups as a sample, the hypothesis *H2a* was not supported, as in most instances (54.3%), the human and AI decision outcomes were identical. Additionally, the claim that the

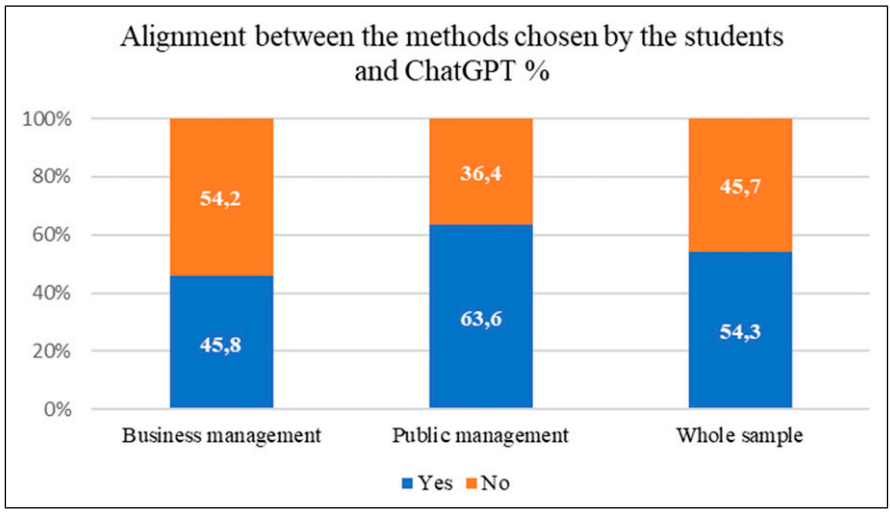

Figure 5. Alignment between the decision-making methods selected by students and ChatGPT. Source: authors.

similarity of the decision outcome was determined by the similarity of the chosen method was also unsupported by the statistics from the cross-tabulation analysis ($p = 0.727 > 0.05$; Fisher's exact test $p = 0.774$).

These results suggest that, despite differences in decision-making approaches, students across both groups arrive at similar conclusions to AI-generated recommendations at comparable rates.

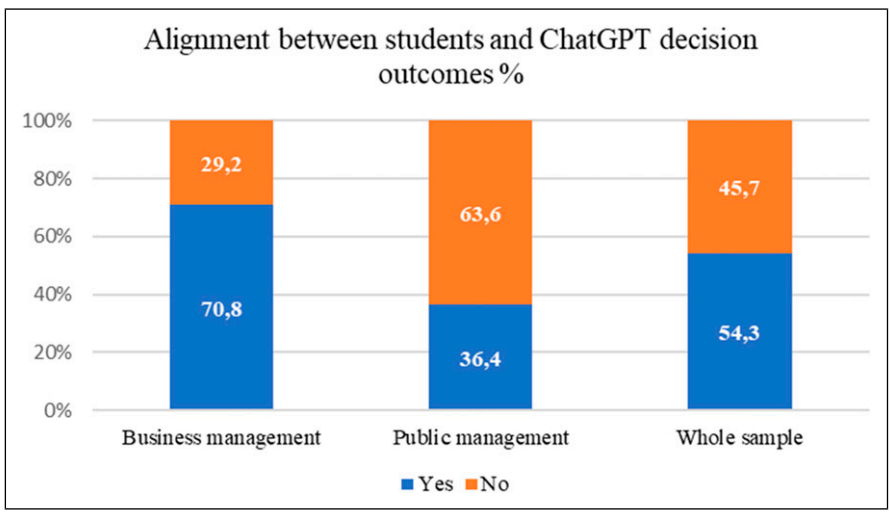

Figure 6. Alignment between students' and ChatGPT's decision outcomes. Source: authors.

Student satisfaction with AI-Supported decisions

Students' satisfaction with ChatGPT's decision-making contributions was strongly associated with the degree of alignment between their own and the AI's outcomes. Across the full sample, 65.2% expressed satisfaction when outcomes matched, while 34.8% expressed dissatisfaction when they diverged. The chi-square test supports this relationship, χ^2 (1, N = 46) = 17.32, p = 0.000 < 0.005, supporting hypothesis *H3a*. This indicates that student satisfaction is not a matter of chance but is significantly influenced by the consistency between the AI's recommendations and the students' own decisions, as illustrated in Figure 7.

Regarding hypothesis *H3b*, the difference between the two groups was not supported. Although business management students reported higher satisfaction (75%) than public management students (54.5%), this disparity was not significant according to the cross-tabulation analysis ($p = 0.146 > 0.005$). This suggests that the observed difference may be due to chance or the varying levels of homogeneity in the methods chosen by the groups, rather than a systematic disciplinary divide.

The statistical analysis supported the hypotheses in part. The results obtained by considering the two groups as one sample and those obtained by examining the data from the two separate groups are, in several cases, contradictory; that is, the significance of the differences in the data leads to different conclusions in the two approaches. Consistent with the statement of hypothesis *H1*, both groups of students and the decision-making methods chosen by ChatGPT differ significantly, presenting a heterogeneous picture, particularly regarding the methods chosen by students of public management courses. The claims of hypothesis *H2* are supported in a group comparison, revealing a significant difference between the decision outcomes of students and AI; however, the Chi-square statistics obtained in the full sample attribute the difference to the effect of chance. For

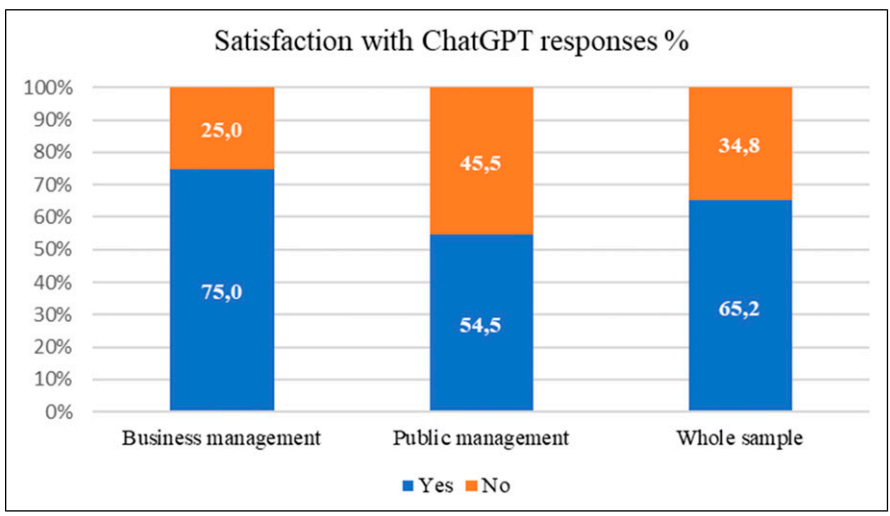

Figure 7. Students' satisfaction with the ChatGPT response. Source: authors.

hypothesis *H3*, which examines the students' satisfaction with ChatGPT's decisions, the research results show that the congruence between the students' and ChatGPT's decisions significantly affects the students' satisfaction with ChatGPT's response. However, the difference between the satisfaction levels of the two groups is not statistically significant.

Qualitative reflections

The reflection template collected qualitative data on students' experiences with AI-supported decision-making. Students were asked to respond to three open-ended questions addressing (a) the perceived advantages of AI in decision-making, (b) limitations or challenges encountered when using AI-generated recommendations, and (c) ethical or contextual concerns related to AI-supported decision processes.

A total of *N = 46 written reflections* were collected (Public Management: $n = 22$; Business Management: $n = 24$). Responses typically ranged between *80 and 150 words*. The analysis followed Braun and Clarke's (2006) six-phase thematic analysis approach. Initial open coding was conducted to identify recurring patterns, followed by the development of thematic categories. The analysis followed an inductive coding approach, where themes were identified based on recurring patterns in the data. The coding process was conducted by *two independent coders*, and discrepancies were resolved through discussion.

The analysis identified five overarching themes common to both groups: (1) AI as a structured decision-support tool, (2) lack of emotional and contextual sensitivity, (3) complementarity of human and AI reasoning, (4) dependence on prompt quality, and (5) ethical awareness and accountability. Table 2 summarizes the key themes, their definitions, illustrative quotes, and relative prevalence.

Table 2. Summary of qualitative themes in student reflections. Source: authors.

Theme	Definition	Illustrative quote	Prevalence
AI as structured decision-support	AI provides clear structure, organization, and logical reasoning	"ChatGPT helped structure my thinking and made the decision process more systematic."	High (BM > PM)
Lack of emotional/ contextual sensitivity	AI fails to capture human, social, or situational nuances	"The answer was logical, but it ignored political and social realities."	High (PM > BM)
Complementarity of human and AI reasoning	AI is useful when combined with human judgment	"AI is helpful, but final decisions still need human intuition."	High (both groups)
Dependence on prompt quality	Output quality depends on how precisely the problem is formulated	"The better I formulated the prompt, the more useful the answer became."	Medium (both groups)
Ethical awareness and accountability	Concerns about responsibility, transparency, and bias	"Using AI raises questions about who is responsible for the decision."	Medium–low (both groups)

Across both groups, students emphasized the structured nature of AI-generated outputs, while also noting limitations related to contextual understanding. Representative responses highlighted both the perceived usefulness and the constraints of AI-supported decision-making.

Public management students expressed predominantly pragmatic optimism about AI, emphasizing its usefulness as a structured analytical tool while highlighting its limitations in capturing emotional, cultural, and political dimensions. For example, one student noted: "*AI provides a clear logical framework, but it does not understand the human side of public decisions."*

In contrast, business management students more frequently emphasized rationality and efficiency, but also expressed concerns about the generic nature of AI-generated responses: *"The solution was logical, but too general to apply directly to the situation."*

Across both groups, students consistently highlighted the complementary role of AI and human reasoning: *"AI is a good starting point, but it cannot replace human judgment in complex decisions."*

Figure 8 illustrates the prevalence of key concepts and thematic elements in students' written reflections across the two groups.

Thematic frequency analysis indicates that emotional intelligence and contextual awareness appeared more frequently in public-management reflections, whereas rationality and structured reasoning dominated business-management narratives. Both groups emphasized the importance of ethical responsibility, transparency, and critical engagement when using AI-supported decision-making tools.

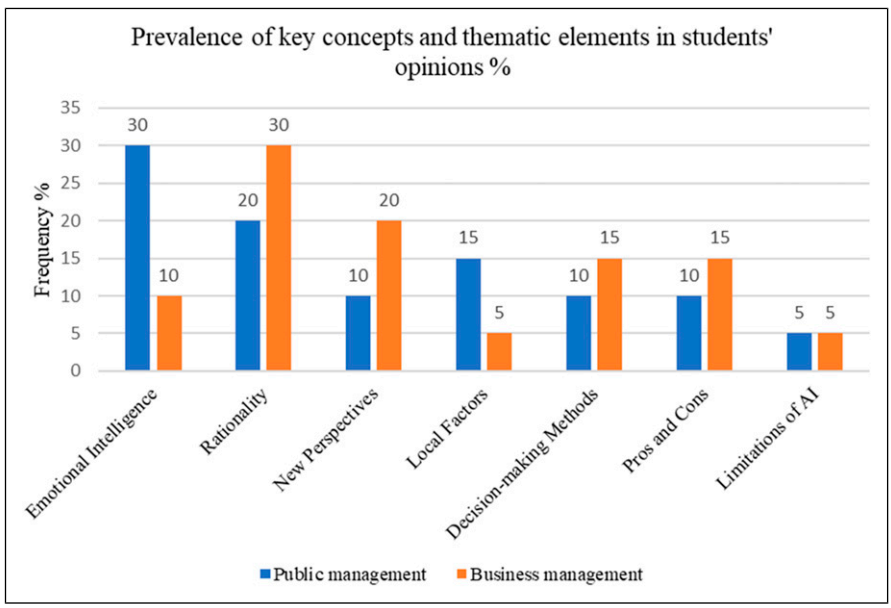

Figure 8. Prevalence of key concepts and thematic elements in the textual reflections of students. Source: authors.

Summary of hypothesis testing

Overall, statistical and thematic findings partially supported the hypotheses. Business-management students demonstrated greater methodological homogeneity and higher satisfaction, aligning more closely with AI outcomes. Public-management students showed methodological diversity and more critical perspectives on AI reasoning. Across both groups, satisfaction was most strongly correlated with decision congruence rather than field of study. Table 3 provides a structured overview of the statistical testing of the hypotheses, summarizing the applied methods and corresponding results.

Qualitative data reinforced these trends, illustrating that while students valued AI's structure and analytical clarity, they remained cautious about its limitations in emotional, cultural, and contextual reasoning. Together, these results suggest that AI can serve as an effective scaffold for decision-making education when implemented within ethically reflective pedagogical frameworks.

Discussion

This study examined how students in business management and public management programs engage with AI-supported decision-making, focusing on differences in method selection, decision outcomes, and satisfaction. The discussion builds on *three main empirical findings*: (1) significant differences between human and AI decision-making methods, (2) partial divergence in decision outcomes across groups, and (3) a strong relationship between outcome alignment and student satisfaction.

Interpreting differences in decision-making approaches (H1)

The findings provide *partial support for the proposed hypotheses*, particularly with regard to differences in decision-making approaches between students and AI systems. The significant divergence between student-selected methods and those generated by ChatGPT *H1a* indicates that human decision-makers do not simply replicate AI-supported analytical structures but instead rely on discipline-specific heuristics and familiar techniques.

Table 3. Summary of Hypothesis Testing Results. Source: authors.

Hypothesis	Description	Statistical test	Result
H1a	Differences in method choice between groups	χ^2, $p = 0.034$	Supported
H1b	BM more homogeneous, PM more heterogeneous	Descriptive	Supported
H1c	ChatGPT shows diverse method selection	Descriptive	Supported
H2a	Outcome similarity depends on method similarity	χ^2, $p = 0.727$	Not supported
H2b	BM outcomes align more with AI than PM	χ^2, $p = 0.019$	Supported
H3a	Satisfaction depends on outcome alignment	χ^2, $p = 0.000$	Supported
H3b	BM students are more satisfied than PM students	χ^2, $p = 0.146$	Not supported

More specifically, the predominance of simple methods such as pros-and-cons analysis suggests that students tend to favor cognitively less demanding and more intuitive approaches when confronted with complex decision tasks. This aligns with theories of bounded rationality, which emphasize that individuals rely on simplified decision rules rather than fully optimizing strategies under conditions of uncertainty (Simon, 1997). In contrast, ChatGPT consistently produced more structured and formalized decision frameworks, reflecting its design as a system optimized for analytical coherence and completeness.

In line with hypothesis *H1b,* findings demonstrate that academic discipline shapes the way students approach AI-supported decision-making. The significant difference suggests that PM students may rely more on ethical frameworks, while BM students prioritize efficiency-based methods. This confirms that professional socialization in different fields leads to distinct patterns of interaction with Large Language Models (LLMs).

Human–AI differences in decision outcomes (H2)

The analysis also revealed important insights regarding decision outcomes. The observed differences between student decisions and ChatGPT-generated recommendations *H2a* suggest that even when similar problems are addressed, human and AI decision-making processes may lead to different conclusions. This divergence can be interpreted as a reflection of the distinct logics underlying human and algorithmic reasoning.

While AI systems prioritize consistency, completeness, and probabilistic reasoning, human decision-makers incorporate contextual, experiential, and sometimes implicit factors into their judgments. In particular, qualitative findings indicate that students perceived AI-generated solutions as logically sound but often lacking sensitivity to contextual, social, and emotional dimensions of the decision problem. This is especially relevant in public management contexts, where decisions are embedded in complex institutional and societal environments.

The study also finds support for *H2b,* demonstrating that the academic discipline significantly influences the alignment between human and AI-generated decisions. The divergence between public and business management students suggests that professional socialization and field-specific values impact how individuals perceive and integrate AI recommendations into their decision-making processes.

Satisfaction and human–AI interaction (H3)

The results further demonstrate that student satisfaction with AI-supported decision-making is significantly associated with the degree of alignment between human and AI decisions *H3a*. Students whose decisions matched ChatGPT's recommendations reported higher levels of satisfaction, suggesting that perceived agreement reinforces trust in AI-generated outputs.

However, no significant difference in satisfaction levels was found between business and public management students *H3b*. This indicates that satisfaction is less influenced by

disciplinary background and more closely related to the perceived usefulness and coherence of the AI-generated response.

Qualitative findings provide additional context for these results. Students in both groups emphasized that the effectiveness of AI support depends heavily on the quality of the prompts used, highlighting the interactive nature of human–AI collaboration. At the same time, both groups consistently stressed that AI should be seen as a complementary tool rather than a replacement for human judgment. The recurring emphasis on ethical responsibility and the limitations of AI in capturing contextual nuances further reinforces the need for critical engagement with AI-supported decision-making.

Implications for teaching decision-making with AI

The findings have several important implications for teaching decision-making in higher education, particularly in the context of AI-supported learning. First, the observed differences between human and AI decision-making approaches suggest that AI should not be integrated as a substitute for human reasoning but rather as a complementary tool that enhances reflective learning.

The tendency of students to rely on simplified decision-making methods indicates a need to strengthen methodological training, especially in contexts where structured analytical tools are essential. At the same time, the structured outputs generated by AI systems such as ChatGPT can serve as valuable benchmarks, enabling students to compare their own reasoning processes with more formalized approaches. This comparative interaction can foster metacognitive awareness and improve decision-making competence.

Second, the strong relationship between outcome alignment and student satisfaction highlights the importance of designing learning environments that encourage critical engagement with AI-generated outputs rather than passive acceptance. If students perceive agreement with AI as a validation of their decisions, there is a risk of reinforcing confirmation bias rather than developing independent judgment.

Third, the qualitative findings emphasize the importance of prompt quality as a key determinant of AI effectiveness. This suggests that AI literacy—particularly the ability to formulate precise and context-sensitive prompts—should be considered a core competency in both business and public management education. Teaching students how to interact with AI systems effectively may be as important as teaching traditional decision-making methods.

Overall, these findings support a pedagogical approach in which AI is integrated into decision-making education as an interactive and reflective tool, rather than as an authoritative source of optimal solutions.

AI as a "black box" in decision-making

An important theoretical implication of this study concerns the "black box" nature of AI systems and its relevance for decision-making education. While ChatGPT generated structured and logically coherent recommendations, the underlying reasoning processes remain opaque, raising questions about transparency and explainability.

This limitation is particularly significant in light of established critiques of algorithmic decision-making, which highlight the risks associated with non-transparent systems (O'Neil, 2016; Pasquale, 2015). From a decision theory perspective, this challenges the assumption that rational decision-making can be fully externalized to algorithmic systems. As noted by Simon (1997), decision-making in complex environments is inherently bounded, requiring judgment, interpretation, and contextual awareness—elements that are not fully captured by probabilistic language models.

The findings of this study reinforce this perspective. While AI-generated solutions were perceived as logically consistent, students frequently identified a lack of contextual, emotional, and situational sensitivity. This suggests that AI systems may simulate rationality without fully capturing the underlying complexity of real-world decision-making.

From an educational standpoint, this highlights the importance of teaching students not only how to use AI tools but also how to critically evaluate their outputs. Understanding the limitations of AI—particularly its reliance on patterns rather than genuine understanding—is essential for responsible and effective decision-making.

In this sense, AI should be positioned not as a "decision-maker" but as a "decision-support system" whose outputs require human interpretation and validation.

Implications for public administration practice

The results of this study are particularly relevant for public administration, where decision-making processes are inherently complex, value-laden, and context-dependent. Unlike business environments, public sector decisions must balance efficiency with accountability, equity, and legitimacy.

The observed limitations of AI—especially its difficulty in capturing social, cultural, and political dimensions—highlight potential risks associated with its use in public sector contexts. These findings resonate with broader concerns in the literature regarding the application of AI in governance, where algorithmic systems may oversimplify policy problems or fail to account for diverse stakeholder perspectives (Zuboff, 2019).

At the same time, the increasing use of AI in public administration practice underscores the need to prepare future professionals for AI-supported decision environments. As recent studies indicate, AI is already shaping public service delivery and administrative processes, raising new challenges related to transparency, accountability, and ethical responsibility (Aristovnik et al., 2024; Miranda et al., 2025).

The findings of this study suggest that public administration education should place greater emphasis on critical AI literacy, ethical reasoning, and contextual awareness. Students must be equipped not only with technical skills but also with the ability to question and interpret AI-generated recommendations in light of public values and institutional constraints.

Ultimately, the integration of AI into public administration should not be viewed as a purely technical development but as a socio-technical transformation that requires careful consideration of its implications for governance and democratic accountability.

Taken together, these findings reflect broader trends in the literature emphasizing both the opportunities and limitations of AI in public administration and education (Aristovnik

et al., 2024; Miranda et al., 2025). More broadly, the increasing role of data-driven approaches in higher education reinforces the importance of developing students' capacity to critically engage with AI-supported decision-making tools (He, 2026).

Conclusion and implications

This study contributes to the growing body of research on artificial intelligence in higher education by examining how students engage with AI-supported decision-making in different disciplinary contexts. By comparing human decision-making processes with those generated by ChatGPT, the study provides empirical insights into the interaction between human judgment and algorithmic reasoning.

The findings reveal a consistent pattern: while AI systems produce structured, logically coherent recommendations, students tend to rely on simpler and more intuitive decision-making methods. This divergence reflects fundamental differences between human and machine reasoning. In line with theories of bounded rationality, human decision-making is shaped by context, experience, and cognitive limitations, whereas AI systems operate through probabilistic pattern recognition and formalized structures.

Importantly, the study shows that alignment between human and AI decisions significantly influences student satisfaction, suggesting that agreement with AI may reinforce perceived validity. However, it confirms the significant impact of academic discipline on business and public management students' challenges assumptions about disciplinary effects and pointing to the importance of individual interpretation in decision-making processes.

The qualitative findings further highlight the limitations of AI, particularly its difficulty in capturing emotional, social, and contextual dimensions. These limitations are especially critical in public administration, where decision-making involves competing values, stakeholder complexity, and ethical considerations. The "black box" nature of AI systems reinforces the need for transparency, accountability, and critical evaluation in both educational and professional contexts.

Taken together, the results suggest that AI should not be understood as a replacement for human decision-making but as a tool that can enhance reflective learning and analytical capacity when used appropriately. The educational challenge, therefore, is not only to teach students how to use AI, but also how to question, interpret, and contextualize its outputs.

For public administration education in particular, this implies a shift toward integrating AI literacy with ethical reasoning and contextual awareness. As AI becomes increasingly embedded in governance and public service delivery, future professionals must be equipped to navigate the opportunities and risks associated with algorithmic decision-making.

This study is not without limitations. The relatively small sample size and the use of a single experimental task limit the generalizability of the findings. Future research should expand the empirical scope by including diverse institutional contexts, more complex decision scenarios, and longitudinal designs that capture learning effects over time.

Despite these limitations, the study offers a timely contribution to understanding the role of AI in decision-making education. It demonstrates that meaningful integration of

AI requires not only technological adoption but also pedagogical innovation and critical reflection. As higher education continues to adapt to the challenges of digital transformation, fostering a balanced relationship between human judgment and artificial intelligence will remain a central task.

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