

GENERATIVE ARTIFICIAL INTELLIGENCE AS A TOOL FOR INFORMATION MANAGEMENT IN HIGHER EDUCATION: AN EMPIRICAL STUDY ON STUDENT PRACTICES AND PERCEPTIONS

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Abstract

Generative Artificial Intelligence (GenAI) technologies, such as ChatGPT, are playing an increasingly prominent role in higher education, particularly in supporting students' engagement with academic information. These tools offer new possibilities for searching, structuring, synthesizing, and understanding complex materials, often altering traditional strategies of studying, note-taking, and preparing assignments. At the same time, their growing use raises concerns related to informational reliability, superficial learning, and the need for new forms of academic guidance. This study investigates how undergraduate students—predominantly enrolled in business, economics, and management-related programs—interact with GenAI tools as part of their information management practices. It explores the purposes for which these technologies are employed, students' perceptions of their usefulness and limitations, as well as their attitudes toward the ethical and educational implications of AI integration in academic work. Empirical data were collected through an online cross-sectional survey conducted in 2025, focusing on frequency of use, main academic applications, perceived benefits and risks, and expectations toward university policy and support. The findings show that GenAI use is widespread and frequent: all respondents reported using such tools at least occasionally, with 45.7% using them daily or almost daily and 20.0% on a weekly basis. Students most commonly used GenAI for searching for information, summarizing and organizing academic content, solving problems, paraphrasing or improving language, and generating ideas for assignments, while using AI to write parts of academic work was relatively uncommon. Students strongly emphasized the usefulness of GenAI for information management and learning efficiency, yet simultaneously expressed high levels of caution regarding reliability, stressing the need to verify AI-generated information and the risk of false or misleading outputs. The findings contribute to ongoing discussions on the responsible use of AI in higher education by highlighting students' evolving roles as both intensive users and critical evaluators of generative technologies. The results point to a consistent pattern of high utility combined with high caution, in which students value GenAI as an information-management tool while calling for clearer institutional norms, ethical guidelines, and targeted support. These findings are intended to inform the future development of academic policies, digital literacy training, and pedagogical frameworks that promote critical, ethical, and effective use of AI in higher education.

Keywords: *Generative AI, higher education, information management, student perceptions, digital literacy.*

1. Introduction

The rapid rise of Generative Artificial Intelligence (GenAI) tools has intensified debate about their impact on higher education. Global evidence suggests that student adoption is widespread and growing; for example, the Digital Education Council's (DEC) global AI student survey reports large-scale student uptake and highlights information-related use cases such as searching and learning support (Digital Education Council [DEC], 2024). Large-scale international research also indicates that students often use GenAI for learning-related tasks such as brainstorming, text summarization, and searching for research materials (Ravšelj et al., 2025).

In this paper, information management is defined as student practices used to (a) obtain academic information (e.g., explanations, concepts, sources), (b) transform it for learning (e.g., summarizing, paraphrasing, structuring), (c) organize and retrieve it (e.g., notes and study materials), and (d) evaluate credibility and fitness-for-purpose (including verification and cross-checking). This operationalization aligns with broader personal information management perspectives that emphasize acquiring/creating, organizing, maintaining, retrieving, and using information to meet task goals (Jones, 2007).

In academic practice, GenAI tools introduce new possibilities for information management: rapid explanations, automated summarization, idea generation, and language refinement. However, the educational value of these affordances depends on how students use them and how reliably the tools behave. A key concern is that language models may produce fluent but incorrect statements (“hallucinations”), which makes verification skills central to safe academic use (Huang et al., 2023). OpenAI’s analysis similarly frames hallucinations as a persistent reliability challenge that can appear even for seemingly straightforward questions and argues that evaluation and training incentives can reward guessing over calibrated uncertainty (OpenAI, 2025). Prior research has also documented the fabrication of bibliographic citations in model-generated text, which is directly relevant to students’ literature searching and referencing practices (Walters & Wilder, 2023).

Given these opportunities and risks, universities face a policy and pedagogy challenge: how to leverage GenAI to support students’ information management and learning without undermining academic standards and deep learning. International guidance emphasizes the importance of human-centered and ethical integration of GenAI, including capacity building and clearer governance (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2023). Empirical research that focuses on student practices and perceptions is therefore needed to inform institutional guidelines and AI literacy efforts. Studies in different contexts (e.g., Hong Kong or multi-university samples in Italy) generally report positive student attitudes accompanied by concerns around accuracy, ethics, and personal development (Chan & Hu, 2023; Farinosi & Melchior, 2025).

Against this backdrop, the present study provides empirical evidence from an online survey of undergraduate students (mostly in business/economics/management-related fields) about (a) how frequently and for what purposes they use GenAI, (b) what benefits and risks they perceive, and (c) what institutional responses they prefer.

2. Objectives of the study

The primary goal of this study is to investigate the use of generative AI as a tool for information management among higher education students, using a cross-sectional survey design. The specific objectives are to:

1. Assess usage practices, including frequency and main academic tasks supported by GenAI (e.g., searching for information, summarizing content, organizing study materials).
2. Evaluate perceptions of benefits (e.g., efficiency and understanding) and perceived risks (e.g., the need to verify AI outputs, concerns about superficial learning and intellectual independence).
3. Understand student attitudes toward institutional policy and support, including preferences for governance (ban vs. guidelines vs. integration) and the need for training.

3. Methodology

3.1. Research design, sample, and data collection

This study employed a cross-sectional online survey to gather quantitative data on students’ experiences with generative AI tools in academic contexts. The survey was administered in 2025. Participation was voluntary, responses were anonymous, and no direct personal identifiers were collected.

A total of $N = 35$ responses were included in the analysis. The sample was balanced by gender (48.6% female; 51.4% male). Most respondents were in the 18–25 age range (54.3% aged 18–21; 42.9% aged 22–25; 2.9% above 30). All respondents reported a first-cycle level of study (Bachelor’s/Engineering). The field of study was highly concentrated: 97.1% of respondents reported a business, economics, and management-related field, with 2.9% reporting an interdisciplinary/other field. This concentration implies that findings should be interpreted as evidence about this particular student group rather than as fully cross-disciplinary conclusions.

3.2 Survey instrument

The instrument was a structured questionnaire comprising: (a) background information, (b) AI usage patterns, (c) perceptions of usefulness and risks (Likert-type statements), and (d) attitudes toward university policy and support. It included demographic items (gender, age group, study level, study field), items on familiarity with GenAI tools, frequency of use, checklist-based questions on purposes of use (multi-select), a question on the typical stage of academic work when AI is used, a set of Likert statements (1–5) capturing perceived benefits and risks, and final items about preferred university policy and training needs. An optional open-ended question captured additional comments.

Analysis was descriptive. Frequencies and percentages were computed for categorical variables. For Likert items, means and standard deviations were computed and agreement was operationalized as

responses 4–5. To characterize the coherence of perceived-benefit items, internal consistency was estimated for a three-item benefit subscale (acquire/organize information; understand faster; improve effectiveness), yielding Cronbach's $\alpha = 0.88$.

4. Results

4.1. AI usage patterns among students

All respondents reported using generative AI tools in their studies at least occasionally. Nearly half (45.7%) reported daily or almost daily use, 20.0% weekly use, 25.7% use a few times per month, and 8.6% occasional use (a few times per semester). Thus, 65.7% used GenAI at least weekly, indicating that these tools are embedded in routine academic practices for a majority of the sample.

The most prevalent self-reported application was searching for information (71.4%), followed by solving problems (e.g., math, coding) (54.3%), summarizing content (51.4%), organizing notes or content (51.4%), generating ideas for projects/assignments (48.6%), and paraphrasing or language improvement (48.6%). Using AI to write parts of academic work was reported by 11.4%. In terms of workflow timing, 51.4% reported using AI most often at the beginning of academic work (understanding the topic and planning), 22.9% during content development, and 25.7% at the end (editing/proofreading).

Because the sample is dominated by one study field and one study level, demographic comparisons are presented descriptively only; the dataset does not support strong inferences about disciplinary differences.

4.2. Perceived benefits of GenAI for learning

Students' perceptions were largely positive regarding informational and learning efficiency. A large majority agreed that AI helps them acquire and organize information (85.7%; $M = 4.06$, $SD = 0.87$) and that AI improves the effectiveness of their learning and work (88.6%; $M = 4.09$, $SD = 0.95$). Similarly, 85.7% agreed that AI enables them to understand difficult academic content more quickly ($M = 4.26$, $SD = 1.04$). These responses suggest that students experience GenAI primarily as an efficiency and comprehension aid—especially in early-stage information gathering and sense-making.

At the same time, only a minority agreed that they rely on AI more than traditional sources such as textbooks and lectures (28.6%; $M = 2.89$, $SD = 1.25$), indicating that, in this sample, GenAI tends to complement rather than fully displace established learning resources.

4.3. Challenges and concerns

The dominant concern was informational reliability. Almost all respondents agreed that information provided by AI requires verification (94.3%; $M = 4.69$, $SD = 0.58$) and that AI can generate false or misleading content (94.3%; $M = 4.57$, $SD = 0.70$). A substantial majority also expressed concerns that AI may limit intellectual independence (74.3%; $M = 3.89$, $SD = 1.21$). About half agreed that AI may lead to superficial learning (51.4%; $M = 3.57$, $SD = 0.70$), suggesting uncertainty and potential heterogeneity in perceived long-term learning effects.

Open-ended comments ($n = 19$ responded; $n = 13$ substantive) reinforced these issues. Recurring themes included: a strong emphasis on critical use and cross-checking; reports that AI outputs may repeatedly reproduce the same misconceptions even after “corrections”; and concerns that AI detectors may incorrectly classify original student work as AI-generated, creating anxiety about fair assessment.

4.4. Attitudes toward integration and policy

Students overwhelmingly supported a governance-oriented approach rather than prohibition. Most respondents preferred allowing AI use under clear rules and ethics (57.1%), while 22.9% favored encouraging AI use and integrating it into teaching. Another 14.3% preferred conditional permission depending on instructor guidelines, and 5.7% had no opinion. No respondent supported a complete ban.

A majority (62.9%) wanted the university to offer training or support in using AI. Self-confidence was also high: 85.7% reported feeling confident in their ability to use AI-based tools in a responsible, ethical, and informed manner. This combination suggests that students value institutional support not only to build basic competence, but also to clarify norms, expectations, and boundaries of acceptable use.

5. Discussion

This study provides empirical evidence that undergraduate students in a business, economics and management-focused sample use GenAI intensively for information management. The most common uses—information searching, summarizing, organizing notes, paraphrasing, and ideation—map directly onto an information-management workflow (Jones, 2007). The observed pattern aligns with international

evidence that students frequently use GenAI for searching, summarizing, and finding research materials (DEC, 2024; Ravšelj et al., 2025). Log-based research also indicates that student interactions with ChatGPT often cluster around information seeking, content generation, and refinement behaviors, supporting the interpretation that GenAI becomes integrated into self-directed learning routines (Ammari et al., 2025).

A key contribution of the present findings is the consistency of the “high utility–high caution” profile. Students strongly endorse informational benefits (efficiency and faster comprehension) while simultaneously emphasizing verification and acknowledging the risk of misleading content. This stance is well grounded in the known behavior of large language models: hallucinations remain a recognized failure mode and can occur even in simple informational queries (Huang et al., 2023; OpenAI, 2025). Importantly, in academic contexts reliability concerns extend beyond factual claims to the scholarly infrastructure of citations and sources; the documented frequency of fabricated references in ChatGPT-generated text makes students’ verification stance educationally rational (Walters & Wilder, 2023).

From a pedagogical and institutional perspective, the survey suggests four implications that respond directly to reviewer requests for more concrete “teaching-related” contributions. First, institutions should move from inconsistent, instructor-by-instructor approaches toward coherent guidance (policy statements, syllabus-level rules, and examples of acceptable and unacceptable GenAI uses). The strong student preference for guidelines over bans mirrors patterns found in other contexts, including the Italian multi-university study, where regulation was generally preferred over prohibition (Farinosi & Melchior, 2025), and aligns with UNESCO’s guidance emphasizing governance and human capacity development (UNESCO, 2023).

Second, universities should frame verification as a core AI literacy outcome: students already endorse verification in principle, so training can emphasize practical routines—cross-checking claims with primary sources, validating bibliographic references, identifying uncertainty boundaries, and documenting verification steps. Third, educators can design assessments that treat GenAI as a scaffold rather than a shortcut: because students report most frequent use at the beginning of tasks (topic understanding and planning), assignments can explicitly allow ideation and outlining while requiring a transparent account of prompts, verification activities, and reflective critique of AI outputs. Fourth, qualitative concerns about AI detectors highlight an assessment-risk issue: overreliance on uncertain detection may create false positives and undermine trust. A more robust integrity strategy is process-based evaluation (drafts, oral defense, iterative feedback, and transparent citation of AI assistance) complemented by clearly communicated norms.

Several limitations require emphasis. The sample is small ($N = 35$), non-probabilistic, and highly concentrated in one field and study level; therefore, the findings should be interpreted as a focused case and not generalized to all students or disciplines. The study also relies on self-report; future research would benefit from mixed methods (interviews, diaries, or usage logs), broader sampling across disciplines and institutions, and explicit measurement of academic integrity and privacy concerns.

6. Conclusions

The survey results indicate that GenAI is already a routine element of information management among surveyed undergraduate students in a business, economics and management-focused sample. Students report frequent use, especially for information searching, problem solving, summarization, organizing study materials, and language refinement. They simultaneously demonstrate strong awareness of reliability risks and the need to verify AI outputs. Most students prefer institutional policies that allow AI use under clear ethical rules and express a strong demand for training/support, even when they feel individually confident.

Overall, the findings support a balanced path forward: higher education institutions should treat GenAI as a permanent component of the learning environment while investing in clear guidance and AI literacy practices that strengthen verification, critical evaluation, and responsible use.

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