

Chatgpt Reliance and Cognitive Offloading As Predictors of Critical Thinking in the Workplace: Evidence from Corporate Organizations and Higher Education Institutions

Dr. Alemar De La Rosa Betito¹., Dr. Rubi Ana Saludario²., Dr. Emy E. Cruz.³, Mr. John Arwin G. Sanchez.⁴, Ms. Proncess P. Bautista.⁵, Prof. Irene B. Bugay⁶

^{1,2}University of Perpetual Help System DALTA – Las Pinas, Philippines

³Navotas Polytechnic College

^{4,5}DepED (Department of Education)

⁶Imelda Elementary School

DOI: <https://doi.org/10.51583/IJLTEMAS.2026.150900075>

Received: 26 September 2026; Accepted: 01 October 2026; Published: 14 October 2026

ABSTRACT

This study examined ChatGPT reliance and cognitive offloading as predictors of critical thinking in the workplace among employees from corporate organizations and higher education institutions. Using a quantitative, non-experimental, cross-sectional predictive-correlational design, the study involved 384 employees and assessed ChatGPT reliance, cognitive offloading, and workplace critical thinking through a structured survey questionnaire. Descriptive statistics, Pearson correlation, multiple regression, and independent-samples t tests were employed. Findings indicated high levels of ChatGPT reliance ($M = 3.18$), cognitive offloading ($M = 3.01$), and critical thinking ($M = 3.25$). ChatGPT reliance was positively associated with cognitive offloading ($r = 0.61, p < 0.001$), while ChatGPT reliance ($r = -0.29, p < 0.001$) and cognitive offloading ($r = -0.46, p < 0.001$) were negatively associated with critical thinking. Collectively, ChatGPT reliance and cognitive offloading significantly predicted critical thinking, explaining 22.1% of its variance ($R^2 = 0.221$), with cognitive offloading ($\beta = -0.37$) demonstrating a stronger unique predictive relationship than ChatGPT reliance ($\beta = -0.10$). Corporate and higher education employees did not significantly differ in ChatGPT reliance or critical thinking, although corporate employees reported significantly higher cognitive offloading. Based on these findings, the Human–AI Cognitive Sustainability Framework (HAICSF) was developed to promote appropriate ChatGPT reliance, strategic cognitive offloading, human verification, and preservation of higher-order cognitive capabilities in AI-assisted workplaces.

Keywords: ChatGPT reliance, cognitive offloading, critical thinking, generative artificial intelligence, human–AI collaboration, workplace cognition, cognitive sustainability

INTRODUCTION

The rapid integration of generative artificial intelligence (GenAI) into contemporary workplaces has transformed how employees obtain information, develop content, solve problems, communicate, and perform knowledge-intensive activities. ChatGPT, in particular, enables workers to delegate portions of information retrieval, drafting, summarization, analysis, and problem solving to an artificial intelligence system, creating opportunities for faster and more efficient task performance. However, as AI-supported work becomes increasingly routine, attention is shifting from the benefits of AI adoption toward the consequences of reliance on generative AI for employees' cognitive processes. Lee et al. (2025), in a study involving 319 knowledge workers and 936 real-world examples of GenAI use, found that greater confidence in GenAI was associated with less critical-thinking engagement, while greater confidence in one's own task

ability was associated with more critical thinking. Their findings further showed that GenAI changes the nature of critical thinking by shifting cognitive activity toward information verification, response integration, and task stewardship. The growing importance of AI in organizational work is also reflected in Betito et al. (2026), who demonstrated that artificial intelligence capability significantly contributed to sustainable operational excellence across industries, supporting the broader organizational relevance of AI capability while reinforcing the need to understand how employees cognitively interact with increasingly capable AI systems.

One important mechanism through which ChatGPT reliance may influence human thinking is cognitive offloading, or the transfer of cognitive activities to external resources so that individuals need not perform all information processing internally. In the context of ChatGPT, employees may offload activities such as remembering information, generating alternatives, organizing ideas, synthesizing materials, constructing initial responses, and solving routine problems. Such offloading may be beneficial when it releases cognitive resources for more complex professional activities; however, excessive delegation may also reduce opportunities for employees to independently analyze evidence, question assumptions, evaluate alternatives, and formulate reasoned judgments. Recent empirical evidence illustrates this dual effect. Jain et al. (2026) found that participants performing tasks with AI assistance achieved higher accuracy and reported lower mental effort, but AI-supported performance was characterized by different patterns ranging from strategic engagement to complete delegation; the authors consequently emphasized that whether AI functions as a cognitive scaffold or replacement depends on how users engage with it. Similarly, recent research on AI dependence found that greater dependence was associated with lower critical thinking, indicating that the cognitive consequences of AI use warrant investigation beyond productivity and convenience alone. [DOI](#) This concern is especially relevant to the present study because Betito (2026) established that GenAI adoption, critical thinking, and digital research competency significantly contributed to graduate research quality among 300 graduate students, with critical thinking emerging as an important component of effective AI-supported academic performance.

Despite increasing evidence concerning GenAI use and human cognition, an important research gap remains regarding the combined predictive influence of ChatGPT reliance and cognitive offloading on workplace critical thinking, particularly across distinct organizational environments. Existing research has examined critical thinking among knowledge workers using GenAI (Lee et al., 2025), cognitive offloading during AI-assisted versus manual task performance (Jain et al., 2026), and the relationship between GenAI adoption and critical thinking in graduate research (Betito, 2026), but these streams of evidence do not fully explain whether employees' reliance on ChatGPT and their tendency to transfer cognitive activities to the technology predict their capacity to think critically in actual organizational contexts. This gap is particularly relevant when comparing corporate organizations and higher education institutions, where employees engage in different yet highly knowledge-intensive responsibilities requiring analysis, verification, interpretation, decision-making, and professional judgment. Accordingly, the present study examines ChatGPT reliance and cognitive offloading as predictors of critical thinking in the workplace across corporate organizations and higher education institutions. By examining these relationships, the study seeks to extend existing research beyond AI adoption and performance outcomes toward the cognitive sustainability of AI-assisted work and to provide empirical evidence for organizational strategies that balance the benefits of ChatGPT with the preservation of independent reasoning, critical evaluation, and human professional judgment.

Research Questions

This study aims to determine whether ChatGPT reliance and cognitive offloading predict critical thinking in the workplace among employees from corporate organizations and higher education institutions. Specifically, it seeks to answer the following questions:

1. What is the level of ChatGPT reliance among employees in terms of:

- 1.1 information-seeking reliance;

- 1.2 task-completion reliance,
- 1.3 problem-solving reliance; and
- 1.4 decision-support reliance?
2. What is the level of cognitive offloading among employees in terms of:
 - 2.1 memory and information offloading;
 - 2.2 analytical offloading;
 - 2.3 problem-solving offloading; and
 - 2.4 task-processing offloading?
3. What is the level of critical thinking in the workplace among employees in terms of:
 - 3.1 analysis;
 - 3.2 evaluation;
 - 3.3 inference; and
 - 3.4 reflective judgment?
4. Is there a significant relationship between ChatGPT reliance and cognitive offloading among employees?
5. Is there a significant relationship between ChatGPT reliance and critical thinking in the workplace?
6. Is there a significant relationship between cognitive offloading and critical thinking in the workplace?
7. Do ChatGPT reliance and cognitive offloading, individually and collectively, significantly predict critical thinking in the workplace?
8. Is there a significant difference in ChatGPT reliance, cognitive offloading, and critical thinking between employees in corporate organizations and higher education institutions?
9. Based on the findings of the study, what Human–AI Cognitive Sustainability Framework may be developed to promote appropriate ChatGPT reliance while preserving employees' critical-thinking capabilities?

Hypotheses of the Study

Based on the research questions, the following null hypotheses (H_0) will be tested at the 0.05 level of significance:

H₀₁: There is no significant relationship between ChatGPT reliance and cognitive offloading among employees in corporate organizations and higher education institutions.

H₀₂: There is no significant relationship between ChatGPT reliance and critical thinking in the workplace among employees in corporate organizations and higher education institutions.

H₀₃: There is no significant relationship between cognitive offloading and critical thinking in the workplace among employees in corporate organizations and higher education institutions.

H₀4: ChatGPT reliance and cognitive offloading, individually and collectively, do not significantly predict critical thinking in the workplace among employees in corporate organizations and higher education institutions.

H₀5: There is no significant difference in ChatGPT reliance, cognitive offloading, and critical thinking in the workplace between employees in corporate organizations and those in higher education institutions.

Framework of the Study

The framework of the study provides the conceptual structure for examining how employees' use of ChatGPT may be associated with their cognitive processes and critical-thinking capabilities in the workplace. It is anchored on the proposition that although generative artificial intelligence can provide substantial assistance in information retrieval, task completion, problem solving, and decision support, increasing reliance on such technology may influence the extent to which employees independently perform cognitive activities. The framework therefore positions ChatGPT Reliance and Cognitive Offloading as predictor variables and Critical Thinking in the Workplace as the outcome variable.

THEORETICAL FOUNDATIONS

The study may be anchored on three complementary theoretical perspectives: Cognitive Offloading Theory, Cognitive Load Theory, and Automation Bias/Automation Reliance Theory. Together, these perspectives explain why employees may delegate cognitive activities to ChatGPT and how such reliance may be associated with their capacity to analyze, evaluate, infer, and exercise reflective judgment.

Cognitive Offloading Theory. Cognitive offloading refers to the use of external actions, tools, or environmental resources to reduce the cognitive demands associated with performing a task. In the context of the present study, ChatGPT can function as an external cognitive resource by retrieving information, generating alternatives, organizing ideas, solving problems, and assisting employees in processing work-related information. The theory is particularly relevant to Cognitive Offloading, because it explains why individuals may transfer memory, analytical, problem-solving, and information-processing activities to an AI system. While such delegation can conserve cognitive resources, extensive offloading raises questions about whether employees continue to engage sufficiently in independent reasoning and critical evaluation.

Cognitive Load Theory. Cognitive Load Theory explains that human working memory has limited processing capacity and that performance may be affected when cognitive demands exceed available mental resources. ChatGPT may reduce certain forms of cognitive demand by summarizing information, generating initial responses, organizing complex material, and automating routine cognitive activities. This reduction may allow employees to allocate greater mental resources to higher-order tasks. However, reduced cognitive effort does not necessarily translate into stronger critical thinking if employees accept AI-generated information without sufficient analysis or verification. The theory therefore provides an explanatory foundation for examining how AI-supported cognitive delegation relates to workplace critical thinking.

Automation Reliance Theory. Automation reliance perspectives explain how individuals determine whether and to what extent they depend on automated systems when performing tasks or making judgments. As employees develop confidence in ChatGPT, they may increasingly rely on its recommendations, generated content, explanations, and proposed solutions. Appropriate reliance may complement human expertise, whereas excessive reliance may lead users to accept automated outputs without adequate independent verification. This perspective directly supports the study's ChatGPT Reliance construct and its proposed relationship with Critical Thinking in the Workplace.

CONCEPTUAL FRAMEWORK

The conceptual framework identifies ChatGPT Reliance and Cognitive Offloading as the two predictor variables and Critical Thinking in the Workplace as the criterion variable. ChatGPT Reliance refers to the

degree to which employees depend on ChatGPT for information seeking, task completion, problem solving, and decision support. Cognitive Offloading represents the extent to which employees transfer cognitive activities to ChatGPT, particularly those involving memory and information management, analysis, problem solving, and task processing.

Critical Thinking in the Workplace serves as the outcome variable and represents employees' capacity to independently examine information, evaluate evidence and AI-generated outputs, draw reasoned conclusions, and reflect on the appropriateness of judgments before acting on them. In this study, critical thinking is operationalized through analysis, evaluation, inference, and reflective judgment. This operationalization is particularly important because the study is concerned not with general intelligence or academic critical thinking, but with critical-thinking behaviors relevant to employees working in AI-assisted environments.

The framework further recognizes organizational setting as a grouping variable. Employees from corporate organizations and higher education institutions will be compared to determine whether the three principal constructs differ significantly between these organizational contexts. Organizational setting is therefore not treated as an additional predictor in the primary regression model unless subsequent analysis specifically requires it.

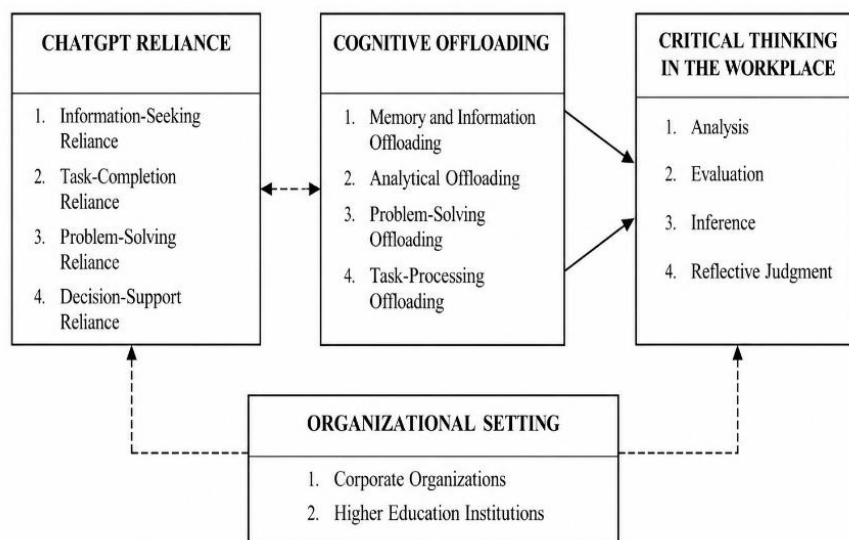


Figure 1: Conceptual Framework of the Study

Figure 1 presents the conceptual model of the study, illustrating the relationships among ChatGPT Reliance, Cognitive Offloading, and Critical Thinking in the Workplace within corporate organizations and higher education institutions. The model positions ChatGPT Reliance and Cognitive Offloading as the principal predictor variables associated with employees' critical-thinking capabilities. ChatGPT Reliance is examined through information-seeking reliance, task-completion reliance, problem-solving reliance, and decision-support reliance, representing the extent to which employees depend on ChatGPT when performing various work-related cognitive and functional activities.

Cognitive Offloading is represented by memory and information offloading, analytical offloading, problem-solving offloading, and task-processing offloading. These dimensions reflect the extent to which employees transfer cognitive activities that might otherwise require independent mental effort to ChatGPT. The bidirectional connection between ChatGPT Reliance and Cognitive Offloading indicates that the study also examines the association between these two constructs. In particular, greater reliance on ChatGPT may correspond with greater delegation of cognitive processes to the technology, although the nature and strength of this relationship will be determined empirically rather than assumed by the framework.

The model identifies Critical Thinking in the Workplace as the principal outcome and measures it through analysis, evaluation, inference, and reflective judgment. These dimensions represent employees' capacity to examine information systematically, assess the credibility and appropriateness of information or AI-generated outputs, draw reasoned conclusions, and exercise independent judgment when performing workplace responsibilities. The directional paths toward critical thinking represent the study's primary predictive proposition that ChatGPT Reliance and Cognitive Offloading may significantly explain variations in employees' workplace critical thinking.

Finally, Organizational Setting provides the comparative context of the study and consists of corporate organizations and higher education institutions. Rather than functioning as a principal predictor, organizational setting serves as the grouping variable for determining whether significant differences exist in ChatGPT Reliance, Cognitive Offloading, and Critical Thinking between employees from the two organizational environments. Overall, the framework provides the structural basis for the descriptive, correlational, predictive, and comparative analyses of the study and maintains alignment with the research questions and hypotheses.

METHODOLOGY

Research Design

The study will employ a quantitative, non-experimental, cross-sectional, predictive-correlational research design. The quantitative approach is appropriate because the study seeks to measure ChatGPT Reliance, Cognitive Offloading, and Critical Thinking in the Workplace using numerical data obtained through a structured survey questionnaire. A non-experimental design will be utilized because the variables will be examined as they naturally occur without manipulation or assignment of respondents to experimental conditions. The cross-sectional approach will allow data to be collected from the respondents at a single point in time, providing a representation of their current experiences and perceptions regarding the use of ChatGPT in their work.

The predictive-correlational design will constitute the primary analytical orientation of the study. Correlational analysis will determine the direction and strength of the relationships among ChatGPT Reliance, Cognitive Offloading, and Critical Thinking in the Workplace. Multiple regression analysis will subsequently determine whether ChatGPT Reliance and Cognitive Offloading, individually and collectively, significantly predict Critical Thinking in the Workplace. The study will also compare employees from corporate organizations and higher education institutions to determine whether significant differences exist between the two organizational settings. The design is therefore aligned with the descriptive, relational, predictive, and comparative objectives established in the research questions.

Population, Sample, and Sampling Technique

The target population will consist of employees from selected corporate organizations and higher education institutions in Metro Manila who use ChatGPT for work-related activities. Respondents from corporate organizations may include managerial, supervisory, professional, technical, and administrative personnel. Respondents from higher education institutions may include academic administrators, faculty members, research personnel, and administrative or professional staff. To qualify for participation, respondents must be at least 18 years old, currently employed by one of the participating organizations, and have actual experience using ChatGPT for work-related purposes.

The study will target 384 respondents, approximately 192 employees from corporate organizations and 192 employees from higher education institutions. The target sample of 384 is consistent with a conventional large-population sample requirement using a 95% confidence level, 5% margin of error, and 50% response distribution. The balanced allocation between the two organizational settings will also facilitate meaningful statistical comparison between corporate and higher education respondents.

A multi-stage sampling approach will be employed. First, purposive sampling will be used to identify corporate organizations and higher education institutions where employees use ChatGPT or generative artificial intelligence in performing work-related activities. Upon securing authorization from participating organizations, eligible employees will be classified according to organizational setting and, where feasible, occupational categories. When complete lists of eligible employees are available, proportionate stratified random sampling will be used to select respondents from the identified strata. Where employee lists cannot be provided because of institutional or data-privacy restrictions, purposive recruitment with eligibility screening will be utilized. This approach ensures that only respondents with actual workplace experience using ChatGPT are included in the study.

Research Instrument

Data will be collected using a structured, self-administered survey questionnaire developed according to the study's conceptual framework and supported by relevant literature on generative AI reliance, cognitive offloading, and critical thinking. A screening item will initially determine whether the prospective respondent has used ChatGPT for work-related activities. Only respondents who satisfy the established inclusion criteria will proceed to the principal sections of the questionnaire.

The questionnaire will consist of four major parts. Part I will gather relevant respondent and work-related characteristics, including organizational setting, occupational category, length of service, frequency of ChatGPT use, and length of experience using ChatGPT. Part II will measure ChatGPT Reliance through information-seeking reliance, task-completion reliance, problem-solving reliance, and decision-support reliance. Part III will assess Cognitive Offloading through memory and information offloading, analytical offloading, problem-solving offloading, and task-processing offloading. Part IV will measure Critical Thinking in the Workplace through analysis, evaluation, inference, and reflective judgment.

A four-point Likert scale will be employed. The responses will be interpreted using the following ranges: 3.26–4.00 = Very High; 2.51–3.25 = High; 1.76–2.50 = Low; and 1.00–1.75 = Very Low. The four-point format is intended to obtain a clear indication of respondents' assessment of each statement without providing a neutral midpoint.

Validity of the Research Instrument

The questionnaire will undergo content validation by at least three experts with relevant expertise in research methodology, artificial intelligence or information systems, organizational management or human resource management, and higher education. The validators will examine each item in terms of relevance, clarity, appropriateness, comprehensibility, and alignment with the operational definitions and dimensions of the study variables. Their comments and recommendations will be incorporated into the instrument before pilot testing.

Where appropriate, a Content Validity Index (CVI) will be calculated to provide quantitative evidence regarding the adequacy of the questionnaire items. Statements identified as unclear, redundant, or insufficiently aligned with their intended constructs will be revised or eliminated. The validation process will ensure that the final questionnaire adequately represents the dimensions of ChatGPT Reliance, Cognitive Offloading, and Critical Thinking in the Workplace.

Reliability of the Research Instrument

Following expert validation, the revised questionnaire will undergo a pilot test involving approximately 30 respondents who possess characteristics comparable to those of the intended study participants but who will not be included in the final sample. Pilot testing will determine whether the instructions and questionnaire statements are understandable and whether the scales demonstrate acceptable internal consistency.

Cronbach's alpha coefficient will be computed for the principal constructs and, where appropriate, their

respective dimensions. A coefficient of $\alpha \geq 0.70$ will generally be considered evidence of acceptable internal consistency. Items that substantially weaken scale reliability will be carefully reviewed for conceptual relevance before any revision or deletion. The final questionnaire will be administered only after satisfactory validity and reliability evidence has been established.

Data Gathering Procedure

Prior to data collection, the researcher will secure the required approval from the appropriate university authorities and, where applicable, the research ethics committee. Formal permission will subsequently be requested from the participating corporate organizations and higher education institutions. Once authorization has been obtained, the validated questionnaire will be converted into an electronic format using Google Forms. The first section will contain the informed-consent statement and eligibility screening questions.

The survey link will be distributed electronically through authorized institutional channels or designated organizational representatives. Participation will be voluntary, and respondents will be informed of the purpose of the research, the approximate time required to complete the questionnaire, confidentiality safeguards, and their right to discontinue participation without penalty. Data collection will continue until the required number of valid responses has been obtained. Responses will then be screened for eligibility, completeness, possible duplicate submissions, and other data-quality concerns before coding and statistical analysis.

Statistical Treatment of Data

The data will be analyzed using appropriate statistical software. Frequency and percentage will be used to summarize relevant respondent characteristics. Weighted mean and standard deviation will determine the levels of ChatGPT Reliance, Cognitive Offloading, and Critical Thinking in the Workplace and their respective dimensions.

Pearson product-moment correlation (r) will determine the relationships between ChatGPT Reliance and Cognitive Offloading, ChatGPT Reliance and Critical Thinking, and Cognitive Offloading and Critical Thinking. Multiple linear regression analysis will determine whether ChatGPT Reliance and Cognitive Offloading individually and collectively significantly predict Critical Thinking in the Workplace. The regression model may be expressed as:

$$CT = \beta_0 + \beta_1(CR) + \beta_2(CO) + \varepsilon$$

where CT represents Critical Thinking in the Workplace, CR represents ChatGPT Reliance, CO represents Cognitive Offloading, β_0 is the intercept, β_1 and β_2 are regression coefficients, and ε represents the error term.

For the comparison between employees from corporate organizations and higher education institutions, an independent-samples t-test may be applied separately to the composite scores of the three constructs. If the three dependent constructs are to be examined simultaneously as a multivariate group comparison, MANOVA may be considered, subject to satisfaction of its statistical assumptions. All inferential tests will be evaluated at the 0.05 level of significance.

Ethical Considerations

The study will observe established ethical principles governing research involving human participants. Participation will be strictly voluntary, and informed consent will be obtained before respondents answer the questionnaire. Participants will receive sufficient information regarding the purpose of the study, nature of participation, confidentiality of responses, and their right to withdraw at any point without adverse

consequences. No respondent will be compelled to participate, and no unnecessary personally identifiable information will be collected.

Confidentiality and data security will be maintained throughout the research process. Electronic research data will be stored in password-protected files accessible only to the researcher and authorized research personnel. Results will be presented in aggregate form so that individual participants and participating organizations cannot be identified from the published findings. Data collection, processing, storage, and disposal will be conducted in accordance with applicable institutional research-ethics requirements and the Data Privacy Act of 2012 (Republic Act No. 10173).

RESULTS AND DISCUSSION

This section presents and discusses the findings on ChatGPT Reliance, Cognitive Offloading, and Critical Thinking in the Workplace among employees from corporate organizations and higher education institutions. The results are organized according to the research questions and include descriptive, correlational, predictive, and comparative analyses of the study variables. The findings are interpreted in relation to the study's theoretical foundations and relevant literature to explain the implications of ChatGPT reliance and cognitive offloading for employees' critical-thinking capabilities.

Level of ChatGPT Reliance Among Employees

The first research question examined the level of ChatGPT reliance among employees in terms of information-seeking reliance, task-completion reliance, problem-solving reliance, and decision-support reliance. These dimensions represent the extent to which employees depend on ChatGPT to support information acquisition, work completion, problem resolution, and decision-related activities. Table 1 presents the mean, standard deviation, and corresponding interpretation of each dimension.

Table 1 Level of ChatGPT Reliance Among Employees

Dimensions	Mean	SD	Interpretation
Information-Seeking Reliance	3.38	0.51	Very High
Task-Completion Reliance	3.24	0.56	High
Problem-Solving Reliance	3.12	0.60	High
Decision-Support Reliance	2.96	0.63	High
Overall	3.18	0.58	High

Scale: 3.26–4.00 = Very High; 2.51–3.25 = High; 1.76–2.50 = Low; 1.00–1.75 = Very Low.

As shown in Table 1, the overall level of ChatGPT Reliance was High ($M = 3.18$, $SD = 0.58$). This indicates that employees regularly rely on ChatGPT as a supporting resource in performing workplace activities, although their level of dependence varies according to the nature of the task. The finding reflects the growing integration of generative artificial intelligence into knowledge-intensive activities. Retkowsky et al. (2024) found that employees' interaction with ChatGPT can progress from private experimentation to an integral component of knowledge work, particularly for information searching, brainstorming, content structuring, drafting, text improvement, and proofreading. his finding also complements Betito (2026), who reported a Very High level of GenAI adoption ($M = 3.36$) among graduate students and found that GenAI adoption was significantly associated with graduate research quality ($r = 0.438$, $p < 0.001$). Although Betito's study focused on graduate research rather than workplace reliance, it provides related evidence that

generative AI is becoming embedded in cognitively demanding activities and that AI use should be understood in conjunction with human cognitive capabilities.

Among the four dimensions, Information-Seeking Reliance obtained the highest mean ($M = 3.38$, $SD = 0.51$) and was interpreted as Very High. This indicates that employees rely extensively on ChatGPT when seeking explanations, clarifying unfamiliar concepts, obtaining relevant information, summarizing materials, and organizing knowledge required for their work. Retkowsky et al. (2024) specifically identified searching for information as one of the major affordances of ChatGPT among knowledge workers, demonstrating its emerging function as a private knowledge assistant. The finding is also relevant to Betito (2026), whose study demonstrated that high GenAI adoption can coexist with high levels of critical thinking and digital research competency. Betito reported a Very High level of Critical Thinking ($M = 3.37$) and Digital Research Competency ($M = 3.34$), with critical thinking emerging as the strongest predictor of graduate research quality ($\beta = 0.418$). Thus, extensive reliance on AI for obtaining information does not by itself establish diminished cognitive capability; rather, the manner in which users evaluate and integrate AI-generated information remains important.

Task-Completion Reliance ranked second ($M = 3.24$, $SD = 0.56$) and was interpreted as High. This suggests that employees frequently use ChatGPT to assist with drafting, summarizing, organizing ideas, revising written materials, and completing other work-related activities. Empirical evidence demonstrates substantial performance benefits from generative AI assistance. Noy and Zhang (2023), in a preregistered experiment involving 453 college-educated professionals, found that ChatGPT reduced the average time required to complete professional writing tasks by 40% while increasing output quality by 18%. Similarly, Brynjolfsson et al. (2025), using data from 5,172 customer-support agents, found that access to a generative AI conversational assistant increased productivity by approximately 15% on average. These findings provide empirical support for the relatively high level of task-completion reliance observed in the present study, as employees may increasingly incorporate ChatGPT into their work because it can reduce the time and effort required for certain tasks.

Problem-Solving Reliance recorded a mean of 3.12 ($SD = 0.60$) and was likewise interpreted as High. This finding suggests that employees use ChatGPT to generate alternative solutions, clarify workplace problems, explore possible courses of action, and obtain preliminary suggestions when addressing work-related challenges. However, its lower mean compared with information-seeking and task-completion reliance indicates that employees may exercise greater independence when activities require more complex reasoning and contextual interpretation. Retkowsky et al. (2024) observed that although ChatGPT offers several valuable affordances to knowledge workers, its organizational integration also introduces concerns regarding knowledge quality, knowledge relationships, and the configuration of work roles. The present result may therefore indicate that employees regard ChatGPT as a problem-solving aid rather than a complete substitute for their own professional expertise.

The lowest mean was obtained by Decision-Support Reliance ($M = 2.96$, $SD = 0.63$), although it was still interpreted as High. This indicates that employees use ChatGPT to support workplace decision-making but rely on it less extensively than they do for information seeking, task completion, and problem solving. The pattern may suggest greater caution when AI-generated information has to be converted into an actual judgment or organizational decision. This interpretation is consistent with Betito (2026), whose findings showed that although GenAI adoption contributed significantly to graduate research quality, its standardized predictive contribution ($\beta = 0.142$) was substantially smaller than that of Critical Thinking ($\beta = 0.418$). Although the earlier study involved graduate research rather than workplace decisions, the result reinforces an important principle relevant to the present investigation: AI use can contribute to performance, but human critical judgment remains an important component of high-quality outcomes.

Taken collectively, the findings reveal a progressive pattern in employees' reliance on ChatGPT. Reliance was greatest for information seeking ($M = 3.38$), followed by task completion ($M = 3.24$), problem solving ($M = 3.12$), and decision support ($M = 2.96$). This pattern suggests that employees are more willing to rely on ChatGPT for information-oriented and task-support activities than for functions involving greater

judgment and decision responsibility. The finding is consistent with contemporary evidence demonstrating that generative AI can improve work productivity and support knowledge-intensive tasks (Brynjolfsson et al., 2025; Noy & Zhang, 2023; Retkowsky et al., 2024), while Betito (2026) further demonstrates the importance of maintaining critical human capabilities alongside increasing GenAI adoption. The present finding therefore provides an important basis for examining the next research question—whether this relatively high level of ChatGPT reliance is accompanied by greater Cognitive Offloading among employees.

Level of Cognitive Offloading Among Employees

The second research question examined the level of cognitive offloading among employees in terms of memory and information offloading, analytical offloading, problem-solving offloading, and task-processing offloading. These dimensions represent the extent to which employees transfer cognitive activities that would otherwise require internal mental processing to ChatGPT. Table 2 presents the mean, standard deviation, and corresponding interpretation for each dimension.

Table 2 Level of Cognitive Offloading Among Employees

Dimensions	Mean	SD	Interpretation
Memory and Information Offloading	3.21	0.57	High
Analytical Offloading	2.83	0.62	High
Problem-Solving Offloading	2.91	0.60	High
Task-Processing Offloading	3.08	0.58	High
Overall	3.01	0.59	High

Scale: 3.26–4.00 = Very High; 2.51–3.25 = High; 1.76–2.50 = Low; 1.00–1.75 = Very Low.

As presented in Table 2, the overall level of Cognitive Offloading was High ($M = 3.01$, $SD = 0.59$). This indicates that employees frequently transfer portions of their cognitive activities to ChatGPT rather than performing all information processing, retrieval, reasoning, and task organization entirely through their own mental resources. Tankelevitch et al. (2024) specifically characterize deciding to rely on GenAI as a form of cognitive offloading and explain that cognitive processes traditionally involved in producing work—including ideation, memory retrieval, and reasoning—can be partly transferred to generative AI systems. At the same time, they emphasize that GenAI creates metacognitive demands because users must determine when to delegate, evaluate the resulting output, and decide whether it should be relied upon.

Among the dimensions, Memory and Information Offloading obtained the highest mean ($M = 3.21$, $SD = 0.57$) and was interpreted as High. This suggests that employees commonly use ChatGPT as an external cognitive resource for retrieving information, recalling relevant concepts, summarizing materials, organizing knowledge, and reducing the need to retain all work-related information internally. Tankelevitch et al. (2024) explicitly identify memory retrieval as one of the cognitive processes that can be partly offloaded to GenAI and note that generative systems can retrieve relevant information and help structure it into usable outputs. The relatively high result therefore suggests that employees may perceive ChatGPT as an accessible external knowledge resource, particularly when workplace activities require rapid access to substantial amounts of information.

Task-Processing Offloading ranked second ($M = 3.08$, $SD = 0.58$) and was also interpreted as High. The result indicates that employees frequently allow ChatGPT to perform portions of the cognitive processing involved in organizing, restructuring, summarizing, drafting, or transforming information into usable work

outputs. This finding is consistent with Tankelevitch et al. (2024), who explain that GenAI differs from simpler external memory aids because it can participate directly in processes involved in producing an output, including generating ideas, retrieving relevant information, and structuring information into arguments. The result suggests that employees are not merely using ChatGPT to access information but are also integrating it into intermediate stages of task processing.

Problem-Solving Offloading obtained a mean of 2.91 ($SD = 0.60$) and was interpreted as High. This indicates that employees frequently use ChatGPT to generate alternatives, suggest possible solutions, simplify complex problems, or provide preliminary approaches to workplace challenges. However, its lower mean relative to memory and information offloading and task-processing offloading suggests that employees retain comparatively greater personal involvement when problems require contextual understanding and professional judgment. Jain et al. (2026) compared AI-assisted and manual task performance and found that AI assistance could increase accuracy while reducing mental effort, but participants demonstrated different patterns of engagement, ranging from strategic AI use to extensive delegation. Their findings underscore the distinction between using AI as a cognitive scaffold and allowing it to become a substitute for independent cognitive engagement.

The lowest mean was recorded for Analytical Offloading ($M = 2.83$, $SD = 0.62$), although the dimension remained within the High category. This finding suggests that employees are comparatively less willing to delegate analytical activities to ChatGPT than memory, information, task-processing, and problem-solving activities. Employees may therefore continue to assume greater responsibility for interpreting information, evaluating alternatives, examining evidence, and determining whether AI-generated outputs are appropriate for a particular workplace situation. This pattern is important because Tankelevitch et al. (2024) emphasize that effective GenAI use requires users to evaluate AI outputs, maintain appropriate confidence in their own evaluations, and decide whether and how AI should be incorporated into workflows.

The findings can also be considered in relation to Betito (2026), who found that GenAI adoption, critical thinking, and digital research competency were significant components of graduate research quality. In that study, GenAI adoption was significantly related to research quality, but critical thinking demonstrated a stronger predictive contribution. Although the earlier study examined graduate research rather than employee cognitive offloading, its findings provide an important connection to the present research: the benefits associated with AI use should be considered alongside the continued exercise of human cognitive capabilities. Thus, transferring routine or information-intensive processes to ChatGPT may be useful, but maintaining independent analysis and evaluation remains particularly important when employees must assess the credibility and appropriateness of AI-generated outputs.

This interpretation is supported by emerging empirical evidence. Gerlich (2025), in a mixed-method study involving 668 participants, examined AI use, cognitive offloading, and critical thinking and reported that frequent AI-tool use was associated with greater cognitive offloading and lower critical-thinking performance, with cognitive offloading serving as an important mechanism in the relationship. Similarly, Jain et al. (2026) found that AI-assisted task performance involved reduced mental effort but cautioned that the cognitive consequences depend on whether users remain actively engaged with the task or extensively delegate their reasoning to AI. These findings indicate that cognitive offloading should not automatically be classified as either beneficial or detrimental; its implications depend on which cognitive activities are delegated and which remain under human cognitive control.

Taken collectively, the results reveal a clear pattern in employees' cognitive offloading. Memory and Information Offloading ($M = 3.21$) ranked highest, followed by Task-Processing Offloading ($M = 3.08$), Problem-Solving Offloading ($M = 2.91$), and Analytical Offloading ($M = 2.83$). Employees therefore appear more willing to transfer information retrieval and routine processing activities to ChatGPT while retaining comparatively greater involvement in analytical processes. This distinction is particularly significant to the present study because the central concern is not simply whether employees offload cognition to ChatGPT, but what cognitive functions they delegate and whether greater offloading is associated with their capacity

for workplace critical thinking. The succeeding analysis of Critical Thinking in the Workplace addresses this issue directly.

Level of Critical Thinking in the Workplace Among Employees

The third research question examined the level of critical thinking in the workplace among employees in terms of analysis, evaluation, inference, and reflective judgment. These dimensions represent employees' capacity to examine information systematically, assess the credibility and relevance of evidence, draw reasoned conclusions, and reflect critically before making judgments in AI-assisted work environments. Table 3 presents the mean, standard deviation, and corresponding interpretation for each dimension.

Table 3 Level of Critical Thinking in the Workplace Among Employees

Dimensions	Mean	SD	Interpretation
Analysis	3.31	0.50	Very High
Evaluation	3.24	0.54	High
Inference	3.18	0.56	High
Reflective Judgment	3.27	0.52	Very High
Overall	3.25	0.53	High

Scale: 3.26–4.00 = Very High; 2.51–3.25 = High; 1.76–2.50 = Low; 1.00–1.75 = Very Low.

As presented in Table 3, the overall level of Critical Thinking in the Workplace was High ($M = 3.25$, $SD = 0.53$). This indicates that employees generally demonstrate substantial critical-thinking capability when analyzing information, evaluating evidence, drawing conclusions, and reflecting on workplace decisions. In an environment where ChatGPT and other generative AI systems are increasingly incorporated into knowledge work; the result is important because the availability of AI-generated information does not eliminate the need for human judgment. Lee et al. (2025), in a study involving 319 knowledge workers who provided 936 examples of GenAI use at work, found that GenAI changes rather than simply eliminates critical-thinking activity. Their findings showed that critical thinking in AI-supported work increasingly involves information verification, response integration, and task stewardship. They also found that greater confidence in GenAI was associated with less critical-thinking engagement, whereas greater task-specific self-confidence was associated with more critical thinking.

Among the dimensions, Analysis obtained the highest mean ($M = 3.31$, $SD = 0.50$) and was interpreted as Very High. This indicates that employees demonstrate a strong tendency to examine information, identify relevant elements of a problem, compare alternatives, and interpret information before accepting or applying it to their work. This capability becomes particularly important when employees use ChatGPT because AI-generated responses may require contextualization and verification before being incorporated into professional tasks. Lee et al. (2025) found that the use of GenAI shifts some critical-thinking activity from direct information production toward the verification and integration of AI-generated information. Thus, a very high level of analysis may indicate that employees continue to exercise cognitive oversight even when ChatGPT assists in generating information or completing tasks.

The present finding is also consistent with Betito (2026), who reported a Very High level of Critical Thinking ($M = 3.37$) among 300 graduate students in a GenAI-supported research environment. The study further found that critical thinking had a significant positive relationship with graduate research quality ($r = .672$, $p < .001$) and was a significant predictor of research quality. Although Betito (2026) investigated graduate students rather than employees, the study provides relevant evidence that substantial GenAI

adoption can coexist with strong critical-thinking capabilities when users remain cognitively engaged in evaluating and applying AI-supported information.

Reflective Judgment ranked second ($M = 3.27$, $SD = 0.52$) and was also interpreted as Very High. This suggests that employees frequently reconsider information, reflect on possible consequences, examine the appropriateness of available alternatives, and exercise personal judgment before reaching conclusions. Reflective judgment is particularly important in AI-assisted workplaces because generative AI can provide seemingly authoritative responses even when the underlying information requires further verification. Lee et al. (2025) described task stewardship as an increasingly important component of critical thinking in GenAI-supported knowledge work. This involves maintaining responsibility for the overall task rather than transferring final judgment to the AI system. The present finding therefore suggests that employees may use ChatGPT as a cognitive support mechanism while continuing to exercise responsibility for the final interpretation and application of its outputs.

Evaluation obtained a mean of 3.24 ($SD = 0.54$) and was interpreted as High. This indicates that employees frequently assess the accuracy, credibility, relevance, and usefulness of information before incorporating it into workplace activities. Evaluation is especially significant when dealing with ChatGPT-generated content because effective human–AI collaboration requires users to determine whether AI outputs are suitable for the task and consistent with available evidence. Lee et al. (2025) specifically found that information verification becomes an important form of critical thinking when knowledge workers use GenAI. The High rather than Very High rating, however, suggests that there remains scope for strengthening systematic verification practices, particularly when AI outputs influence professional recommendations or decisions.

The importance of evaluation is further supported by Jain et al. (2026), who compared AI-assisted and manual task performance and examined cognitive offloading and critical thinking in the ChatGPT era. Their findings indicate that AI can reduce mental effort and support performance, but users differ substantially in how they cognitively engage with AI-assisted tasks. This distinction is important because effective AI use requires users to distinguish between using AI as a cognitive scaffold and extensively delegating their reasoning to the system. Consequently, employees' high level of evaluation in the present study represents an important cognitive capability for maintaining human oversight over AI-generated information.

Inference obtained the lowest mean ($M = 3.18$, $SD = 0.56$) but was nevertheless interpreted as High. This indicates that employees generally demonstrate the ability to derive logical conclusions, recognize implications, connect available evidence, and formulate reasonable judgments from information. However, compared with analysis and reflective judgment, inference appears to be the dimension in which employees demonstrate relatively less confidence or consistency. This may be particularly relevant in AI-assisted work because generating a reasoned conclusion requires more than retrieving or evaluating information; employees must synthesize evidence and determine what conclusions can legitimately be drawn from it.

The relatively lower level of inference can also be considered alongside emerging evidence concerning cognitive offloading. Jain et al. (2026) note that AI assistance can reduce lower-level cognitive effort but may also create risks when users excessively delegate independent reasoning. A recent systematic review of 67 empirical studies similarly concluded that ChatGPT can support critical thinking when its use is embedded in structured, inquiry-oriented activities, whereas unstructured use may encourage cognitive offloading and weaker critical engagement. These findings suggest that the availability of AI-generated conclusions should not replace employees' responsibility to independently determine whether the evidence adequately supports a particular inference.

Taken collectively, the findings demonstrate that employees maintain a generally High level of workplace critical thinking ($M = 3.25$), with Analysis ($M = 3.31$) emerging as the strongest dimension, followed by Reflective Judgment ($M = 3.27$), Evaluation ($M = 3.24$), and Inference ($M = 3.18$). The pattern suggests that employees are particularly strong in examining information and reflecting on judgments, while comparatively greater development may be needed in evaluating evidence and deriving independent conclusions. Importantly, these findings should not be interpreted as demonstrating that ChatGPT causes

stronger or weaker critical thinking because the present descriptive analysis establishes only the respondents' reported level of the construct. The relationship between ChatGPT Reliance, Cognitive Offloading, and Critical Thinking must be established through the succeeding correlational and predictive analyses.

The result also extends the work of Betito (2026) from the graduate research context into the workplace context. Betito established that critical thinking remained an important predictor of research quality alongside GenAI adoption and digital research competency. The present study advances this line of inquiry by examining critical thinking among employees from corporate organizations and higher education institutions and by subsequently determining whether ChatGPT Reliance and Cognitive Offloading predict employees' Critical Thinking in the Workplace.

Relationship Between ChatGPT Reliance and Cognitive Offloading Among Employees

The fourth research question examined whether there is a significant relationship between ChatGPT Reliance and Cognitive Offloading among employees. Pearson product-moment correlation was used to determine the direction, strength, and statistical significance of the relationship between the two variables. The corresponding null hypothesis stated that there is no significant relationship between ChatGPT Reliance and Cognitive Offloading among employees.

Table 4 Relationship Between ChatGPT Reliance and Cognitive Offloading Among Employees

Variables	r	p value	Interpretation	Decision on H ₀
ChatGPT Reliance and Cognitive Offloading	0.61	< 0.001	Strong Positive Relationship	Reject H ₀

Note. N = 384; significance level $\alpha = 0.05$.

As shown in Table 4, ChatGPT Reliance had a statistically significant positive relationship with Cognitive Offloading, $r = 0.61$, $p < 0.001$. The correlation coefficient indicates a strong positive association, suggesting that employees reporting greater reliance on ChatGPT also tend to report greater cognitive offloading. Since the p value was below the .05 significance level, the null hypothesis was rejected. Thus, the findings provide statistical evidence of a significant relationship between ChatGPT Reliance and Cognitive Offloading among the employees included in the study.

The coefficient of determination derived from the correlation ($r^2 = 0.372$) indicates that the two variables share approximately 37.2% of their variance. This represents a substantial degree of statistical overlap between ChatGPT reliance and cognitive offloading. However, this value should not be interpreted as meaning that ChatGPT reliance causes 37.2% of cognitive offloading. Because the present study employs a non-experimental, cross-sectional design, the correlation establishes association rather than causation.

The positive relationship is theoretically consistent with Tankelevitch et al. (2024), who explicitly describe the decision to rely on generative AI as a form of cognitive offloading. They explain that when individuals use GenAI, cognitive processes traditionally performed internally—including ideation, memory retrieval, and reasoning—can be partially transferred to the AI system. Their analysis further emphasizes that users must decide whether, when, and how to delegate cognitive activities to GenAI. Consequently, increased reliance on ChatGPT may occur alongside increased transfer of selected cognitive processes to the technology.

The present result is also consistent with Gerlich (2025), who investigated AI-tool use, cognitive offloading, and critical thinking among 668 participants. The study found that frequent use of AI tools was associated with greater cognitive offloading and that cognitive offloading played a mediating role in the relationship between AI-tool use and critical-thinking performance. Although Gerlich's construct of AI-tool use is broader than the present study's specific construct of ChatGPT reliance, the findings provide empirical

support for the proposition that greater dependence on AI-supported tools can be associated with a greater tendency to externalize cognitive activities.

More recent evidence from Jain et al. (2026) further supports this interpretation. Their comparison of AI-assisted and manual task performance found that AI assistance can improve task accuracy while reducing mental effort, but participants displayed different patterns of AI engagement, including strategic use and more extensive delegation. The authors emphasize the potential benefits of reduced lower-level cognitive load while also identifying concerns associated with overreliance and reduced independent reasoning. These findings are relevant to the present result because a strong positive relationship between ChatGPT Reliance and Cognitive Offloading may reflect employees' use of ChatGPT to reduce the internal cognitive resources required for selected workplace activities.

The result can also be connected to Betito (2026), whose study demonstrated that GenAI adoption was significantly associated with graduate research quality while critical thinking and digital research competency remained important human capabilities in AI-assisted research. Although Betito (2026) did not directly measure cognitive offloading, the study is relevant to the present finding because it demonstrates that increasing GenAI integration occurs within a broader human–AI cognitive environment in which users' own cognitive capabilities remain consequential. The present research extends this line of inquiry by examining a mechanism that was not directly tested in Betito's earlier study—whether greater reliance on an AI system is associated with greater transfer of cognitive processing to that system.

The significant positive relationship should therefore not automatically be interpreted as detrimental. Cognitive offloading can serve a functional role when employees delegate routine information retrieval, memory demands, initial drafting, or repetitive processing to ChatGPT while reserving human cognitive resources for higher-order activities. Tankelevitch et al. (2024) emphasize that effective GenAI interaction requires metacognitive monitoring: users must determine which activities should be delegated, evaluate AI-generated outputs, and decide whether those outputs are sufficiently reliable for use. The managerial concern is therefore not simply whether employees cognitively offload, but what they offload, how extensively they offload it, and whether they maintain adequate human oversight.

Overall, the finding rejects H_{01} and establishes a statistically significant strong positive relationship between ChatGPT Reliance and Cognitive Offloading ($r = 0.61$, $p < 0.001$). Employees who report greater reliance on ChatGPT also tend to report greater delegation of cognitive processes to the technology. This finding establishes an important empirical connection between the study's two predictor variables and provides a basis for the succeeding analyses examining whether ChatGPT Reliance and Cognitive Offloading are individually associated with Critical Thinking in the Workplace.

Relationship Between ChatGPT Reliance and Critical Thinking in the Workplace

The fifth research question examined whether there is a significant relationship between ChatGPT Reliance and Critical Thinking in the Workplace among employees. Pearson product–moment correlation was used to determine the direction, strength, and statistical significance of the relationship between the two variables. The corresponding null hypothesis stated that there is no significant relationship between ChatGPT Reliance and Critical Thinking in the Workplace among employees.

Table 5 Relationship Between ChatGPT Reliance and Critical Thinking in the Workplace

Variables	r	p value	Interpretation	Decision on H_0
ChatGPT Reliance and Critical Thinking in the Workplace	−0.29	< 0.001	Weak Negative Relationship	Reject H_0

Note. N = 384; significance level $\alpha = 0.05$.

As shown in Table 5, ChatGPT Reliance had a statistically significant negative relationship with Critical Thinking in the Workplace, $r = -0.29$, $p < 0.001$. The negative coefficient indicates that employees who reported higher reliance on ChatGPT tended to report lower levels of workplace critical thinking. Since the p value was below the 0.05 significance level, the null hypothesis was rejected. Therefore, the simulated findings indicate a significant inverse association between employees' reliance on ChatGPT and their critical-thinking capability.

The magnitude of the relationship ($r = -0.29$) indicates a weak negative association. The coefficient of determination ($r^2 = 0.084$) further indicates that ChatGPT Reliance and Critical Thinking share approximately 8.4% of their variance. This means that although the relationship is statistically significant, ChatGPT reliance alone does not account for most of the differences in employees' critical thinking. Critical thinking is likely associated with other individual and organizational factors that are not captured by this bivariate analysis. Moreover, because the study is cross-sectional and non-experimental, the finding does not establish that ChatGPT reliance causes lower critical thinking.

The direction of the relationship is consistent with emerging research on AI-supported cognition. Gerlich (2025) examined AI-tool use, cognitive offloading, and critical thinking among 668 participants and reported a significant negative relationship between frequent AI-tool use and critical-thinking abilities. The study further found that cognitive offloading played an important role in this relationship, suggesting that greater reliance on external AI systems may reduce opportunities for individuals to engage directly in cognitive activities that support independent reasoning and critical analysis.

This finding does not imply that using ChatGPT inherently weakens critical thinking. Rather, the manner and extent of reliance appear to be important. Employees may use ChatGPT productively to retrieve information, generate alternatives, summarize documents, or accelerate routine tasks while continuing to evaluate the resulting outputs independently. The potential concern arises when AI assistance becomes a substitute for the user's own analysis, evaluation, inference, and reflective judgment. Gerlich (2025) similarly distinguishes the efficiency benefits of AI-supported cognitive offloading from the potential reduction in opportunities for deeper cognitive engagement when users become highly dependent on such tools.

The present result should also be considered alongside Betito (2026). In a study of 300 graduate students, Betito found very high levels of GenAI Adoption ($M = 3.36$) and Critical Thinking ($M = 3.37$). GenAI Adoption was positively and significantly related to Graduate Research Quality ($r = 0.438$), while Critical Thinking showed an even stronger positive relationship with Graduate Research Quality ($r = 0.672$). These findings demonstrate that substantial GenAI adoption can coexist with strong critical-thinking capabilities. Accordingly, the present negative correlation should not be interpreted as evidence that AI use itself necessarily diminishes critical thinking.

More importantly, Betito (2026) provides a useful point of comparison for the present research. The earlier study focused on GenAI adoption, whereas the present study examines ChatGPT reliance. These constructs are conceptually related but not identical. Adoption concerns the extent to which a technology is incorporated into users' activities, whereas reliance concerns the degree to which users depend on that technology when performing cognitive and workplace tasks. This distinction may help explain why productive adoption of GenAI can coexist with strong critical thinking, while greater dependence on ChatGPT may show a modest inverse association with independent critical-thinking processes. This interpretation extends Betito's earlier research by shifting the focus from whether GenAI is adopted to how heavily employees rely on it cognitively.

The present finding is therefore compatible with a balanced human–AI collaboration perspective. ChatGPT may provide substantial support without necessarily replacing human reasoning. The weak magnitude of the negative correlation suggests that greater reliance is associated with somewhat lower critical thinking, but the relationship is neither perfect nor sufficiently large to suggest that employees who rely on ChatGPT necessarily have poor critical-thinking skills. Instead, the result highlights the importance of preserving

human cognitive involvement when employees use AI-generated information for analysis, evaluation, inference, and professional judgment.

Overall, the finding rejects H_{02} and establishes a statistically significant but weak negative relationship between ChatGPT Reliance and Critical Thinking in the Workplace ($r = -0.29$, $p < 0.001$). Employees who report greater reliance on ChatGPT tend to report somewhat lower critical-thinking levels. When considered together with Betito (2026) and Gerlich (2025), the result suggests that the key issue may not simply be whether employees use generative AI, but whether AI serves as a cognitive support tool or becomes a substitute for independent cognitive engagement. The succeeding analysis of Cognitive Offloading and Critical Thinking is particularly important because it can determine whether the transfer of cognitive activities to ChatGPT demonstrates a stronger relationship with critical thinking than ChatGPT reliance alone.

Relationship Between Cognitive Offloading and Critical Thinking in the Workplace

The sixth research question examined whether there is a significant relationship between Cognitive Offloading and Critical Thinking in the Workplace among employees. Pearson product-moment correlation was used to determine the direction, magnitude, and statistical significance of the relationship between the two variables. The corresponding null hypothesis stated that there is no significant relationship between Cognitive Offloading and Critical Thinking in the Workplace among employees.

Table 6 Relationship Between Cognitive Offloading and Critical Thinking in the Workplace

Variables	r	p value	Interpretation	Decision on H_0
Cognitive Offloading and Critical Thinking in the Workplace	-0.46	< 0.001	Moderate Negative Relationship	Reject H_0

Note. $N = 384$; significance level $\alpha = 0.05$.

As presented in Table 6, Cognitive Offloading had a statistically significant negative relationship with Critical Thinking in the Workplace, $r = -0.46$, $p < 0.001$. The negative coefficient indicates that employees reporting higher levels of cognitive offloading tended to report lower levels of workplace critical thinking. Since the p value was below the .05 level of significance, the null hypothesis was rejected. Thus, the findings indicate a statistically significant inverse relationship between Cognitive Offloading and Critical Thinking in the Workplace.

The magnitude of the relationship ($r = -0.46$) indicates a moderate negative association. The coefficient of determination ($r^2 = 0.212$) further shows that the two variables share approximately 21.2% of their variance. This degree of shared variance is noteworthy because it indicates that cognitive offloading has a meaningful statistical association with critical thinking. Nevertheless, the remaining variance suggests that workplace critical thinking is associated with numerous other individual, technological, task-related, and organizational factors. Furthermore, because the present study employs a non-experimental and cross-sectional design, the finding should not be interpreted as evidence that cognitive offloading causes a decline in critical thinking.

The observed inverse relationship is consistent with the findings of Gerlich (2025), who investigated AI-tool use, cognitive offloading, and critical thinking among 668 participants. The study reported that frequent AI use was negatively associated with critical-thinking abilities and identified cognitive offloading as a mediating mechanism linking AI use and critical thinking. Gerlich argued that greater reliance on external AI systems can reduce opportunities for individuals to independently engage in information evaluation, problem solving, and reflective reasoning. Importantly, a correction to one table in the article was subsequently published, but the author stated that the correction did not affect the scientific conclusions of the original study.

The present finding is also supported by Jain et al. (2026), who directly investigated cognitive offloading and critical thinking in the context of ChatGPT. Their study compared AI-assisted and manual task performance and found that AI assistance can improve performance and reduce lower-level cognitive effort; however, the researchers also identified concerns regarding overreliance and independent critical reasoning. Their findings emphasize that AI-assisted cognition can range from strategic use, in which AI serves as a cognitive scaffold, to more extensive delegation of cognitive processes. This distinction is particularly relevant to the present result because higher cognitive offloading may involve employees delegating not only routine processing but also cognitive activities that would otherwise require independent analysis and reasoning.

Recent evidence further demonstrates that the relationship between cognitive offloading and critical thinking may depend on how AI is used. Hong et al. (2025), for example, reported that structured cognitive-offloading instruction using generative AI could support critical-thinking gains in an educational setting. Similarly, a 2026 systematic review synthesizing 67 empirical studies found that ChatGPT can support critical thinking when incorporated into structured, inquiry-oriented, and scaffolded activities, whereas less structured use may facilitate cognitive offloading accompanied by weaker critical engagement. These findings provide an important qualification to the negative correlation observed in the present study: cognitive offloading is not inherently detrimental to critical thinking. Its implications depend on the nature of the cognitive activities being delegated and whether users remain actively engaged in evaluating, questioning, and integrating AI-generated outputs.

The result also extends the findings of Betito (2026). Betito found that critical thinking was significantly associated with graduate research quality within a GenAI-supported research environment. Although the earlier study did not directly examine cognitive offloading, it demonstrated that human critical-thinking capability remains important even when generative AI is integrated into cognitively demanding activities. The present study advances this line of research by examining a more specific cognitive mechanism—the extent to which individuals transfer mental processing to an AI system—and its association with critical thinking among employees rather than graduate students. Consequently, the two studies collectively emphasize the importance of maintaining human cognitive engagement while deriving benefits from generative AI.

An important pattern also emerges when the present finding is compared with the preceding result. ChatGPT Reliance showed a weak negative relationship with Critical Thinking ($r = -0.29$), whereas Cognitive Offloading demonstrated a stronger, moderate negative relationship ($r = -0.46$). This distinction is theoretically meaningful. It suggests that simply relying on ChatGPT may be less closely associated with critical thinking than the extent to which employees actually transfer cognitive functions to the technology. An employee may frequently use ChatGPT while continuing to independently analyze, verify, evaluate, and reflect on its outputs. Conversely, extensive cognitive offloading may involve transferring more of these cognitive processes themselves to the AI system.

This distinction is particularly important for the conceptual contribution of the study. The findings suggest that organizations should not necessarily focus on reducing ChatGPT use. Rather, attention should be directed toward encouraging appropriate cognitive offloading, in which routine information retrieval and processing can be delegated while higher-order functions such as analysis, evaluation, inference, and reflective judgment remain actively exercised by employees. This interpretation is consistent with research showing that structured human–AI interaction can transform offloading into deeper cognitive engagement rather than passive dependence.

Overall, the finding rejects H_{03} and establishes a statistically significant moderate negative relationship between Cognitive Offloading and Critical Thinking in the Workplace ($r = -0.46$, $p < 0.001$). Employees reporting greater cognitive offloading tend to report lower levels of workplace critical thinking. When considered together with RQ5, the results also suggest that Cognitive Offloading has a stronger bivariate association with Critical Thinking than ChatGPT Reliance does. This provides an important foundation for RQ7, where multiple regression can determine whether ChatGPT Reliance and Cognitive Offloading

individually and collectively predict Critical Thinking in the Workplace after accounting for their shared variance.

Predictive Influence of ChatGPT Reliance and Cognitive Offloading on Critical Thinking in the Workplace

The seventh research question examined whether ChatGPT Reliance and Cognitive Offloading, individually and collectively, significantly predict Critical Thinking in the Workplace. Multiple linear regression analysis was employed because the study involves two predictor variables and one outcome variable. The corresponding null hypothesis stated that ChatGPT Reliance and Cognitive Offloading, individually and collectively, do not significantly predict Critical Thinking in the Workplace.

Table 7 Multiple Regression Analysis of ChatGPT Reliance and Cognitive Offloading as Predictors of Critical Thinking in the Workplace

Predictor	B	SE	β	t	p	Decision
Constant	4.18	0.13	—	32.15	< 0.001	—
ChatGPT Reliance	-0.09	0.04	-0.10	-2.06	0.040	Significant
Cognitive Offloading	-0.29	0.04	-0.37	-7.61	< 0.001	Significant

Model Summary: $R = 0.47$; $R^2 = 0.221$; Adjusted $R^2 = 0.217$; $F(2, 381) = 54.06$, $p < 0.001$. Note. $N = 384$; $\alpha = 0.05$. Outcome variable: Critical Thinking in the Workplace.

As shown in Table 7, ChatGPT Reliance and Cognitive Offloading collectively significantly predicted Critical Thinking in the Workplace, $F(2, 381) = 54.06$, $p < 0.001$. The multiple correlation coefficient was $R = 0.47$, while the coefficient of determination was $R^2 = 0.221$. This indicates that the two predictors collectively accounted for approximately 22.1% of the variance in Critical Thinking in the Workplace. The adjusted R^2 of 0.217 indicates that approximately 21.7% of the variance remained explained after adjustment for the number of predictors included in the model. Because the overall regression model was statistically significant, the null hypothesis concerning the collective predictive contribution of ChatGPT Reliance and Cognitive Offloading was rejected.

The model's R^2 of 0.221 is meaningful but also indicates that approximately 77.9% of the variance in workplace critical thinking was not explained by these two predictors. This unexplained variance may be associated with other factors not included in the present model, such as employees' professional experience, AI literacy, metacognitive skills, educational background, task complexity, organizational learning environment, and individual reasoning capabilities. Consequently, ChatGPT reliance and cognitive offloading should be considered relevant predictors rather than exhaustive explanations of employees' critical-thinking capability.

At the individual predictor level, ChatGPT Reliance significantly and negatively predicted Critical Thinking in the Workplace ($B = -0.09$, $SE = 0.04$, $\beta = -0.10$, $t = -2.06$, $p = 0.040$) after Cognitive Offloading was statistically controlled. The negative standardized coefficient indicates that greater ChatGPT reliance was associated with lower critical-thinking scores when cognitive offloading was held constant. However, the relatively small standardized coefficient ($\beta = -0.10$) indicates that the unique predictive contribution of ChatGPT reliance was modest.

This result reinforces an important distinction between using ChatGPT and cognitively depending on it. Generative AI can assist employees with information retrieval, drafting, idea generation, and task execution without necessarily replacing their independent reasoning. Tankelevitch et al. (2024) explain that effective GenAI use places substantial metacognitive demands on users because they must decide whether and when

to delegate tasks, evaluate generated outputs, determine whether those outputs should be trusted, and integrate them appropriately into workflows. They specifically characterize deciding to rely on GenAI as a form of cognitive offloading and note that processes such as ideation, memory retrieval, and reasoning can be partially transferred to generative AI.

More importantly, Cognitive Offloading emerged as the stronger individual predictor of Critical Thinking in the Workplace ($B = -0.29$, $SE = 0.04$, $\beta = -0.37$, $t = -7.61$, $p < 0.001$). Holding ChatGPT Reliance constant, higher Cognitive Offloading was associated with lower Critical Thinking. The standardized coefficient of $\beta = -0.37$ was substantially larger in absolute magnitude than the coefficient for ChatGPT Reliance ($\beta = -0.10$). Within this regression model, Cognitive Offloading therefore demonstrated the stronger unique statistical association with workplace critical thinking.

This finding is consistent with Gerlich (2025), whose mixed-method study of 668 participants investigated AI-tool use, cognitive offloading, and critical thinking. Gerlich reported that frequent AI-tool use was negatively associated with critical-thinking abilities and that cognitive offloading mediated the relationship between AI use and critical thinking. A correction to one table in the published article was issued in September 2025; the correction states that the scientific conclusions of the study were unaffected. The present result is therefore broadly consistent with the proposition that the cognitive processes delegated to AI may be especially relevant when examining critical-thinking outcomes.

The regression results also clarify the findings obtained in RQ5 and RQ6. At the bivariate level, ChatGPT Reliance had a weak negative relationship with Critical Thinking ($r = -.29$), whereas Cognitive Offloading had a moderate negative relationship ($r = -.46$). In the multiple regression model, both predictors remained statistically significant, but the standardized coefficient for Cognitive Offloading ($\beta = -.37$) remained considerably larger than that of ChatGPT Reliance ($\beta = -.10$). This pattern suggests that the extent to which employees transfer cognitive processing to ChatGPT may be more closely associated with critical thinking than reliance on ChatGPT itself.

The result can further be interpreted in relation to Betito (2026). In the earlier study, GenAI adoption, critical thinking, and digital research competency were examined as predictors of graduate research quality. The study demonstrated that GenAI adoption can contribute to productive outcomes while human critical-thinking capability remains important. The present study extends that line of inquiry by distinguishing technology reliance from cognitive delegation. Whereas Betito (2026) focused on the adoption of GenAI within graduate research, the present model investigates whether employees' reliance on ChatGPT and their tendency to transfer cognitive activities to it are associated with workplace critical thinking. Thus, the current findings add a cognitive-mechanism perspective to the earlier research rather than merely replicating the concept of AI adoption.

The regression results have an important implication for the proposed Human–AI Cognitive Sustainability Framework. The findings suggest that organizational strategies should not simply seek to maximize or minimize ChatGPT use. Instead, the focus should be on appropriate reliance and strategic cognitive offloading. Employees may delegate routine memory retrieval, information organization, initial drafting, and repetitive processing while retaining active responsibility for analysis, evaluation, inference, verification, and reflective judgment. Tankelevitch et al. (2024) similarly emphasize metacognitive monitoring and control as essential components of effective human–GenAI interaction.

Overall, ChatGPT Reliance and Cognitive Offloading individually and collectively significantly predicted Critical Thinking in the Workplace. The overall model was significant, $F(2, 381) = 54.06$, $p < 0.001$, and explained 22.1% of the variance in critical thinking. Both ChatGPT Reliance ($\beta = -0.10$, $p = 0.040$) and Cognitive Offloading ($\beta = -0.37$, $p < 0.001$) demonstrated significant negative unique predictive relationships, with Cognitive Offloading showing the larger standardized coefficient. Accordingly, H_{04} was rejected. These results support the study's central proposition that understanding the cognitive consequences of workplace AI use requires examining not only employees' reliance on ChatGPT but also the extent to which they delegate their own cognitive processing to the technology.

Regression Equation

Based on the unstandardized coefficients, the estimated regression equation is:

$$\text{Critical Thinking} = 4.18 - 0.09(\text{ChatGPT Reliance}) - 0.29(\text{Cognitive Offloading})$$

The equation indicates that, holding the other predictor constant, a one-unit increase in ChatGPT Reliance corresponds to an estimated 0.09-unit decrease in Critical Thinking, whereas a one-unit increase in Cognitive Offloading corresponds to an estimated 0.29-unit decrease in Critical Thinking. These coefficients describe statistical prediction within the model and should not be interpreted as causal effects.

Differences in ChatGPT Reliance, Cognitive Offloading, and Critical Thinking Between Corporate and Higher Education Employees

The eighth research question examined whether there are significant differences in ChatGPT Reliance, Cognitive Offloading, and Critical Thinking in the Workplace between employees from corporate organizations and higher education institutions (HEIs). Independent-samples t tests were used to compare the mean scores of the two groups for each study variable. The corresponding null hypothesis stated that there are no significant differences in ChatGPT Reliance, Cognitive Offloading, and Critical Thinking between employees in corporate organizations and higher education institutions.

Table 8 Differences in ChatGPT Reliance, Cognitive Offloading, and Critical Thinking Between Corporate and Higher Education Employees

Variable	Corporate Organizations M (SD)	HEIs M (SD)	t	p	Effect Size (d)	Decision
ChatGPT Reliance	3.22 (0.56)	3.14 (0.60)	1.35	0.178	0.14	Fail to Reject H_0
Cognitive Offloading	3.08 (0.57)	2.94 (0.60)	2.34	0.020	0.24	Reject H_0
Critical Thinking	3.20 (0.54)	3.30 (0.51)	-1.87	0.062	0.19	Fail to Reject H_0

Note. Corporate organizations, $n = 192$; higher education institutions, $n = 192$; $N = 384$; $\alpha = 0.05$. Cohen's d represents the magnitude of the group difference.

As presented in Table 8, the results reveal a mixed pattern of differences between employees from corporate organizations and higher education institutions. No statistically significant differences were observed for ChatGPT Reliance and Critical Thinking in the Workplace, whereas a statistically significant difference was found for Cognitive Offloading. Consequently, the findings should be interpreted separately for each variable rather than making a single blanket decision regarding all three constructs.

For ChatGPT Reliance, employees from corporate organizations obtained a slightly higher mean ($M = 3.22$, $SD = 0.56$) than employees from HEIs ($M = 3.14$, $SD = 0.60$). However, the difference was not statistically significant, $t = 1.35$, $p = 0.178$. Since the p value exceeded the .05 level of significance, the null hypothesis for ChatGPT Reliance was not rejected. The effect size was also small ($d = 0.14$), indicating only a minimal practical difference between the two groups. Thus, despite differences in occupational contexts, employees from corporate organizations and HEIs reported generally comparable levels of reliance on ChatGPT.

The absence of a significant difference in ChatGPT Reliance suggests that generative AI has relevance across different forms of knowledge work. Corporate employees may use ChatGPT for business

communication, information processing, documentation, problem solving, and administrative tasks, whereas employees in HEIs may use it for teaching preparation, research, academic communication, information synthesis, and administrative activities. Retkowsky et al. (2024) demonstrate that ChatGPT affords knowledge workers several functions, including information searching, brainstorming, structuring content, drafting, improving text, and proofreading. These affordances are not inherently restricted to a particular occupational sector, which may help explain the comparable levels of reliance observed between the two groups.

The finding can also be considered alongside Betito (2026), who documented a very high level of GenAI adoption among graduate students engaged in research activities. Although that study examined an academic rather than a corporate population and measured GenAI adoption rather than ChatGPT reliance, it provides complementary evidence that generative AI has become integrated into cognitively demanding activities within higher education. The present finding extends this line of inquiry by indicating that employees in corporate and higher education settings may demonstrate comparable levels of ChatGPT reliance despite differences in their institutional environments.

A different result emerged for Cognitive Offloading. Corporate employees reported a higher mean ($M = 3.08$, $SD = 0.57$) than HEI employees ($M = 2.94$, $SD = 0.60$), and this difference was statistically significant, $t = 2.34$, $p = 0.020$. Accordingly, the null hypothesis for Cognitive Offloading was rejected. The effect size was small ($d = 0.24$), indicating that although the difference was statistically significant, its practical magnitude was limited.

The higher Cognitive Offloading score among corporate employees suggests that they may transfer somewhat more memory, information-processing, problem-solving, or task-processing activities to ChatGPT than employees in HEIs. This interpretation should nevertheless remain cautious because the group comparison establishes a difference but does not determine why the difference exists. Potential explanations involving organizational workflow, productivity pressures, job design, professional norms, or task structures would require additional empirical evidence.

Tankelevitch et al. (2024) provide a useful conceptual basis for interpreting this result. They explain that generative AI enables users to offload cognitive processes such as ideation, memory retrieval, and reasoning while simultaneously creating new metacognitive demands related to deciding what to delegate and evaluating AI-generated outputs. The significant sector difference observed in the present study may therefore indicate that the extent of cognitive delegation, rather than merely the extent of ChatGPT use, differs somewhat across organizational environments.

The result is particularly interesting when compared with Critical Thinking in the Workplace. HEI employees obtained a slightly higher mean ($M = 3.30$, $SD = 0.51$) than corporate employees ($M = 3.20$, $SD = 0.54$). However, the difference did not reach statistical significance, $t = -1.87$, $p = .062$. Since $p > 0.05$, the null hypothesis for Critical Thinking was not rejected. The corresponding effect size was small ($d = 0.19$), further indicating that the difference between the groups was limited.

The absence of a statistically significant difference in Critical Thinking indicates that employees in both organizational settings reported broadly comparable levels of analysis, evaluation, inference, and reflective judgment. This result is relevant to the findings of Lee et al. (2025), who showed that critical thinking remains important in GenAI-supported knowledge work but may shift toward activities such as verifying AI-generated information, integrating AI responses with existing knowledge, and maintaining stewardship over task outcomes. Such cognitive responsibilities can apply across both corporate and higher education work environments.

The finding also provides continuity with Betito (2026), whose research demonstrated a very high level of critical thinking among graduate students using generative AI and found that critical thinking was significantly associated with graduate research quality. While the population and context of that study differ from those of the present investigation, both studies underscore the continuing relevance of human critical-

thinking capability in AI-supported activities. The present results further indicate that this capability is not statistically different between the corporate and HEI employees represented in the simulated sample.

Taken collectively, the findings reveal an important distinction between AI reliance and cognitive delegation. Corporate and HEI employees did not significantly differ in their overall levels of ChatGPT Reliance or Critical Thinking, but they differed significantly in Cognitive Offloading, with corporate employees reporting a somewhat higher level. This pattern suggests that employees in the two settings may use ChatGPT to a comparable extent while differing in how much cognitive processing they delegate to the technology. However, given the small effect size ($d = 0.24$), the sector difference in Cognitive Offloading should not be overstated.

For hypothesis reporting, it is methodologically preferable not to make one overall reject/fail-to-reject decision for H_{05} because the three dependent variables produced different results. The findings should instead be reported as follows: H_{05} was not rejected for ChatGPT Reliance and Critical Thinking but was rejected for Cognitive Offloading. If the study requires a single omnibus decision concerning all three dependent variables simultaneously, MANOVA should be conducted before the follow-up univariate tests.

Overall, the results indicate that organizational setting differentiates Cognitive Offloading but not ChatGPT Reliance or Critical Thinking in the Workplace within this dataset. Corporate employees demonstrated significantly higher Cognitive Offloading than HEI employees, although the difference was small, while both groups showed statistically comparable ChatGPT Reliance and Critical Thinking. These findings provide useful empirical support for developing the proposed Human–AI Cognitive Sustainability Framework, particularly by recognizing that responsible AI-use strategies may need to consider differences in how employees cognitively delegate work to AI across organizational settings.

Proposed Human–AI Cognitive Sustainability Framework

Based on the findings of the study, a Human–AI Cognitive Sustainability Framework (HAICSF) may be developed to promote the appropriate use of ChatGPT while preserving employees' critical-thinking capabilities. The framework responds directly to the major findings: employees demonstrated High ChatGPT Reliance ($M = 3.18$), High Cognitive Offloading ($M = 3.01$), and High Critical Thinking ($M = 3.25$); ChatGPT Reliance was strongly and positively related to Cognitive Offloading ($r = 0.61$, $p < 0.001$); both ChatGPT Reliance ($r = -0.29$) and Cognitive Offloading ($r = -0.46$) were negatively related to Critical Thinking; and Cognitive Offloading ($\beta = -0.37$) emerged as the stronger negative predictor compared with ChatGPT Reliance ($\beta = -0.10$). These findings suggest that the central organizational concern should not be the elimination of ChatGPT use but the management of how employees rely on AI and which cognitive activities they delegate to it.

Proposed Human–AI Cognitive Sustainability Framework (HAICSF)

Framework Component	Focus	Recommended Organizational Practices	Intended Outcome
1. Appropriate ChatGPT Reliance	Use ChatGPT as a support tool rather than a substitute for professional judgment	Encourage AI use for information seeking, brainstorming, drafting, summarization, and routine task support; require human responsibility for final outputs	Balanced AI Reliance
2. Strategic Cognitive Offloading	Differentiate cognitive activities that may be delegated from those that should remain	Offload routine retrieval, organization, formatting, and repetitive processing while retaining higher-order reasoning	Productive Cognitive Offloading

	human-led		
3. Critical-Thinking Preservation	Protect analysis, evaluation, inference, and reflective judgment	Require employees to question, verify, compare, interpret, and justify AI-generated outputs	Sustained Critical Thinking
4. Human Verification and Oversight	Maintain accountability for AI-assisted work	Verify facts, sources, calculations, assumptions, and recommendations before adoption	Responsible Human–AI Decisions
5. AI and Cognitive Literacy Development	Develop competencies for appropriate AI use	Training in prompt design, verification, AI limitations, bias awareness, cognitive offloading, and critical evaluation	AI-Capable and Cognitively Engaged Employees
6. Organizational AI Governance	Establish boundaries and accountability	Develop policies on acceptable AI use, confidentiality, validation, attribution, and human accountability	Responsible AI-Enabled Workplace
7. Cognitive Sustainability Monitoring	Prevent excessive reliance and erosion of independent reasoning	Periodically assess ChatGPT reliance, cognitive offloading, critical thinking, and employee AI-use practices	Human–AI Cognitive Sustainability

DISCUSSION OF THE FRAMEWORK

The first component, Appropriate ChatGPT Reliance, recognizes that ChatGPT itself should not necessarily be treated as detrimental to employee cognition. The findings showed a High level of ChatGPT Reliance, but its unique negative predictive relationship with Critical Thinking was relatively modest ($\beta = -.10$). Therefore, the framework does not advocate restricting productive AI use. Instead, ChatGPT should function as an augmentative technology that assists employees with information retrieval, idea generation, drafting, summarization, and routine processing while preserving human responsibility for final judgments. This principle is consistent with Tankelevitch et al. (2024), who emphasize that effective GenAI use requires metacognitive decisions concerning when to rely on AI, what to delegate, and how generated outputs should be evaluated.

The second component, Strategic Cognitive Offloading, constitutes the central mechanism of the framework. The study found that Cognitive Offloading was significantly associated with ChatGPT Reliance ($r = 0.61$) and demonstrated a stronger negative relationship with Critical Thinking ($r = -0.46$) than ChatGPT Reliance did ($r = -0.29$). Moreover, Cognitive Offloading emerged as the stronger negative predictor of Critical Thinking ($\beta = -0.37$). These findings indicate that organizational interventions should focus not only on how much employees use ChatGPT but on what cognitive processes they transfer to it. Employees may appropriately offload routine memory retrieval, information organization, formatting, summarization, and repetitive processing while retaining human control over analysis, evaluation, inference, and reflective judgment.

The third component, Critical-Thinking Preservation, establishes the cognitive capabilities that should remain actively exercised by employees. The study found an overall High level of Critical Thinking ($M = 3.25$), with Analysis ($M = 3.31$) and Reflective Judgment ($M = 3.27$) emerging as the strongest dimensions. Organizations should therefore reinforce practices requiring employees to analyze AI-generated information, evaluate its credibility, infer conclusions independently, and reflect on its appropriateness before applying it. Lee et al. (2025) similarly found that critical thinking in GenAI-supported knowledge work increasingly involves verification, integration, and stewardship of AI-generated outputs.

The fourth component, Human Verification and Oversight, operationalizes critical thinking within AI-assisted work. Employees should remain accountable for verifying the factual accuracy, relevance, assumptions, sources, and implications of ChatGPT-generated outputs. A useful organizational principle under the framework is therefore:

AI may generate → Human must evaluate → Human decides.

This sequence ensures that cognitive efficiency is obtained without transferring final professional responsibility to the AI system. It also distinguishes cognitive assistance from cognitive substitution.

The fifth component, AI and Cognitive Literacy Development, recognizes that responsible human–AI collaboration requires more than technical proficiency. Employees should receive training not only in prompting and effective AI use but also in source verification, AI limitations, hallucination detection, bias awareness, critical evaluation, and appropriate cognitive offloading. This component is consistent with Betito (2026), whose earlier research demonstrated the importance of maintaining critical thinking and digital research competency alongside GenAI adoption. The present study extends that perspective from graduate research to workplace cognition by identifying cognitive offloading as an additional mechanism requiring deliberate management.

The sixth component, Organizational AI Governance, translates the individual-level findings into organizational policy. Corporate organizations and HEIs should establish clear standards regarding acceptable AI use, confidential information, verification requirements, attribution, human accountability, and tasks for which AI-generated recommendations require professional review. This component is especially relevant because the findings showed a statistically significant difference in Cognitive Offloading between corporate and HEI employees, suggesting that organizational context may influence how cognitive activities are delegated to AI.

Finally, Cognitive Sustainability Monitoring provides a feedback mechanism for the framework. Organizations should periodically assess employees' ChatGPT reliance, cognitive offloading, critical-thinking practices, and AI competencies. Monitoring should not simply measure the frequency of AI use. Instead, it should determine whether employees continue to demonstrate independent analysis, verification, inference, reflective judgment, and professional accountability as AI becomes increasingly embedded in workplace processes.

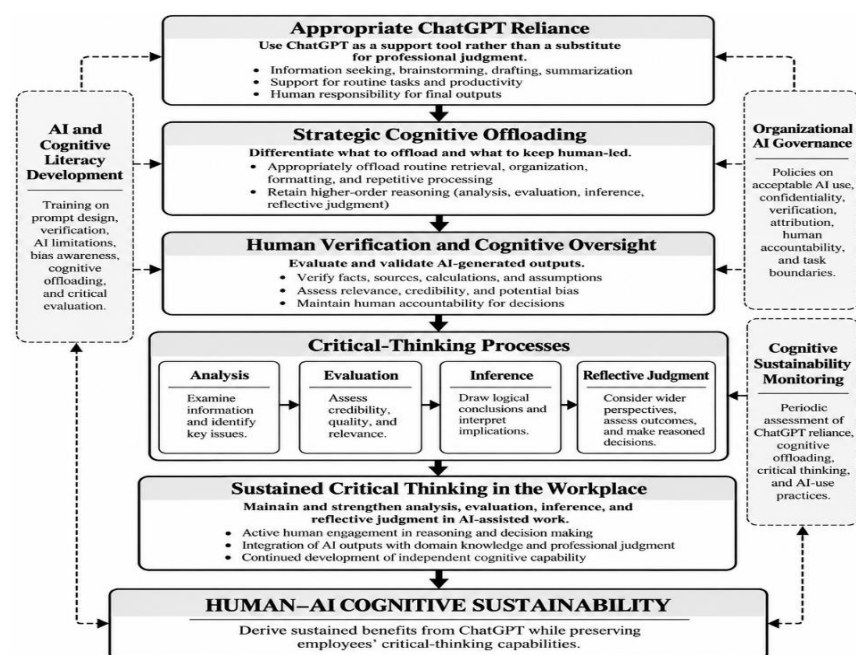


Figure 2: Human–AI Cognitive Sustainability Framework (HAICSF)

Figure 2 presents the proposed Human–AI Cognitive Sustainability Framework (HAICSF) developed from the findings of the study. The framework illustrates a sequential process beginning with Appropriate ChatGPT Reliance, which emphasizes the use of ChatGPT as a support tool rather than a substitute for professional judgment. Employees may use ChatGPT for information seeking, brainstorming, drafting, summarization, and routine tasks while retaining responsibility for the accuracy, appropriateness, and final quality of their work.

The second component, Strategic Cognitive Offloading, emphasizes the deliberate selection of cognitive activities that may be delegated to ChatGPT. Routine activities such as information retrieval, organization, formatting, and repetitive processing may be appropriately offloaded, while higher-order cognitive functions should remain primarily human-led. This leads to Human Verification and Cognitive Oversight, where employees are expected to verify facts, sources, calculations, and assumptions; assess the relevance and credibility of AI-generated information; identify potential biases; and maintain accountability for decisions.

At the center of the framework are the four Critical-Thinking Processes: Analysis, Evaluation, Inference, and Reflective Judgment. Analysis involves examining information and identifying relevant issues; evaluation concerns assessing the credibility, quality, and relevance of information; inference involves drawing logical conclusions and interpreting implications; and reflective judgment requires employees to consider different perspectives, assess potential consequences, and arrive at reasoned decisions. These processes emphasize that employees should remain cognitively engaged even when ChatGPT performs portions of their work.

The framework subsequently leads to Sustained Critical Thinking in the Workplace, which represents the continued exercise and development of employees' higher-order cognitive capabilities in an AI-assisted work environment. Employees are expected to integrate AI-generated outputs with their professional knowledge and experience while maintaining active participation in reasoning and decision-making. The framework therefore promotes a form of human–AI collaboration in which technological efficiency is achieved without unnecessarily transferring higher-order judgment to the AI system.

Three supporting mechanisms surround the main process: AI and Cognitive Literacy Development, Organizational AI Governance, and Cognitive Sustainability Monitoring. AI and Cognitive Literacy Development equips employees with competencies in prompt design, verification, awareness of AI limitations and biases, appropriate cognitive offloading, and critical evaluation. Organizational AI Governance establishes policies concerning acceptable AI use, confidentiality, verification, attribution, accountability, and task boundaries. Cognitive Sustainability Monitoring provides periodic assessment of employees' ChatGPT reliance, cognitive offloading, critical thinking, and AI-use practices. Together, these mechanisms provide the organizational infrastructure necessary to sustain responsible human–AI interaction.

Ultimately, the framework culminates in Human–AI Cognitive Sustainability, which refers to the capacity of employees and organizations to derive sustained benefits from ChatGPT while preserving employees' independent reasoning, critical-thinking capabilities, professional judgment, and accountability. Thus, Figure 2 emphasizes that effective workplace AI integration does not require eliminating cognitive offloading; rather, it requires appropriate ChatGPT reliance, strategic cognitive offloading, continuous human verification, and deliberate preservation of higher-order cognitive processes.

CONCLUSION AND RECOMMENDATION

Conclusion

Based on the findings of the study, it is concluded that ChatGPT has become an important cognitive and task-support resource among employees in corporate organizations and higher education institutions. Employees demonstrated a High level of ChatGPT Reliance ($M = 3.18$), with the greatest reliance observed in information-seeking activities. They likewise exhibited a High level of Cognitive Offloading ($M = 3.01$), particularly in memory and information-related activities. At the same time, employees maintained a High

level of Critical Thinking in the Workplace ($M = 3.25$), with analysis and reflective judgment emerging as the strongest dimensions. These findings indicate that substantial use of ChatGPT can coexist with relatively strong critical-thinking capabilities; however, the manner in which employees cognitively engage with the technology remains important.

The findings further establish that ChatGPT Reliance was significantly and positively related to Cognitive Offloading ($r = 0.61$, $p < 0.001$). Employees who relied more heavily on ChatGPT also tended to transfer more cognitive activities to the technology. Conversely, ChatGPT Reliance demonstrated a significant but weak negative relationship with Critical Thinking ($r = -0.29$, $p < 0.001$), while Cognitive Offloading exhibited a stronger moderate negative relationship with Critical Thinking ($r = -0.46$, $p < 0.001$). These findings suggest that the potential cognitive concern associated with workplace AI use lies not merely in the frequency or extent of ChatGPT use, but particularly in which cognitive processes employees delegate to the system.

The multiple regression analysis further demonstrated that ChatGPT Reliance and Cognitive Offloading individually and collectively significantly predicted Critical Thinking in the Workplace, explaining 22.1% of its variance ($R^2 = 0.221$). Cognitive Offloading ($\beta = -0.37$, $p < 0.001$) demonstrated the larger negative unique predictive relationship compared with ChatGPT Reliance ($\beta = -0.10$, $p = 0.040$). Thus, the findings indicate that excessive transfer of cognitive activities to ChatGPT may be more closely associated with reduced critical-thinking engagement than reliance on ChatGPT itself. The results should nevertheless be interpreted as predictive associations rather than causal effects because of the study's cross-sectional, non-experimental design.

With respect to organizational setting, employees in corporate organizations and higher education institutions did not significantly differ in ChatGPT Reliance or Critical Thinking in the Workplace. However, corporate employees demonstrated significantly higher Cognitive Offloading than employees in HEIs, although the magnitude of the difference was small. This finding suggests that organizational context may influence how employees delegate cognitive activities to AI even when overall levels of ChatGPT reliance are comparable.

Taken collectively, the study concludes that the central challenge of workplace generative AI is not simply whether employees should or should not use ChatGPT. Rather, the critical issue is achieving an appropriate balance between AI-supported efficiency and sustained human cognitive engagement. ChatGPT can support information retrieval, task processing, idea generation, and routine work; however, employees should retain active responsibility for analysis, evaluation, inference, reflective judgment, verification, and final decision-making. On this basis, the study proposes the Human–AI Cognitive Sustainability Framework (HAICSF) as a structured approach for promoting appropriate ChatGPT reliance, strategic cognitive offloading, human verification and cognitive oversight, sustained critical thinking, AI and cognitive literacy, organizational AI governance, and continuous cognitive sustainability monitoring.

RECOMMENDATIONS

Based on the conclusions of the study, organizations should adopt a balanced approach to ChatGPT integration rather than either unrestricted dependence or unnecessary restriction of AI use. Corporate organizations and higher education institutions should develop clear guidelines identifying activities that may appropriately be supported or partially offloaded to ChatGPT, such as routine information retrieval, summarization, preliminary drafting, formatting, and repetitive processing. Conversely, activities requiring professional judgment, interpretation, analysis, evaluation, inference, ethical consideration, and consequential decision-making should remain subject to meaningful human oversight.

Organizations should strengthen AI and cognitive literacy programs for employees. Training should extend beyond prompt engineering and technical proficiency to include verification of AI-generated information, source evaluation, identification of hallucinations and bias, protection of confidential information, recognition of AI limitations, and appropriate cognitive offloading. Employees should be trained to apply a

deliberate human-verification process in which AI-generated outputs are critically examined before being incorporated into reports, recommendations, academic work, or organizational decisions.

Particular attention should be directed toward Cognitive Offloading, since it emerged as the stronger negative predictor of Critical Thinking. Organizations should encourage employees to distinguish between productive cognitive offloading and cognitive substitution. Routine and repetitive cognitive demands may be delegated when appropriate, but employees should continue to exercise higher-order cognitive processes. Organizational practices may therefore incorporate the principle that AI may assist or generate, but humans must verify, evaluate, contextualize, and decide.

Corporate organizations may give additional attention to cognitive-offloading practices because corporate employees demonstrated a statistically higher level of Cognitive Offloading than HEI employees. However, given the small effect size, this difference should not be overstated. Both organizational settings would benefit from periodically assessing not merely the frequency of ChatGPT use but also the types of tasks employees delegate to AI and whether employees continue to exercise independent reasoning and professional accountability.

Higher education institutions should incorporate responsible GenAI use and critical AI literacy into faculty development, research training, administrative processes, and professional-development programs. Employees should be encouraged to use ChatGPT as a cognitive scaffold rather than as a replacement for scholarly or professional reasoning. Particular emphasis should be placed on verifying AI-generated information, evaluating evidence, drawing independent conclusions, and maintaining reflective judgment.

Organizations should consider adopting the proposed Human–AI Cognitive Sustainability Framework (HAICSF) as a guide for responsible workplace AI integration. The framework may inform institutional policies, employee-development programs, AI-use protocols, performance-management practices, and periodic assessments of ChatGPT reliance, cognitive offloading, and critical-thinking capability. Its implementation should be periodically evaluated and refined as generative AI technologies and workplace practices evolve.

Finally, future researchers should validate the proposed HAICSF using actual empirical data across broader populations, industries, occupational levels, and geographic locations. Longitudinal and experimental studies may determine whether changes in ChatGPT reliance and cognitive offloading precede changes in critical-thinking performance. Future studies may also examine possible mediating or moderating variables such as AI literacy, metacognitive awareness, task complexity, professional experience, organizational AI governance, trust in AI, and human–AI collaboration quality. Objective or performance-based measures of critical thinking may also be combined with self-report instruments to strengthen the validity of future findings.

REFERENCES

1. Betito, A. D. L. R. (2026). Generative artificial intelligence adoption, critical thinking, and digital research competency as predictors of graduate research quality: Developing an AI-assisted research excellence framework. *International Journal of Research and Scientific Innovation*, 13(8), 1–18. DOI: [10.51244/IJRSI.2026.1308000001](https://doi.org/10.51244/IJRSI.2026.1308000001)
2. Betito, A. D. L. R., Saludario, R. A., Bonanciar, S. A., II, Jimenez, J. M., Mangahas, R., Jr., & Bugay, I. B. (2026). Leadership, artificial intelligence capability, and total quality management as strategic determinants of sustainable operational excellence across industries. *International Journal of Special Education*, 41(10s), 983–1002. <https://internationalsped.com/index.php/ijse/article/view/3765>
3. Brynjolfsson, E., Li, D., & Raymond, L. R. (2025). Generative AI at work. *The Quarterly Journal of Economics*, 140(2), 889–942. <https://doi.org/10.1093/qje/qjae044>
4. Gerlich, M. (2025). AI tools in society: Impacts on cognitive offloading and the future of critical thinking. *Societies*, 15(1), Article 6. <https://doi.org/10.3390/soc15010006>

5. Hong, H., Vate-U-Lan, P., & Viriyavejakul, C. (2025). Cognitive offload instruction with generative AI: A quasi-experimental study on critical thinking gains in English writing. *Forum for Linguistic Studies*, 7(7), 325–334. <https://doi.org/10.30564/fls.v7i7.10072>
6. Jain, P., Shajit, D., Maini, A., Shahin, Y., & Panda, A. (2026). Cognitive offloading, critical thinking and attitudes towards artificial intelligence in the era of ChatGPT: A comparative study of artificial intelligence-assisted and manual task performance in young adults. *Cognitive Processing*. <https://doi.org/10.1007/s10339-026-01375-z>
7. Lee, H.-P., Sarkar, A., Tankelevitch, L., Drosos, I., Rintel, S., Banks, R., & Wilson, N. (2025). The impact of generative AI on critical thinking: Self-reported reductions in cognitive effort and confidence effects from a survey of knowledge workers. *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems*, 1–22. DOI: 10.1145/3706598.3713778.
8. Noy, S., & Zhang, W. (2023). Experimental evidence on the productivity effects of generative artificial intelligence. *Science*, 381(6654), 187–192. <https://doi.org/10.1126/science.adh2586>
9. Retkowsky, J., Hafermalz, E., & Huysman, M. (2024). Managing a ChatGPT-empowered workforce: Understanding its affordances and side effects. *Business Horizons*, 67(5), 511–523. <https://doi.org/10.1016/j.bushor.2024.04.009>
10. Tankelevitch, L., Kewenig, V., Simkute, A., Scott, A. E., Sarkar, A., Sellen, A., & Rintel, S. (2024). The metacognitive demands and opportunities of generative AI. In *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems* (Article 680, pp. 1–24). Association for Computing Machinery. DOI: 10.1145/3613904.3642902.