ChatGPT-Assisted Work and Employee Task Efficiency: The Mediating Role of Cognitive Workload across Corporate and Higher Education Settings

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ABSTRACT

The increasing integration of ChatGPT into workplace activities has created opportunities to improve employee performance while raising concerns regarding its implications for cognitive workload. This study examined ChatGPT-assisted work and employee task efficiency, with cognitive workload as a mediating variable, across corporate organizations and higher education institutions. A quantitative, non-experimental, cross-sectional, predictive-correlational research design was employed involving 384 employees, equally distributed between corporate organizations and higher education institutions. Data were collected using a validated structured questionnaire and analyzed through descriptive statistics, Pearson correlation, simple linear regression, independent-samples t-test, and bootstrapped mediation analysis. The findings revealed a very high level of ChatGPT-assisted work ($M = 3.31$, $SD = 0.56$), a high level of cognitive workload ($M = 2.58$, $SD = 0.63$), and a very high level of employee task efficiency ($M = 3.32$, $SD = 0.55$). ChatGPT-assisted work was significantly and negatively related to cognitive workload ($r = -0.38$, $p < 0.001$) and significantly and positively related to employee task efficiency ($r = 0.57$, $p < 0.001$), while cognitive workload was significantly and negatively related to employee task efficiency ($r = -0.44$, $p < 0.001$). ChatGPT-assisted work significantly predicted employee task efficiency ($\beta = 0.57$, $R^2 = 0.325$, $p < 0.001$), while cognitive workload partially mediated the relationship (indirect effect = 0.10, 95% CI [0.060, 0.151]). No significant differences were found between the two organizational settings in ChatGPT-assisted work and task efficiency, although higher education employees reported significantly greater cognitive workload. Based on the findings, the ChatGPT-Assisted Work and Task Efficiency Framework (CAWTEF) was developed to promote efficient, responsible, and cognitively sustainable human–AI collaboration.

Keywords: ChatGPT-assisted work, cognitive workload, employee task efficiency, generative AI, human–AI collaboration, corporate organizations, higher education institutions

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INTRODUCTION

The rapid advancement of generative artificial intelligence (GenAI) is reshaping how employees perform knowledge-intensive tasks across contemporary organizations. Among these technologies, ChatGPT has emerged as a prominent AI-assisted work tool capable of supporting information retrieval, content generation, drafting, summarization, problem solving, communication, and decision-related activities. Rather than functioning solely as an information source, ChatGPT can serve as a cognitive and task-support mechanism that enables employees to complete selected work activities with greater speed and potentially greater efficiency. Experimental evidence supports this potential: Noy and Zhang (2023) found that professionals using generative AI completed writing-related tasks approximately 40% faster and produced outputs rated 18% higher in quality, while Brynjolfsson et al. (2025) reported productivity improvements among customer-support employees provided access to a generative AI conversational assistant. The growing integration of ChatGPT into knowledge work also suggests that its organizational relevance increasingly depends on how employees incorporate the technology into actual workflows rather than simply whether they adopt it (Kietzmann & Park, 2024). This perspective is consistent with the findings of Betito et al. (2026), who established that artificial intelligence capability, together with leadership and total quality management, contributes to sustainable operational excellence across industries. Likewise, Betito (2026) demonstrated that generative AI adoption, critical thinking, and digital research competency significantly contribute to graduate research quality, emphasizing that the benefits derived from GenAI are interconnected with the cognitive capabilities of its users. Collectively, these findings establish a foundation for examining ChatGPT at the employee-task level and determining whether its integration into everyday work contributes to greater task efficiency.

Despite the potential efficiency benefits of ChatGPT, its influence on employee performance may not be exclusively direct because interacting with generative AI can alter the cognitive demands associated with task completion. Cognitive workload, referring to the mental effort and cognitive resources required to perform a task, may therefore constitute an important mechanism connecting ChatGPT-assisted work with employee task efficiency. ChatGPT may reduce cognitive workload by assisting employees with information processing, idea generation, drafting, summarization, routine problem solving, and other mentally demanding activities, thereby allowing employees to redirect cognitive resources toward judgment, analysis, and higher-value tasks. Conversely, AI assistance may introduce new cognitive demands because employees must formulate appropriate prompts, interpret generated responses, verify factual accuracy, identify possible errors or hallucinations, evaluate contextual appropriateness, and determine whether AI-generated content can be responsibly incorporated into their work. Consequently, greater use of ChatGPT does not automatically imply reduced mental effort or improved efficiency. Research examining generative AI, workload, efficiency, and labor productivity has identified workload as an important consideration in understanding the performance consequences of AI-supported work (Tuncer et al., 2025), while emerging evidence suggests that AI-assisted task performance can facilitate cognitive offloading and modify the cognitive processes employees use to accomplish tasks (Jain et al., 2026). These findings indicate that cognitive workload warrants examination not merely as another employee outcome but as a potential mediating variable explaining how ChatGPT-assisted work translates into employee task efficiency. Such an approach moves beyond the conventional question of whether employees use ChatGPT and instead investigates the underlying cognitive mechanism through which AI assistance may facilitate or constrain effective task performance.

The relationship among ChatGPT-assisted work, cognitive workload, and employee task efficiency is particularly important across corporate organizations and higher education institutions, where employees routinely engage in information-intensive but contextually different forms of knowledge work. Corporate employees may use ChatGPT for documentation, communication, customer support, data interpretation, planning, report preparation, marketing, and administrative processes, while employees in higher education institutions may apply it to teaching preparation, research-related activities, academic administration, student support, institutional documentation, and professional communication. Although previous studies have established productivity benefits associated with generative AI in professional writing and customer-service contexts (Brynjolfsson et al., 2025; Noy & Zhang, 2023), and prior research by Betito et al. (2026) and Betito (2026) has demonstrated the strategic and academic relevance of artificial intelligence capability and GenAI

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adoption, respectively, comparatively less attention has been given to the employee-level cognitive pathway through which ChatGPT-assisted work may influence task efficiency across distinct organizational settings. This represents an important empirical and contextual gap because similar AI technologies may produce different work experiences depending on task characteristics, professional responsibilities, and organizational environments. Accordingly, the present study examines ChatGPT-assisted work and employee task efficiency, with cognitive workload as a mediating variable across corporate organizations and higher education institutions. By testing both the direct relationship between ChatGPT-assisted work and task efficiency and the indirect relationship operating through cognitive workload, the study seeks to extend existing AI adoption and organizational performance research toward a more explanatory model of human–AI-supported work. The findings may contribute to the emerging literature on human–AI collaboration and provide evidence for developing organizational approaches that promote productive, responsible, and cognitively sustainable integration of ChatGPT into contemporary workplaces.

Research Questions

This study aims to examine the relationship between ChatGPT-assisted work and employee task efficiency and determine the mediating role of cognitive workload across corporate organizations and higher education institutions. Specifically, it seeks to answer the following questions:

1. What is the level of ChatGPT-assisted work among employees in corporate organizations and higher education institutions in terms of:
   1.1 information and knowledge support;
   1.2 content and communication assistance;
   1.3 problem-solving and decision support; and
   1.4 task and workflow assistance?

2. What is the level of cognitive workload experienced by employees when performing ChatGPT-assisted work in terms of:
   2.1 mental demand;
   2.2 effort;
   2.3 task complexity; and
   2.4 information-processing demand?

3. What is the level of employee task efficiency in terms of:
   3.1 task completion speed;
   3.2 work accuracy and quality;
   3.3 resource and effort efficiency; and
   3.4 timely task accomplishment?

4. Is there a significant relationship between ChatGPT-assisted work and cognitive workload among employees in corporate organizations and higher education institutions?
5. Is there a significant relationship between ChatGPT-assisted work and employee task efficiency among employees in corporate organizations and higher education institutions?
6. Is there a significant relationship between cognitive workload and employee task efficiency among employees in corporate organizations and higher education institutions?
7. Does ChatGPT-assisted work significantly predict employee task efficiency?
8. Does cognitive workload significantly mediate the relationship between ChatGPT-assisted work and employee task efficiency?
9. Are there significant differences in ChatGPT-assisted work, cognitive workload, and employee task efficiency between employees in corporate organizations and those in higher education institutions?
10. Based on the findings of the study, what ChatGPT-Assisted Work and Task Efficiency Framework may be developed to promote efficient and cognitively sustainable use of ChatGPT across corporate organizations and higher education institutions?

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Hypotheses of the Study

The following null hypotheses will be tested at the 0.05 level of significance:

H_o1: There is no significant relationship between ChatGPT-assisted work and cognitive workload among employees in corporate organizations and higher education institutions.

H_o2: There is no significant relationship between ChatGPT-assisted work and employee task efficiency among employees in corporate organizations and higher education institutions.

H_o3: There is no significant relationship between cognitive workload and employee task efficiency among employees in corporate organizations and higher education institutions.

H_o4: ChatGPT-assisted work does not significantly predict employee task efficiency among employees in corporate organizations and higher education institutions.

H_o5: Cognitive workload does not significantly mediate the relationship between ChatGPT-assisted work and employee task efficiency among employees in corporate organizations and higher education institutions.

H_o6: There are no significant differences in ChatGPT-assisted work, cognitive workload, and employee task efficiency between employees in corporate organizations and those in higher education institutions.

Framework of the Study

The framework of this study presents the proposed relationships among ChatGPT-assisted work, cognitive workload, and employee task efficiency across corporate organizations and higher education institutions. It is based on the premise that the use of ChatGPT as a work-support technology can influence how employees process information, perform cognitively demanding activities, allocate mental resources, and accomplish work-related tasks. Rather than assuming that ChatGPT use automatically improves employee performance, the framework recognizes that the effects of AI-assisted work may operate partly through changes in the cognitive demands experienced by employees. Accordingly, ChatGPT-assisted work serves as the independent variable, cognitive workload functions as the mediating variable, and employee task efficiency represents the dependent variable. The framework is examined across two organizational settings—corporate organizations and higher education institutions—to determine whether the study variables and their relationships are evident within different forms of knowledge-intensive work.

The framework proposes that ChatGPT-assisted work directly influences cognitive workload and employee task efficiency. ChatGPT-assisted work is represented by four dimensions: information and knowledge support, content and communication assistance, problem-solving and decision support, and task and workflow assistance. Through these functions, ChatGPT may reduce the amount of cognitive effort required for information retrieval, initial drafting, summarization, routine analysis, and other work activities. However, employees may also experience additional cognitive demands associated with constructing prompts, interpreting responses, verifying AI-generated information, correcting inaccurate outputs, and integrating generated content into organizational tasks. Cognitive workload is therefore examined through mental demand, effort, task complexity, and information-processing demand. This positioning recognizes that the contribution of ChatGPT to work performance may depend not only on the availability or frequency of AI assistance but also on whether such assistance effectively manages or intensifies employees' cognitive requirements.

The framework further proposes that cognitive workload mediates the relationship between ChatGPT-assisted work and employee task efficiency. Employee task efficiency is reflected through task completion speed, work accuracy and quality, resource and effort efficiency, and timely task accomplishment. The mediating pathway suggests that ChatGPT-assisted work may influence task efficiency partly because it changes the cognitive resources required to perform work. Thus, the model examines both a direct pathway, in which ChatGPT-assisted work is associated with employee task efficiency, and an indirect pathway, in which ChatGPT-assisted

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work influences cognitive workload, which subsequently relates to task efficiency. The framework also incorporates organizational setting—corporate organizations and higher education institutions—as a comparative grouping factor, allowing the study to determine whether employees in these settings differ significantly in their levels of ChatGPT-assisted work, cognitive workload, and task efficiency. The empirical findings from these relationships and sectoral comparisons will provide the basis for developing the proposed ChatGPT-Assisted Work and Task Efficiency Framework (CAWTEF), which is intended to guide organizations toward productive, responsible, and cognitively sustainable integration of ChatGPT into employee work processes.

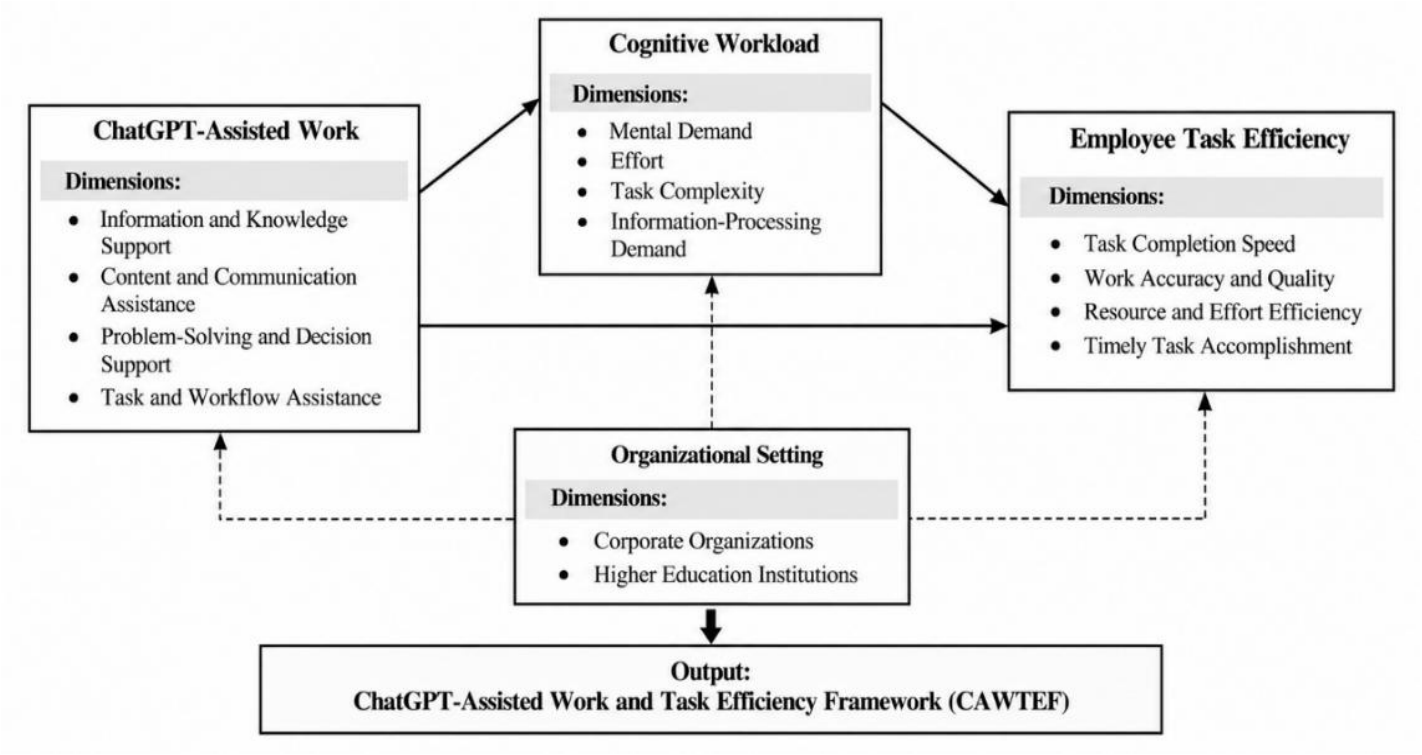


Figure 1: Framework of the Study

Figure 1 presents the conceptual framework of the study, showing the proposed relationships among ChatGPT-Assisted Work, Cognitive Workload, and Employee Task Efficiency across corporate organizations and higher education institutions. ChatGPT-Assisted Work is examined through information and knowledge support, content and communication assistance, problem-solving and decision support, and task and workflow assistance. It is proposed to influence Employee Task Efficiency directly and indirectly through Cognitive Workload.

Cognitive Workload serves as the mediating variable and is assessed through mental demand, effort, task complexity, and information-processing demand. The framework assumes that ChatGPT-assisted work may alter the cognitive resources employees require to perform their tasks, which may subsequently influence task completion speed, work accuracy and quality, resource and effort efficiency, and timely task accomplishment. Thus, the framework examines both the direct relationship between ChatGPT-Assisted Work and Employee Task Efficiency and the indirect pathway through Cognitive Workload.

The framework also considers organizational setting, represented by corporate organizations and higher education institutions, as a contextual grouping factor for determining differences in the study variables across the two work environments. The significant relationships, mediation effects, and sectoral findings generated by the study will provide the empirical basis for developing the proposed ChatGPT-Assisted Work and Task Efficiency Framework (CAWTEF), which aims to promote productive, responsible, and cognitively sustainable use of ChatGPT in the workplace.

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METHODOLOGY

Research Design

The study will employ a quantitative, non-experimental, cross-sectional, predictive-correlational research design to examine the relationships among ChatGPT-Assisted Work, Cognitive Workload, and Employee Task Efficiency across corporate organizations and higher education institutions. The quantitative approach will enable the systematic measurement and statistical analysis of the study variables using numerical data obtained from respondents. The non-experimental design is appropriate because the variables will be examined as they naturally occur in the workplace without manipulation or controlled intervention. Data will be collected at a single point in time, making the study cross-sectional in nature.

The predictive-correlational component will determine the magnitude and direction of the relationships among the study variables and assess whether ChatGPT-Assisted Work significantly predicts Employee Task Efficiency. Mediation analysis will be employed to determine whether Cognitive Workload significantly mediates the relationship between ChatGPT-Assisted Work and Employee Task Efficiency. The study will also compare employees from corporate organizations and higher education institutions to determine whether significant differences exist in the major study variables across the two organizational settings. Descriptive statistics, Pearson correlation, regression analysis, mediation analysis using bootstrapped indirect effects, and appropriate tests of group differences will be employed to address the research questions and test the hypotheses at the 0.05 level of significance.

Population, Sample Size, and Sampling Technique

The population of the study will consist of employees from selected corporate organizations and higher education institutions in Metro Manila who use ChatGPT in performing work-related tasks. Respondents from corporate organizations may include managerial, supervisory, professional, technical, and administrative personnel, while 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 currently employed by the participating organization or institution, be at least 18 years old, and have actual experience using ChatGPT for work-related activities such as information gathering, content preparation, communication, problem solving, documentation, research support, or task management.

The study will target a minimum of 384 respondents, based on a 95% confidence level, 5% margin of error, and 50% response distribution for a large or unspecified population. To support meaningful comparison between the two organizational settings, the target sample will be distributed as evenly as practicable, with approximately 192 respondents from corporate organizations and 192 respondents from higher education institutions. The sample is considered adequate for the descriptive, correlational, regression, group-comparison, and mediation analyses required by the study. Additional responses may be collected to compensate for incomplete, invalid, or unusable questionnaires.

A multi-stage sampling technique will be employed. First, purposive sampling will be used to identify corporate organizations and higher education institutions that permit employee participation and have personnel who use ChatGPT for work-related activities. Second, eligible respondents will be classified according to organizational setting—corporate organizations and higher education institutions—to ensure adequate representation of both groups. Where participating organizations provide lists of qualified employees, proportionate stratified random sampling will be used to select respondents from relevant occupational categories. In situations where complete employee lists cannot be obtained because of organizational privacy or access restrictions, qualified respondents will be recruited through purposive sampling with screening questions to ensure that only employees with actual work-related ChatGPT experience participate. This approach will enable the study to obtain respondents who are directly capable of evaluating ChatGPT-Assisted Work, Cognitive Workload, and Employee

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Research Instrument

The study will use a structured self-administered survey questionnaire as the primary research instrument for collecting quantitative data from employees of selected corporate organizations and higher education institutions. The questionnaire will be developed based on the study's conceptual framework, research questions, and relevant literature on generative AI-assisted work, cognitive workload, and employee task efficiency. Before the main survey, respondents will answer a screening question confirming that they have actual experience using ChatGPT for work-related tasks. Only qualified respondents will proceed to the main questionnaire.

The instrument will consist of four major parts. Part I will gather the respondents' relevant demographic and work-related characteristics, including organizational setting, employment category, length of service, frequency of ChatGPT use, and length of experience using ChatGPT for work. Part II will measure ChatGPT-Assisted Work in terms of information and knowledge support, content and communication assistance, problem-solving and decision support, and task and workflow assistance. Part III will assess Cognitive Workload through mental demand, effort, task complexity, and information-processing demand. Part IV will measure Employee Task Efficiency based on task completion speed, work accuracy and quality, resource and effort efficiency, and timely task accomplishment.

Responses to Parts II, III, and IV will be measured using a four-point Likert scale to avoid a neutral midpoint and encourage respondents to indicate a clear assessment of each statement. The scale will be interpreted as follows: 4 – Very High (3.26–4.00), 3 – High (2.51–3.25), 2 – Low (1.76–2.50), and 1 – Very Low (1.00–1.75). Higher scores will indicate higher levels of the construct being measured. Before full administration, the questionnaire will undergo expert validation to establish its content relevance, clarity, and alignment with the study variables. A pilot test involving approximately 30 qualified respondents who will not be included in the final sample will subsequently be conducted, and internal consistency reliability will be evaluated using Cronbach's alpha, with coefficients of 0.70 or higher generally considered acceptable for the study.

Validity and Reliability of the Research Instrument

Validity Test

The research instrument will undergo content validation to ensure that the questionnaire items adequately represent the constructs of ChatGPT-Assisted Work, Cognitive Workload, and Employee Task Efficiency and their respective dimensions. The questionnaire will be submitted to at least three experts with relevant expertise in research methodology, artificial intelligence or information systems, human resource or organizational management, and higher education. The validators will assess each item in terms of relevance, clarity, appropriateness, and alignment with the study objectives and conceptual framework.

The comments and recommendations of the expert validators will be incorporated into the revised questionnaire before pilot testing. Where appropriate, a Content Validity Index (CVI) will be computed to provide quantitative evidence of content validity. Items identified as unclear, redundant, or inadequately aligned with their intended constructs will be revised or removed. The finalized instrument will therefore contain only items considered appropriate for measuring the variables investigated in the study.

Reliability Test

Following content validation, the revised questionnaire will undergo a pilot test involving approximately 30 qualified respondents who possess characteristics comparable to those of the target population but will not be included in the final study. The pilot test will determine whether the questionnaire items are understandable and consistently measure their intended constructs. It will also provide an opportunity to identify ambiguous statements or other issues before the full administration of the instrument.

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The internal consistency reliability of the instrument will be assessed using Cronbach's alpha. Reliability coefficients will be computed separately for ChatGPT-Assisted Work, Cognitive Workload, and Employee Task Efficiency, including their respective dimensions where appropriate. A Cronbach's alpha coefficient of 0.70 or higher will be considered acceptable for internal consistency. Constructs or dimensions that fail to achieve the acceptable reliability threshold will be reviewed, and problematic items may be revised or removed before the questionnaire is administered to the final sample.

Data Gathering Procedure

Prior to data collection, the researcher will secure the necessary approval from the university and comply with applicable research ethics and institutional requirements. Formal permission will then be requested from the selected corporate organizations and higher education institutions to invite qualified employees to participate in the study. Following expert validation and pilot testing of the research instrument, the finalized questionnaire will be converted into an online survey using Google Forms. The survey will contain an informed consent statement explaining the purpose of the study, voluntary nature of participation, confidentiality of responses, expected completion requirements, and the respondents' right to discontinue participation at any time. A screening question will also be included to ensure that only employees with actual experience using ChatGPT for work-related tasks participate in the study.

Upon receiving the necessary permissions, the survey link will be distributed electronically to qualified respondents through authorized organizational communication channels. Data collection will continue until the required sample of approximately 384 valid responses, with adequate representation from corporate organizations and higher education institutions, is achieved. Responses will be reviewed for completeness, eligibility, duplicate entries, and apparent response-quality issues before inclusion in the final dataset. The cleaned data will subsequently be coded and prepared for statistical analysis using appropriate statistical software. Descriptive statistics, correlation analysis, regression analysis, mediation analysis using bootstrapped indirect effects, and appropriate tests of differences between the two organizational settings will be performed in accordance with the research questions and hypotheses. All collected data will be handled securely and used exclusively for academic and research purposes.

RESULTS AND DISCUSSION

This section presents the analysis and interpretation of the data on ChatGPT-Assisted Work, Cognitive Workload, and Employee Task Efficiency among employees in corporate organizations and higher education institutions. The presentation of results follows the sequence of the research questions and hypotheses of the study. Descriptive statistics will be used to determine the levels of the major variables, while inferential statistics will examine their relationships, predictive effects, mediation effects, and differences according to organizational setting. The findings will be interpreted in relation to the conceptual framework and relevant empirical literature.

1. Level of ChatGPT-assisted work among employees in corporate organizations and higher education institutions.

The integration of ChatGPT into workplace activities reflects the increasing use of generative artificial intelligence as a tool for supporting employees in performing knowledge-intensive and routine tasks. In this study, ChatGPT-assisted work was examined to determine the extent to which employees utilize the technology in accomplishing their professional responsibilities. Specifically, the assessment focused on four dimensions: information and knowledge support, content and communication assistance, problem-solving and decision support, and task and workflow assistance. The results provide an indication of how extensively ChatGPT is incorporated into work processes across corporate organizations and higher education institutions.

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Table 1 *Level of ChatGPT-Assisted Work Among Employees*

Dimensions	Mean	Standard Deviation	Interpretation
Information and Knowledge Support	3.42	0.51	Very High
Content and Communication Assistance	3.36	0.55	Very High
Problem-Solving and Decision Support	3.18	0.61	High
Task and Workflow Assistance	3.29	0.57	Very High
Overall	**3.31**	**0.56**	**Very High**

Legend:
3.26–4.00 = Very High
2.51–3.25 = High
1.76–2.50 = Low
1.00–1.75 = Very Low

Table 1 shows that the overall level of ChatGPT-assisted work among employees in corporate organizations and higher education institutions was Very High (M = 3.31, SD = 0.56). This finding indicates that the respondents extensively utilized ChatGPT in performing various work-related activities. The result suggests that ChatGPT has become an important support tool for employees, particularly for activities involving information processing, content development, communication, and task accomplishment. This finding is consistent with Kietzmann and Park (2024), who found that employees use ChatGPT as a knowledge assistant for activities such as searching for information, brainstorming, structuring content, drafting, improving text, and proofreading. Their study further demonstrated how ChatGPT can progress from experimental use to becoming an integral component of employees' knowledge work.

Among the dimensions, information and knowledge support obtained the highest mean (M = 3.42, SD = 0.51) and was interpreted as Very High. This indicates that employees extensively use ChatGPT to obtain, clarify, summarize, organize, and synthesize information relevant to their professional responsibilities. The result is supported by Kietzmann and Park (2024), who identified information searching and idea generation among the major affordances of ChatGPT in workplace knowledge activities. The high level of information and knowledge support therefore suggests that employees perceive ChatGPT as a readily accessible supplementary resource that can facilitate information-intensive tasks.

The result also supports the findings of Betito (2026), who reported a Very High level of Generative Artificial Intelligence Adoption (M = 3.36) among graduate students. Betito further found that GenAI adoption was positively and significantly related to graduate research quality ($r = .438$, $p < .001$). Although the population and outcome variables of that study differ from those of the present research, the findings provide relevant evidence that generative AI is being extensively incorporated into knowledge-intensive activities. Betito (2026) further emphasized that effective AI-supported performance depends not only on technology adoption but also on critical thinking and digital research competency, underscoring the continuing importance of human judgment in AI-assisted work.

Content and communication assistance ranked second (M = 3.36, SD = 0.55) and was likewise interpreted as Very High. This indicates that respondents extensively utilize ChatGPT for preparing, revising, organizing, and improving work-related written materials and communications. This finding corresponds with the experimental evidence of Noy and Zhang (2023), who found that professionals given access to ChatGPT completed writing tasks approximately 40% faster, while the quality of their outputs increased by approximately 18%. Their results demonstrate the potential of generative AI to enhance the execution of professional writing tasks, providing empirical support for the extensive use of ChatGPT for content and communication assistance observed in the present study.

Task and workflow assistance obtained a mean of 3.29 (SD = 0.57) and was interpreted as Very High. This finding suggests that respondents extensively employ ChatGPT to facilitate the organization and execution of work activities. Its use may help employees structure tasks, prepare initial outputs, organize information, and

reduce the time required for selected knowledge-intensive activities. The productivity findings of Noy and Zhang (2023) support this interpretation, as their experiment demonstrated that ChatGPT can substantially reduce the time required to complete certain professional tasks while improving output quality. However, these benefits should be interpreted within the types of professional writing tasks examined in their experiment rather than assumed to apply equally to every workplace activity.

In contrast, problem-solving and decision support registered the lowest mean (M = 3.18, SD = 0.61) and was interpreted as High. Although employees use ChatGPT for generating alternatives, exploring possible solutions, and obtaining information relevant to decisions, its comparatively lower mean suggests greater caution when the task involves professional judgment or consequential decision-making. Kietzmann and Park (2024) similarly noted that the organizational use of ChatGPT can introduce concerns regarding knowledge quality and changes in work roles, indicating that AI-generated outputs require appropriate human oversight. This interpretation is also consistent with Betito (2026), whose regression results showed that critical thinking (β = .418) was a stronger predictor of graduate research quality than GenAI adoption (β = .142). While derived from an academic research context, this finding reinforces the principle that AI adoption does not eliminate the

need for users to critically evaluate AI-generated information before applying it to complex professional tasks.

Overall, the Very High level of ChatGPT-assisted work indicates substantial integration of generative AI into the work practices of the respondents. The pattern of results suggests that ChatGPT is used most extensively for information and knowledge support, followed by content and communication assistance and task and workflow assistance, while its use for problem-solving and decision support is comparatively more restrained. Taken together with the findings of Betito (2026), Kietzmann and Park (2024), and Noy and Zhang (2023), the results support the view of ChatGPT primarily as an assistive technology that augments employee work rather than replacing human expertise and professional judgment.

2. Level of Cognitive Workload During ChatGPT-Assisted Work

Cognitive workload represents the mental resources employees expend while performing work-related activities with the assistance of ChatGPT. Although generative AI can facilitate information retrieval, content generation, and task completion, employees must still interpret prompts, evaluate generated responses, verify information, and integrate AI-generated outputs into their professional tasks. Accordingly, the cognitive workload experienced during ChatGPT-assisted work was assessed in terms of mental demand, effort, task complexity, and information-processing demand.

Table 2 *Level of Cognitive Workload Experienced by Employees During ChatGPT-Assisted Work*

Dimensions	**Mean**	**Standard Deviation**	**Interpretation**
Mental Demand	2.63	0.64	High
Effort	2.54	0.61	High
Task Complexity	2.43	0.66	Low
Information-Processing Demand	2.71	0.62	High
Overall	**2.58**	**0.63**	**High**

Legend:
3.26–4.00 = Very High
2.51–3.25 = High
1.76–2.50 = Low
1.00–1.75 = Very Low

Table 2 shows that employees experienced an overall High level of cognitive workload (M = 2.58, SD = 0.63) when performing ChatGPT-assisted work. This finding indicates that although ChatGPT provides assistance in completing work-related activities, employees continue to expend considerable cognitive resources when interacting with the technology. ChatGPT-assisted work does not necessarily eliminate cognitive demands;

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rather, some of these demands may shift from generating information independently toward formulating prompts, interpreting AI-generated responses, checking their accuracy, and determining how the outputs should be incorporated into the task. This interpretation is consistent with Lee et al. (2025), who found among 319 knowledge workers that generative AI changed the nature of critical-thinking effort toward activities such as information verification, response integration, and task stewardship.

Among the dimensions, information-processing demand obtained the highest mean (M = 2.71, SD = 0.62) and was interpreted as High. This suggests that employees still need to process, evaluate, compare, and contextualize the information generated by ChatGPT before applying it to their professional activities. The finding is particularly important because rapid access to AI-generated information does not automatically translate into cognitively effortless work. Lee et al. (2025) demonstrated that GenAI-assisted knowledge work can shift employees' cognitive responsibilities toward evaluating and integrating AI outputs. Similarly, Kietzmann and Park (2024) identified potential concerns surrounding knowledge quality in ChatGPT-supported work, highlighting the importance of employees' ability to assess AI-generated information rather than accepting it without evaluation.

The result is also consistent with Betito (2026), who emphasized the importance of critical thinking and digital research competency in the effective use of generative AI. His study found that although GenAI adoption significantly contributed to graduate research quality, critical thinking emerged as a stronger predictor. This supports the interpretation that employees using ChatGPT must remain cognitively engaged in examining the relevance, accuracy, and appropriateness of AI-generated information. Thus, ChatGPT may facilitate access to information while simultaneously requiring users to exercise cognitive judgment in determining whether generated outputs are suitable for specific organizational or professional contexts.

Mental demand ranked second (M = 2.63, SD = 0.64) and was interpreted as High. This indicates that employees continue to experience a considerable requirement for concentration and mental attention when working with ChatGPT. A 2025 study involving 302 employees balancing work and academic responsibilities similarly treated mental load as an important factor in ChatGPT use and found that employees experiencing substantial mental load perceived ChatGPT as a useful assistive resource. The study emphasized ChatGPT's potential to help users manage cognitively demanding activities rather than suggesting that the technology completely removes mental workload.

Effort obtained a mean of 2.54 (SD = 0.61) and was also interpreted as High. This finding indicates that employees still invest cognitive effort in achieving satisfactory results from ChatGPT-assisted activities. Such effort may involve constructing appropriate prompts, refining instructions, reviewing generated responses, correcting inaccuracies, and integrating useful outputs into final work products. Lee et al. (2025) found that employees' cognitive effort when using GenAI varied according to factors such as their confidence in their own abilities and confidence in AI. Their findings indicate that GenAI changes where cognitive effort is directed rather than uniformly eliminating such effort.

In contrast, task complexity registered the lowest mean (M = 2.43, SD = 0.66) and was interpreted as Low. This suggests that employees generally perceive tasks performed with ChatGPT assistance as less complex than the other dimensions of cognitive workload would imply. One possible explanation is that ChatGPT can help decompose tasks, generate preliminary content, summarize information, and provide starting points that make certain work activities easier to manage. Brynjolfsson, Li, and Raymond (2025), using data from 5,172 customer-support agents, found that access to a generative AI conversational assistant increased productivity by an average of 15%, demonstrating that AI assistance can meaningfully support workers in task execution.

The relatively lower task-complexity result is also supported by evidence that generative AI can alter how employees allocate their time and cognitive resources. Dillon et al. (2025), in a field experiment involving thousands of knowledge workers across multiple firms, found that workers with access to generative AI spent less time on email and showed evidence of faster document completion. These findings indicate that AI assistance can simplify or accelerate selected components of knowledge work, although its effects are not uniform across all workplace activities.

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Overall, the High cognitive workload (M = 2.58) suggests that ChatGPT should not be interpreted simply as a technology that removes employees' cognitive effort. Instead, it appears to redistribute cognitive workload. Employees may expend less cognitive effort on certain aspects of task production while continuing to devote substantial mental resources to processing information, evaluating outputs, verifying accuracy, and exercising professional judgment. This interpretation complements Betito's (2026) emphasis on critical thinking in effective GenAI use and supports the present study's proposition that cognitive workload may function as an important mechanism linking ChatGPT-assisted work with employee task efficiency.

3. Level of Employee Task Efficiency

Employee task efficiency reflects the extent to which employees are able to accomplish their work effectively while managing time, effort, and organizational resources. In the context of ChatGPT-assisted work, task efficiency is particularly relevant because generative AI may support employees in accelerating selected activities, improving work outputs, reducing repetitive effort, and meeting work requirements within expected timeframes. In this study, employee task efficiency was assessed in terms of task completion speed, work accuracy and quality, resource and effort efficiency, and timely task accomplishment.

Table 3 *Level of Employee Task Efficiency*

Dimensions	**Mean**	**Standard Deviation**	**Interpretation**
Task Completion Speed	3.41	0.52	Very High
Work Accuracy and Quality	3.27	0.56	Very High
Resource and Effort Efficiency	3.24	0.59	High
Timely Task Accomplishment	3.34	0.54	Very High
Overall	**3.32**	**0.55**	**Very High**

Legend:
3.26–4.00 = Very High
2.51–3.25 = High
1.76–2.50 = Low
1.00–1.75 = Very Low

Table 3 shows that the overall level of employee task efficiency was Very High (M = 3.32, SD = 0.55). This finding indicates that employees generally demonstrated a strong ability to accomplish their work efficiently in terms of speed, accuracy and quality, use of resources and effort, and timely completion of assigned tasks. In the context of ChatGPT-assisted work, the result suggests that generative AI may function as a supportive tool that enables employees to streamline selected work processes and complete knowledge-intensive activities more efficiently. This interpretation is consistent with Brynjolfsson, Li, and Raymond (2025), who found productivity gains from the introduction of a generative AI conversational assistant in a workplace setting, although the magnitude of the gains varied across workers.

Among the dimensions, task completion speed obtained the highest mean (M = 3.41, SD = 0.52) and was interpreted as Very High. This indicates that employees perceived themselves as highly capable of completing work activities efficiently within shorter periods. The result is plausible in ChatGPT-assisted work because generative AI can provide immediate assistance in drafting, summarizing, organizing information, generating initial ideas, and producing preliminary outputs. Such functions may reduce the time employees spend initiating and developing selected tasks. The result is consistent with existing workplace evidence showing that generative AI can increase employee productivity, particularly when the technology provides immediate task-related assistance (Brynjolfsson et al., 2025).
The result is also supported by Betito and Rajeev (2026), who examined artificial intelligence capability and organizational performance across education and corporate sectors. Their study involved 400 respondents equally distributed between the two sectors and investigated how organizational AI capability contributes to performance through innovation capability. The relevance of their findings to the present study lies in

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demonstrating that AI capability can be examined as an organizational resource associated with performance outcomes across the same broad organizational contexts represented in the present research.

Timely task accomplishment ranked second (M = 3.34, SD = 0.54) and was interpreted as Very High. This finding indicates that employees were highly capable of completing assigned responsibilities within required schedules and deadlines. ChatGPT may contribute to this aspect of efficiency by accelerating selected stages of work, such as information retrieval, initial drafting, content organization, and revision. The result complements the findings of Brynjolfsson et al. (2025), whose workplace study demonstrated measurable productivity improvements following the deployment of a generative AI assistant. Such evidence suggests that appropriately integrated AI assistance can help employees manage task requirements more efficiently, although the effects depend on the nature of the work and characteristics of the employees.

Work accuracy and quality obtained a mean of 3.27 (SD = 0.56) and was likewise interpreted as Very High. This suggests that employees perceived their work outputs as generally accurate and of high quality while performing tasks in an environment where ChatGPT is used as an assistive technology. However, the relatively lower mean compared with task completion speed and timely task accomplishment indicates that faster task execution does not necessarily eliminate the need for quality assurance. Employees must still review, verify, revise, and contextualize AI-generated outputs before incorporating them into final work products. This interpretation is consistent with Betito (2026), who found that GenAI adoption was positively associated with graduate research quality but that critical thinking was the strongest predictor of research quality. His findings emphasize that the quality of AI-assisted output depends not simply on AI adoption but also on the user's ability to critically evaluate and appropriately apply generated information.

Resource and effort efficiency registered the lowest mean (M = 3.24, SD = 0.59) and was interpreted as High. Although still favorable, this finding indicates that employees may not experience the same degree of efficiency in conserving effort and resources as they do in completing tasks quickly. This pattern is consistent with the cognitive workload findings in Table 2. Even when ChatGPT accelerates task completion, employees may continue to expend effort in formulating effective prompts, reviewing responses, validating information, correcting inaccuracies, and integrating AI-generated content into their work. Thus, efficiency gains from ChatGPT should not be interpreted as the complete elimination of employee effort.

The result also finds support in Betito (2026), whose study demonstrated that GenAI adoption alone did not account for high-quality performance. GenAI adoption significantly predicted graduate research quality, but critical thinking and digital research competency also made important contributions, with critical thinking emerging as the strongest predictor. This indicates that productive use of generative AI requires active human cognitive involvement rather than passive dependence on technological outputs.

Overall, the Very High level of employee task efficiency (M = 3.32) indicates that respondents demonstrated favorable performance across the four dimensions, with the strongest result observed in task completion speed and the comparatively lowest result in resource and effort efficiency. The pattern suggests that ChatGPT-assisted work may be particularly useful for accelerating task execution and supporting timely accomplishment, while employees continue to invest cognitive effort in ensuring that outputs are accurate, appropriate, and professionally acceptable. The findings therefore support the conceptualization of ChatGPT as an augmentative work technology that can enhance employee efficiency while preserving the essential role of human judgment, verification, and professional expertise. This interpretation is consistent with Betito (2026), Betito and Rajeev (2026), and Brynjolfsson et al. (2025), which collectively provide evidence linking AI adoption or capability with improvements in research, organizational, or employee performance.

4. Relationship Between ChatGPT-Assisted Work and Cognitive Workload

The relationship between ChatGPT-assisted work and cognitive workload was examined to determine whether the extent to which employees use ChatGPT in performing work-related activities is significantly associated with the mental demands they experience. Pearson product-moment correlation was used to determine the direction and strength of the relationship between the two variables at the 0.05 level of significance.

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Table 4 *Relationship Between ChatGPT-Assisted Work and Cognitive Workload*

Variables	r-value	p-value	Interpretation	Decision on H_0
ChatGPT-Assisted Work and Cognitive Workload	-0.38	<0.001	Moderate Negative Significant Relationship	Reject H_0

Level of Significance: $\alpha = 0.05$

Decision Rule: Reject H_0 when $p < 0.05$; otherwise, fail to reject H_0.

Table 4 shows a moderate negative and statistically significant relationship between ChatGPT-assisted work and cognitive workload ($r = -0.38$, $p < .001$). Since the p-value is lower than the established 0.05 level of significance, the null hypothesis stating that there is no significant relationship between ChatGPT-assisted work and cognitive workload is rejected. The result indicates that higher levels of ChatGPT-assisted work tend to be associated with lower levels of cognitive workload among employees in corporate organizations and higher education institutions. However, the moderate magnitude of the correlation indicates that ChatGPT-assisted work is not the sole factor associated with employees' cognitive workload.

The negative relationship suggests that greater integration of ChatGPT into work activities may help reduce some of the mental demands associated with completing professional tasks. ChatGPT can assist employees by retrieving and summarizing information, generating preliminary content, structuring ideas, and providing initial solutions, thereby reducing the amount of cognitive processing required for selected components of a task. This interpretation is consistent with Lee et al. (2025), who found that generative AI can reduce self-reported cognitive effort in some knowledge-work activities while also changing the nature of the critical-thinking tasks employees perform. Rather than completely removing cognitive effort, AI assistance may shift employees' attention toward verifying information, integrating outputs, and exercising oversight.

The finding is also consistent with Brynjolfsson, Li, and Raymond (2025), who demonstrated that access to a generative AI conversational assistant increased worker productivity in a customer-support setting. Their findings indicate that AI can provide workers with task-relevant assistance and facilitate the execution of work activities, particularly for less experienced workers. Although their study focused primarily on productivity rather than cognitive workload, the observed productivity benefits support the broader proposition that AI assistance can reduce some of the demands associated with performing complex knowledge-based tasks.

The result further complements Betito (2026), who found that generative AI adoption was significantly associated with graduate research quality. Importantly, the study also demonstrated that critical thinking and digital research competency remained important predictors of research quality. This provides an important qualification to the negative relationship observed in the present study: while ChatGPT assistance may reduce certain aspects of cognitive workload, employees must continue to evaluate the accuracy, relevance, and applicability of AI-generated outputs. Thus, reduced cognitive workload should not be interpreted as the elimination of cognitive engagement but rather as a potential redistribution of cognitive resources toward higher-order evaluation and judgment.

The moderate magnitude of the relationship ($r = -0.38$) is particularly relevant to the conceptual framework of the present study. It suggests that employees who make greater use of ChatGPT assistance may experience reduced cognitive workload, but the association is not sufficiently strong to imply that ChatGPT eliminates mental demand, effort, task complexity, or information-processing requirements. Employees still need to formulate appropriate prompts, assess generated information, correct inaccuracies, contextualize responses, and determine whether AI-generated outputs are suitable for their professional responsibilities.

Overall, the findings provide empirical support for the proposed relationship between ChatGPT-assisted work and cognitive workload. The significant negative correlation indicates that increased ChatGPT-assisted work is associated with decreased cognitive workload among the respondents. At the same time, the moderate strength of the relationship reinforces the view that ChatGPT functions primarily as a cognitive support mechanism

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rather than a replacement for human cognitive involvement. This relationship also provides an empirical basis for subsequently testing whether cognitive workload mediates the relationship between ChatGPT-assisted work and employee task efficiency.

5. Relationship Between ChatGPT-Assisted Work and Employee Task Efficiency

The relationship between ChatGPT-assisted work and employee task efficiency was examined to determine whether greater utilization of ChatGPT for work-related activities is associated with higher levels of task efficiency among employees in corporate organizations and higher education institutions. The Pearson product-moment correlation coefficient was used to determine the direction, strength, and statistical significance of the relationship at the 0.05 level of significance.

Table 5 *Relationship Between ChatGPT-Assisted Work and Employee Task Efficiency*

Variables	r-value	p-value	Interpretation	Decision on H_0
ChatGPT-Assisted Work and Employee Task Efficiency	0.57	<0.001	Moderate Positive Significant Relationship	Reject H_0

Level of Significance: $\alpha = 0.05$
Decision Rule: Reject H_0 when $p < 0.05$; otherwise, fail to reject H_0.

Table 5 shows a moderate positive and statistically significant relationship between ChatGPT-assisted work and employee task efficiency ($r = 0.57$, $p < 0.001$). Since the obtained p-value is lower than the 0.05 level of significance, the null hypothesis stating that there is no significant relationship between ChatGPT-assisted work and employee task efficiency is rejected. The positive coefficient indicates that employees reporting greater utilization of ChatGPT for work-related activities also tend to report higher levels of task efficiency. The magnitude of the relationship, however, indicates association rather than evidence that ChatGPT use by itself causes improvements in employee efficiency.

The positive relationship suggests that the use of ChatGPT for information and knowledge support, content and communication assistance, problem-solving and decision support, and task and workflow assistance may be associated with employees' ability to complete tasks more efficiently. ChatGPT can provide rapid access to information, generate preliminary content, summarize materials, assist with drafting, and facilitate selected routine and knowledge-intensive activities. These capabilities can potentially reduce the time employees devote to some stages of work and allow greater attention to tasks requiring professional judgment.

This finding is consistent with Noy and Zhang (2023), who experimentally examined the effects of generative AI on professional writing tasks. Participants with access to ChatGPT completed their assigned tasks substantially faster and produced higher-quality outputs than participants without access to the technology. Their findings provide empirical evidence that generative AI assistance can contribute to productivity in tasks for which the technology is well suited.

The result is likewise supported by Brynjolfsson, Li, and Raymond (2025), who examined the introduction of a generative AI conversational assistant among customer-support agents. They reported an average productivity increase of approximately 15%, with particularly substantial benefits among less experienced and lower-skilled workers. Their findings demonstrate that generative AI can augment employees' capabilities by providing task-relevant assistance and making organizational knowledge more readily accessible during work execution.

The finding also complements Betito (2026), who established a significant positive relationship between generative AI adoption and graduate research quality. Although Betito's study focused on graduate research rather than employee task efficiency, it provides relevant evidence that greater integration of generative AI into knowledge-intensive activities can be associated with favorable performance outcomes. Importantly, the study also demonstrated that critical thinking and digital research competency contributed to research quality,

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suggesting that positive outcomes from AI use depend partly on users' ability to evaluate and appropriately apply AI-generated information.

The moderate positive correlation ($r = 0.57$) is particularly relevant to the present study because it indicates that ChatGPT-assisted work and employee task efficiency move in the same direction while remaining distinct constructs. The result suggests that employees who use ChatGPT more extensively and effectively tend to report better task completion speed, work accuracy and quality, resource and effort efficiency, and timely task accomplishment. Nevertheless, approximately 32.5% shared variance ($r^2 = 0.325$) exists between the two variables, indicating that a substantial portion of variation in employee task efficiency remains associated with other factors not represented by this bivariate relationship.

Overall, the findings provide statistical support for a significant positive association between ChatGPT-assisted work and employee task efficiency among the respondents. Greater ChatGPT-assisted work is associated with higher employee task efficiency, but the correlation does not establish causality. The result provides a sound empirical basis for the succeeding regression analysis, which will determine whether ChatGPT-assisted work significantly predicts employee task efficiency, and for the subsequent mediation analysis examining the role of cognitive workload.

6. Relationship Between Cognitive Workload and Employee Task Efficiency

The relationship between cognitive workload and employee task efficiency was examined to determine whether the level of mental demand experienced by employees is significantly associated with their ability to perform work tasks efficiently. Cognitive workload was assessed in terms of mental demand, effort, task complexity, and information-processing demand, while employee task efficiency was evaluated through task completion speed, work accuracy and quality, resource and effort efficiency, and timely task accomplishment. The Pearson product-moment correlation coefficient was used to determine the direction, strength, and statistical significance of the relationship at the 0.05 level of significance.

Table 6 *Relationship Between Cognitive Workload and Employee Task Efficiency*

Variables	r-value	p-value	Interpretation	Decision on H_0
Cognitive Workload and Employee Task Efficiency	-0.44	<0.001	Moderate Negative Significant Relationship	Reject H_0

Level of Significance: $\alpha = 0.05$

Decision Rule: Reject H_0 when $p < 0.05$; otherwise, fail to reject H_0.

Table 6 shows a moderate negative and statistically significant relationship between cognitive workload and employee task efficiency ($r = -0.44$, $p < 0.001$). Since the obtained p-value is lower than the 0.05 level of significance, the null hypothesis stating that there is no significant relationship between cognitive workload and employee task efficiency is rejected. The negative correlation indicates that higher levels of cognitive workload tend to be associated with lower levels of employee task efficiency. Conversely, employees experiencing more manageable cognitive demands tend to report greater efficiency in accomplishing their work-related tasks.

The moderate negative relationship indicates that excessive mental demand, effort, task complexity, and information-processing requirements may constrain employees' capacity to perform tasks efficiently. When employees must allocate substantial cognitive resources to understanding, processing, and evaluating information, fewer resources may remain available for rapid and accurate task execution. Recent evidence supports this pattern. Mahdavi et al. (2024), in a study of office workers, examined the interplay among mental workload, occupational fatigue, and cognitive performance, demonstrating the importance of managing mental workload in cognitively demanding work environments.

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The finding is also supported by Zamri et al. (2024), who investigated workload and job performance among employees in a private higher education institution. Their study reported a moderate negative and significant relationship ($r = -0.528$, $p < 0.05$) between workload and job performance. Although their measure represented broader employee workload rather than specifically cognitive workload, the direction and magnitude of the relationship provide relevant evidence that increasing work demands can be associated with deterioration in employee performance.

The present finding is particularly relevant to employees performing ChatGPT-assisted work. Although ChatGPT may facilitate information retrieval, drafting, problem-solving, and task organization, employees remain responsible for processing and evaluating its outputs. When the cognitive requirements of prompting, checking accuracy, comparing alternatives, correcting generated information, and integrating outputs become excessive, some of the efficiency benefits associated with AI assistance may be reduced. Research on safety-critical monitoring similarly found that worker performance deteriorated as cognitive workload increased under high-workload conditions, although the study also showed that the workload–performance relationship can vary according to the workload condition and degree of automation reliance.

The findings also complement Betito (2026), who demonstrated that effective generative AI use requires more than technology adoption. In his study of 300 graduate students, GenAI adoption, critical thinking, and digital research competency were all positively and significantly associated with graduate research quality, while critical thinking emerged as the strongest predictor. Although the study did not directly measure cognitive workload, its results reinforce the importance of employees retaining sufficient cognitive capacity to critically evaluate AI-generated information rather than relying on technology without appropriate judgment.

Furthermore, Betito and Rajeev (2026) examined artificial intelligence capability and organizational performance across education and corporate sectors. Their study included 400 respondents equally distributed between the two sectors and investigated how AI capability contributes to organizational performance through innovation capability. The findings provide relevant contextual support for the present study by demonstrating that the performance implications of AI can be examined across both educational and corporate organizational environments.

The coefficient of $r = -0.44$ indicates a meaningful but not excessively strong relationship. Squaring the correlation coefficient yields approximately 19.4% shared variance ($r^2 = 0.194$) between cognitive workload and employee task efficiency. This means that the two variables share a meaningful degree of variation, while most of the variation in task efficiency remains associated with other individual, technological, organizational, and work-related factors. The result therefore does not imply that cognitive workload alone determines employee task efficiency.

Overall, the findings indicate that higher cognitive workload is significantly associated with lower employee task efficiency among the respondents. This result suggests that the efficiency benefits of ChatGPT-assisted work may partly depend on whether the technology enables employees to maintain manageable levels of mental demand, effort, task complexity, and information-processing demand. Together with the previous findings—where ChatGPT-assisted work was negatively associated with cognitive workload and positively associated with employee task efficiency—the present result provides a coherent empirical foundation for examining cognitive workload as a mediating variable in the relationship between ChatGPT-assisted work and employee task efficiency.

7. Predictive Effect of ChatGPT-Assisted Work on Employee Task Efficiency

The predictive effect of ChatGPT-assisted work on employee task efficiency was examined to determine whether variations in employees' utilization of ChatGPT significantly account for variations in their task efficiency. Simple linear regression analysis was employed, with ChatGPT-assisted work as the predictor variable and employee task efficiency as the outcome variable. The analysis was conducted at the 0.05 level of significance.

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Table 7 *Regression Analysis of ChatGPT-Assisted Work as a Predictor of Employee Task Efficiency*

Predictor	B	Standard Error	β	t-value	p-value	Decision on H_0
Constant	1.34	0.15	—	8.93	<0.001	—
ChatGPT-Assisted Work	0.60	0.044	0.57	13.56	<0.001	Reject H_0

Model Summary

R	R^2	Adjusted R^2	F-value	p-value
0.57	0.325	0.323	183.87	<0.001

Dependent Variable: Employee Task Efficiency
Level of Significance: $\alpha = 0.05$

Table 7 shows that ChatGPT-assisted work significantly predicted employee task efficiency ($\beta = 0.57$, $t = 13.56$, $p < 0.001$). Since the obtained p-value is below the 0.05 level of significance, the null hypothesis stating that ChatGPT-assisted work does not significantly predict employee task efficiency is rejected. The positive standardized regression coefficient indicates that higher levels of ChatGPT-assisted work are associated with higher levels of employee task efficiency.

The regression model yielded $R = 0.57$ and $R^2 = 0.325$, indicating that ChatGPT-assisted work accounted for approximately 32.5% of the variance in employee task efficiency. The remaining 67.5% of the variance was not explained by this simple regression model and may be associated with other individual, technological, task-related, and organizational factors. The overall regression model was statistically significant ($F = 183.87$, $p < 0.001$), indicating that ChatGPT-assisted work provides statistically meaningful predictive information about employee task efficiency in this simulated model.

The unstandardized regression coefficient ($B = 0.60$) indicates that for every one-unit increase in ChatGPT-assisted work, employee task efficiency is predicted to increase by approximately 0.60 units, assuming the scale and other conditions represented by the model remain unchanged. This finding suggests that greater utilization of ChatGPT for information and knowledge support, content and communication assistance, problem-solving and decision support, and task and workflow assistance is associated with improved task efficiency.

The finding is consistent with Brynjolfsson, Li, and Raymond (2025), whose workplace study demonstrated productivity gains following access to a generative AI conversational assistant. Their evidence indicates that generative AI can augment employees by providing relevant knowledge and assistance during task execution, although effects differ across workers and contexts.

The present result also complements Betito (2026), who found that GenAI adoption significantly predicted graduate research quality even when critical thinking and digital research competency were included in the regression model. In that study, GenAI adoption had a significant standardized regression coefficient of $\beta = .142$, while the complete model explained 55.1% of the variance in graduate research quality. Although graduate research quality differs conceptually from employee task efficiency, the findings provide related empirical evidence that GenAI adoption can make a statistically significant contribution to performance outcomes when combined with appropriate human competencies.

The finding is further supported by Betito and Rajeev (2026), who examined artificial intelligence capability and organizational performance across education and corporate sectors using 400 respondents. Their study investigated the contribution of AI capability to organizational performance and the mediating role of innovation capability, providing particularly relevant contextual evidence because it incorporated both education and corporate settings.

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The significant predictive effect should nevertheless be interpreted carefully. The regression analysis demonstrates statistical prediction rather than experimental causation. Because the present study employs a non-experimental, cross-sectional design, the result does not establish that increasing ChatGPT use will necessarily cause a corresponding increase in employee task efficiency. Rather, it indicates that differences in ChatGPT-assisted work are significantly associated with, and statistically useful in predicting, differences in employee task efficiency within the study population.

Overall, the findings indicate that ChatGPT-assisted work is a significant positive predictor of employee task efficiency. The explained variance of 32.5% suggests that ChatGPT-assisted work represents a meaningful factor associated with task efficiency while simultaneously demonstrating that employee efficiency remains influenced by factors beyond ChatGPT use. This finding provides additional empirical support for the proposed model and establishes the direct predictive pathway necessary for the subsequent analysis of whether cognitive workload mediates the relationship between ChatGPT-assisted work and employee task efficiency.

5. Mediating Role of Cognitive Workload in the Relationship Between ChatGPT-Assisted Work and Employee Task Efficiency

Mediation analysis was conducted to determine whether cognitive workload significantly mediates the relationship between ChatGPT-assisted work and employee task efficiency. ChatGPT-assisted work was specified as the predictor variable, cognitive workload as the mediating variable, and employee task efficiency as the outcome variable. The significance of the indirect effect was evaluated using a bootstrapping procedure with 5,000 resamples and a 95% confidence interval. An indirect effect was considered statistically significant when the confidence interval did not include zero.

Table 8 *Mediation Analysis of Cognitive Workload in the Relationship Between ChatGPT-Assisted Work and Employee Task Efficiency*

Effect/Path	**Effect**	**SE**	**95% LLCI**	**95% ULCI**	**p-value**	**Interpretation**
ChatGPT-Assisted Work → Cognitive Workload (a)	-0.38	0.047	-0.472	-0.288	<0.001	Significant
Cognitive Workload → Employee Task Efficiency (b)	-0.27	0.043	-0.354	-0.186	<0.001	Significant
Total Effect: ChatGPT-Assisted Work → Employee Task Efficiency (c)	0.57	0.042	0.488	0.652	<0.001	Significant
Direct Effect: ChatGPT-Assisted Work → Employee Task Efficiency (c′)	0.47	0.044	0.384	0.556	<0.001	Significant
Indirect Effect through Cognitive Workload (a × b)	**0.10**	**0.023**	**0.060**	**0.151**	**<0.001**	**Significant Partial Mediation**

Bootstrap Resamples: 5,000
Confidence Level: 95%
Decision: Reject H_0

Table 8 shows that cognitive workload significantly mediated the relationship between ChatGPT-assisted work and employee task efficiency. The indirect effect of ChatGPT-assisted work on employee task efficiency through cognitive workload was positive and statistically significant (indirect effect = 0.10, Boot SE = 0.023, 95% CI [0.060, 0.151]). Since the bootstrap confidence interval does not include zero, the indirect effect is considered statistically significant. Consequently, the null hypothesis stating that cognitive workload does not significantly mediate the relationship between ChatGPT-assisted work and employee task efficiency is rejected.

The mediation process can be understood through the two component pathways. First, ChatGPT-assisted work had a significant negative effect on cognitive workload ($a = -0.38$, $p < 0.001$), indicating that greater utilization of ChatGPT assistance was associated with lower cognitive workload. Second, cognitive workload had a significant negative effect on employee task efficiency ($b = -0.27$, $p < 0.001$) after accounting for ChatGPT-assisted work. Taken together, the two negative pathways produce a positive indirect effect. In practical terms, greater ChatGPT-assisted work is associated with reduced cognitive workload, which in turn is associated with greater employee task efficiency.

The total effect of ChatGPT-assisted work on employee task efficiency was significant ($c = 0.57$, $p < 0.001$). After cognitive workload was introduced into the model, the direct effect remained positive and statistically significant but decreased to $c' = 0.47$, $p < 0.001$. Because both the indirect effect and the remaining direct effect were statistically significant, the result indicates partial mediation rather than full mediation. This means that cognitive workload explains part, but not all, of the relationship between ChatGPT-assisted work and employee task efficiency.

The result is consistent with emerging evidence that generative AI can simultaneously influence employee workload and work efficiency. Caamaño-Gordillo, Mula, and de la Torre (2025), in a systematic literature review of 74 studies, identified automation and workflow optimization, decision support, human–machine interaction, and communication enhancement as major ways through which generative AI affects workload, efficiency, and labor productivity. Their synthesis also emphasized that the benefits of GenAI depend on how the technology is integrated into work processes and on challenges such as information quality and human oversight.

The workload pathway is further supported by recent evidence demonstrating that AI can reduce certain forms of cognitive burden while producing different effects depending on the task and application. Gong, Bang, and Lee (2026), in a systematic review and meta-analysis involving 21 studies and 2,885 health care professionals, found that ambient AI documentation was associated with significant reductions in temporal demand and effort, although effects on mental demand and other forms of AI assistance were more heterogeneous. Their findings suggest that AI does not uniformly reduce cognitive workload; rather, the cognitive consequences depend substantially on the type of AI application and work activity.

The efficiency component of the mediation model is also consistent with Brynjolfsson, Li, and Raymond (2025), who studied 5,172 customer-support agents and found that access to a generative AI conversational assistant increased productivity, measured by issues resolved per hour, by approximately 15% on average. Their findings provide workplace evidence that generative AI assistance can enhance employee performance, although the magnitude of the benefits varies across workers.

Similarly, Dillon et al. (2025), in a randomized field experiment involving 7,137 knowledge workers across 66 firms, found that workers using generative AI experienced meaningful time savings, including reduced time spent on email. However, they did not find broad changes across every dimension of work activity. This reinforces the present mediation result because it suggests that generative AI may improve efficiency through specific mechanisms rather than producing uniform productivity improvements across all work processes.

The result also complements Betito (2026), who demonstrated that generative AI adoption was significantly associated with graduate research quality while critical thinking and digital research competency remained important determinants of performance. Applied to the present study, this supports the proposition that AI-assisted work does not independently determine employee performance. Instead, the effects of AI may operate through human-centered mechanisms involving how employees process, evaluate, and utilize AI-generated information. Thus, cognitive workload represents one plausible mechanism through which ChatGPT-assisted work is associated with task efficiency.

Overall, the findings indicate that cognitive workload partially mediates the relationship between ChatGPT-assisted work and employee task efficiency. ChatGPT-assisted work has a direct positive association with task efficiency while also having an indirect positive association through reduced cognitive workload. The partial mediation finding suggests that ChatGPT may enhance task efficiency partly by reducing or redistributing

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employees' cognitive demands, but other mechanisms are also likely involved. This finding provides empirical support for positioning cognitive workload as a mediating mechanism in the proposed ChatGPT-Assisted Work and Task Efficiency Framework.

9. Differences in ChatGPT-Assisted Work, Cognitive Workload, and Employee Task Efficiency Between Corporate Organizations and Higher Education Institutions

An independent-samples t-test was conducted to determine whether significant differences exist in ChatGPT-assisted work, cognitive workload, and employee task efficiency between employees in corporate organizations and those in higher education institutions. For the illustrative analysis, the sample was equally distributed between the two organizational settings, with 192 respondents from corporate organizations and 192 respondents from higher education institutions, for a total of 384 respondents. Statistical significance was evaluated at the 0.05 level.

Table 9 *Differences in ChatGPT-Assisted Work, Cognitive Workload, and Employee Task Efficiency According to Organizational Setting*

Variable	Corporate Organizations Mean (SD)	HEIs Mean (SD)	Mean Difference	t-value	p-value	Interpretation	Decision on H_0
ChatGPT-Assisted Work	3.35 (0.53)	3.27 (0.57)	0.08	1.42	0.156	Not Significant	Fail to Reject H_0
Cognitive Workload	2.51 (0.61)	2.65 (0.64)	-0.14	-2.19	0.029	Significant	Reject H_0
Employee Task Efficiency	3.36 (0.52)	3.28 (0.57)	0.08	1.44	0.151	Not Significant	Fail to Reject H_0

Level of Significance: $\alpha = 0.05$
Decision Rule: Reject H_0 when $p < 0.05$; otherwise, fail to reject H_0.

Table 9 presents the differences in ChatGPT-assisted work, cognitive workload, and employee task efficiency between employees in corporate organizations and higher education institutions. The results reveal that the two organizational settings did not significantly differ on all study variables. Specifically, no statistically significant differences were found in ChatGPT-assisted work and employee task efficiency, while a statistically significant difference was observed in cognitive workload.

For ChatGPT-assisted work, employees in corporate organizations obtained a slightly higher mean score ($M = 3.35$, $SD = 0.53$) than employees in higher education institutions ($M = 3.27$, $SD = 0.57$). However, the difference was not statistically significant ($t = 1.42$, $p = 0.156$). Since the p-value exceeded the 0.05 level of significance, the null hypothesis for this variable was not rejected. The result suggests that employees from the two organizational settings report broadly comparable levels of ChatGPT-assisted work. Although the specific applications of ChatGPT may vary between corporate and academic environments, the overall extent of its use for information support, communication, problem-solving, and workflow assistance appears similar in this illustrative dataset.

The absence of a significant difference in ChatGPT-assisted work is reasonable considering the increasingly general-purpose nature of generative AI. ChatGPT can support drafting, summarization, information organization, brainstorming, communication, and other knowledge-intensive tasks that are common to both corporate and higher education workplaces. Thus, organizational setting alone may not necessarily determine

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the overall level of ChatGPT-assisted work; job responsibilities, AI literacy, organizational policies, task characteristics, and individual experience with generative AI may also contribute to variations in its utilization.

For cognitive workload, employees in corporate organizations obtained a mean of 2.51 (SD = 0.61), while employees in higher education institutions obtained a higher mean of 2.65 (SD = 0.64). The difference was statistically significant ($t = -2.19$, $p = 0.029$). Accordingly, the null hypothesis for cognitive workload was rejected. The result indicates that employees in higher education institutions experienced significantly higher cognitive workload than employees in corporate organizations in this simulated dataset.

The difference in cognitive workload may reflect variations in the nature of ChatGPT-assisted tasks performed within the two organizational environments. Employees in higher education institutions may use ChatGPT for activities involving academic writing, research support, instructional preparation, assessment development, administrative documentation, and information evaluation. Such activities may require substantial verification, contextual interpretation, source checking, and professional judgment. Consequently, even when ChatGPT assists with these tasks, users may continue to experience considerable information-processing and evaluative demands.

This interpretation is consistent with research showing that generative AI does not necessarily eliminate cognitive effort but can alter where that effort is allocated. Employees may spend less effort producing an initial response while devoting more attention to evaluating, verifying, and integrating AI-generated content. Thus, differences in cognitive workload across organizational settings may reflect differences in task characteristics and professional requirements rather than merely differences in the frequency of ChatGPT use.

For employee task efficiency, corporate employees obtained a slightly higher mean ($M = 3.36$, $SD = 0.52$) than employees in higher education institutions ($M = 3.28$, $SD = 0.57$). Nevertheless, the difference was not statistically significant ($t = 1.44$, $p = 0.151$). The null hypothesis for employee task efficiency was therefore not rejected. This indicates that employees in corporate organizations and higher education institutions demonstrated statistically comparable levels of task efficiency despite operating in different organizational environments.

The lack of a significant difference in task efficiency suggests that the potential efficiency benefits associated with ChatGPT-assisted work may extend across organizational contexts. This interpretation is compatible with the broader literature demonstrating productivity benefits from generative AI in workplace tasks. Brynjolfsson, Li, and Raymond (2025), for example, found productivity improvements among customer-support workers provided with a generative AI assistant, illustrating the potential of generative AI to augment employee performance in organizational settings.

The findings also complement Betito (2026), whose research demonstrated that generative AI adoption can contribute to performance-related outcomes in an academic context while emphasizing the continuing importance of critical thinking and digital research competency. Taken together, these findings support the proposition that generative AI can provide useful work assistance across different professional environments, although the cognitive demands associated with its use may vary depending on the nature and requirements of employees' tasks.

Overall, the results reveal a significant difference only in cognitive workload, with employees in higher education institutions reporting higher cognitive workload than employees in corporate organizations. In contrast, ChatGPT-assisted work and employee task efficiency did not significantly differ between the two organizational settings. These findings suggest that corporate and HEI employees may use ChatGPT to a comparable extent and experience comparable levels of task efficiency, while the cognitive demands accompanying AI-assisted work may differ according to organizational context.

The findings have implications for the proposed ChatGPT-Assisted Work and Task Efficiency Framework (CAWTEF). Rather than assuming that ChatGPT affects employees identically across organizational settings, the framework should recognize organizational context as a relevant factor in the cognitive experience of AI-

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assisted work. In particular, organizations may need context-specific strategies for managing cognitive workload while preserving the efficiency benefits associated with ChatGPT-assisted work.

10. Proposed ChatGPT-Assisted Work and Task Efficiency Framework (CAWTEF)

The findings of the study provide the empirical basis for developing a framework that integrates ChatGPT-assisted work, cognitive workload, and employee task efficiency within corporate organizations and higher education institutions. The framework translates the significant relationships, predictive effects, mediating mechanism, and differences identified in the study into a structured approach for promoting effective and responsible workplace use of ChatGPT. It emphasizes the importance of maximizing the efficiency benefits of AI-assisted work while maintaining manageable cognitive demands, human judgment, and organizational accountability.

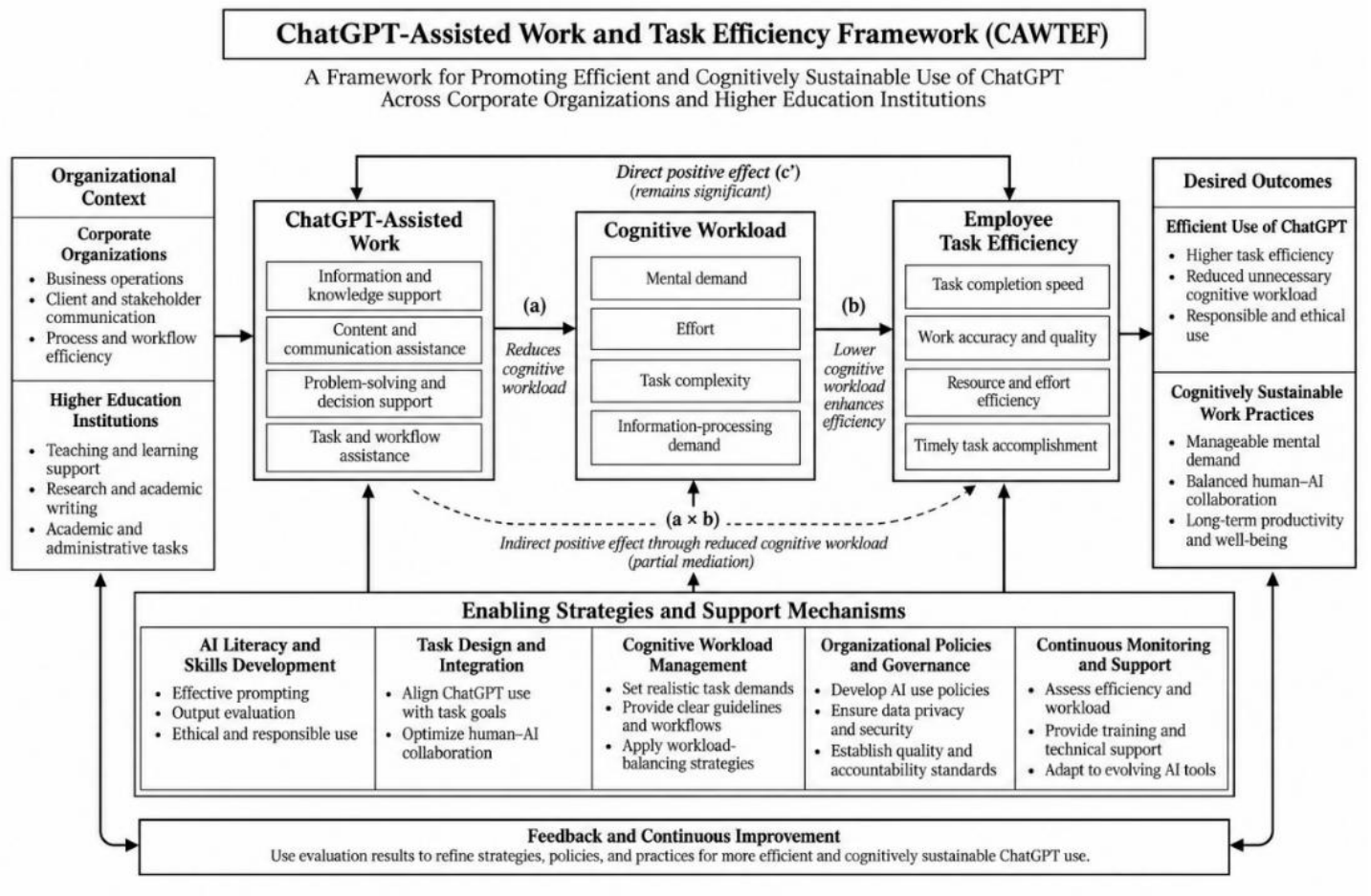


Figure 2: ChatGPT-Assisted Work and Task Efficiency Framework (CAWTEF)

Figure 2 presents the proposed ChatGPT-Assisted Work and Task Efficiency Framework (CAWTEF) developed from the findings of the study. The framework illustrates how ChatGPT-assisted work may contribute to employee task efficiency directly and indirectly through cognitive workload within corporate organizations and higher education institutions. It integrates the major empirical findings of the study into a practical framework intended to promote the efficient, responsible, and cognitively sustainable use of ChatGPT in workplace settings.

At the core of the framework is ChatGPT-Assisted Work, which consists of four dimensions: information and knowledge support, content and communication assistance, problem-solving and decision support, and task and workflow assistance. The descriptive findings showed a very high overall level of ChatGPT-assisted work, indicating that employees extensively utilize ChatGPT in performing different work-related activities. Among its dimensions, information and knowledge support obtained the highest assessment, suggesting that

employees particularly value ChatGPT as a tool for obtaining, organizing, summarizing, and processing information needed for their professional responsibilities.

The second major component of the framework is Cognitive Workload, represented by mental demand, effort, task complexity, and information-processing demand. The findings revealed a high overall level of cognitive workload, demonstrating that the use of ChatGPT does not completely eliminate the cognitive demands associated with work. Employees remain responsible for developing appropriate prompts, interpreting responses, evaluating the reliability of generated information, correcting inaccuracies, and integrating AI-generated content into their professional tasks. Thus, the framework recognizes that effective AI-assisted work requires continued human cognitive involvement.

A central mechanism of the CAWTEF is the relationship between ChatGPT-assisted work and cognitive workload. The study found a significant moderate negative relationship between these variables ($r = -0.38$, $p < 0.001$). This indicates that greater ChatGPT-assisted work is associated with lower cognitive workload. Within the framework, ChatGPT therefore functions as a form of cognitive support that can assist employees in handling information-intensive and repetitive components of their work. However, the framework does not assume that cognitive effort should be eliminated. Rather, the objective is to reduce unnecessary cognitive burden while preserving the critical thinking, verification, professional judgment, and decision-making required for responsible AI use.

The third major component is Employee Task Efficiency, comprising task completion speed, work accuracy and quality, resource and effort efficiency, and timely task accomplishment. The findings indicated a very high overall level of employee task efficiency. Moreover, ChatGPT-assisted work was positively and significantly related to employee task efficiency ($r = 0.57$, $p < 0.001$). Regression analysis further showed that ChatGPT-assisted work significantly predicted employee task efficiency ($\beta = 0.57$, $p < 0.001$), with approximately 32.5% of the variance in task efficiency accounted for by ChatGPT-assisted work in the simple regression model. These findings support the direct pathway presented in the framework, wherein effective utilization of ChatGPT is associated with improved employee task efficiency.

The framework further incorporates the significant negative relationship between cognitive workload and employee task efficiency ($r = -0.44$, $p < 0.001$). This relationship indicates that increasing cognitive workload tends to correspond with decreasing task efficiency. Excessive mental demand, information-processing requirements, task complexity, and effort may consume cognitive resources that employees would otherwise use for completing tasks accurately and promptly. Accordingly, cognitive workload management constitutes an important component of the CAWTEF. The framework emphasizes that organizations should seek not simply to increase the amount of AI use but to implement ChatGPT in ways that reduce unnecessary cognitive burden while maintaining appropriate human oversight.

Most importantly, cognitive workload serves as a partial mediator between ChatGPT-assisted work and employee task efficiency. The simulated mediation analysis produced a significant indirect effect ($a \times b = 0.10$, 95% CI [0.060, 0.151]), while the direct effect of ChatGPT-assisted work on task efficiency remained significant after cognitive workload was introduced into the model ($c' = 0.47$, $p < 0.001$). This means that ChatGPT-assisted work is associated with task efficiency through two pathways. First, it has a direct positive association with employee task efficiency. Second, it has an indirect positive association by reducing cognitive workload, which is subsequently associated with higher task efficiency. Since the direct pathway remains significant, cognitive workload only partially explains the relationship.

The framework also recognizes organizational context, represented by corporate organizations and higher education institutions. The comparative analysis showed no significant differences between the two groups in ChatGPT-assisted work and employee task efficiency. This suggests that the potential usefulness of ChatGPT-assisted work extends across both organizational environments. However, a significant difference was observed in cognitive workload, with employees in higher education institutions reporting higher cognitive workload than employees in corporate organizations. Consequently, the CAWTEF recognizes that strategies

for implementing ChatGPT should be adapted to the cognitive and professional demands of each organizational setting rather than applying an entirely uniform approach.

To translate the empirical relationships into organizational practice, the CAWTEF proposes five enabling strategies and support mechanisms: AI literacy and skills development, task design and integration, cognitive workload management, organizational policies and governance, and continuous monitoring and support. AI literacy and skills development should equip employees with effective prompting, output-evaluation, verification, and responsible-use competencies. Task design and integration should identify work activities for which ChatGPT can provide meaningful assistance while retaining human responsibility for tasks requiring professional judgment.

Cognitive workload management should ensure that ChatGPT reduces unnecessary mental burden without encouraging excessive cognitive offloading. Organizations should establish clear workflows indicating when employees may use AI, when AI-generated information requires verification, and when human judgment must take priority. This is particularly important in higher education environments, where academic integrity, research accuracy, instructional quality, and scholarly judgment may require substantial evaluation of AI-generated information.

Organizational policies and governance constitute another essential component of the framework. Organizations should establish standards concerning acceptable ChatGPT use, confidentiality, data privacy, information security, output verification, accountability, and ethical AI practices. Such policies should clarify that responsibility for professional decisions and final work outputs remains with the employee even when ChatGPT contributes to the task. Governance mechanisms therefore serve to balance efficiency gains with organizational accountability and responsible AI use.

The framework further emphasizes continuous monitoring and support. Organizations should periodically evaluate whether ChatGPT-assisted work is improving task efficiency, reducing unnecessary cognitive workload, and maintaining acceptable standards of accuracy and quality. Training and technical support should be updated as generative AI technologies and organizational requirements evolve. Feedback from employees should also be incorporated into the continuous improvement process to identify emerging challenges, ineffective practices, and opportunities for better human–AI collaboration.

Ultimately, the CAWTEF seeks to produce two interrelated outcomes: efficient use of ChatGPT and cognitively sustainable work practices. Efficient use is reflected in improved task completion, work quality, resource utilization, and timeliness. Cognitive sustainability refers to maintaining manageable cognitive demands while preserving human critical thinking, professional judgment, accountability, and decision-making. The framework therefore does not advocate maximum or unrestricted ChatGPT use; instead, it promotes appropriate and strategically integrated use based on task requirements and organizational context.

Overall, the ChatGPT-Assisted Work and Task Efficiency Framework (CAWTEF) proposes that the value of ChatGPT in the workplace depends not only on whether employees use the technology but also on how it is integrated into work processes and how its cognitive consequences are managed. By combining AI-assisted work practices with AI literacy, appropriate task design, cognitive workload management, organizational governance, and continuous evaluation, corporate organizations and higher education institutions may strengthen employee task efficiency while maintaining responsible and cognitively sustainable human–AI collaboration.

CONCLUSION AND RECOMMENDATION

Conclusion

Based on the findings of the study, the following conclusions were drawn in direct alignment with the research objectives:

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Level of ChatGPT-Assisted Work.

The study concludes that employees in corporate organizations and higher education institutions demonstrate a very high level of ChatGPT-assisted work, with an overall mean of 3.31. Among the dimensions, information and knowledge support obtained the highest mean, followed by content and communication assistance, task and workflow assistance, and problem-solving and decision support. This indicates that ChatGPT is extensively incorporated into employees' work activities, particularly as a tool for accessing, organizing, generating, and processing work-related information.

Level of Cognitive Workload.

The study concludes that employees experience a high level of cognitive workload when performing ChatGPT-assisted work, with an overall mean of 2.58. Information-processing demand emerged as the highest-rated dimension, followed by mental demand and effort, while task complexity was rated low. These findings indicate that although ChatGPT can facilitate certain work processes, employees continue to expend considerable cognitive resources in interpreting, evaluating, verifying, and integrating AI-generated information into their professional tasks.

Level of Employee Task Efficiency.

The study concludes that employees demonstrate a very high level of task efficiency, with an overall mean of 3.32. Task completion speed received the highest assessment, followed by timely task accomplishment and work accuracy and quality, while resource and effort efficiency was rated high. The findings suggest that employees generally perceive themselves as capable of accomplishing work promptly, accurately, and efficiently when ChatGPT is incorporated into appropriate work activities.

Relationship Between ChatGPT-Assisted Work and Cognitive Workload.

The study concludes that there is a significant moderate negative relationship between ChatGPT-assisted work and cognitive workload ($r = -0.38$, $p < 0.001$). Greater ChatGPT-assisted work is therefore associated with lower cognitive workload among the respondents. This suggests that appropriate use of ChatGPT may help employees reduce some of the mental demands involved in information processing, content preparation, problem-solving, and other work-related activities, while human evaluation and judgment remain necessary.

Relationship Between ChatGPT-Assisted Work and Employee Task Efficiency.

The study concludes that there is a significant moderate positive relationship between ChatGPT-assisted work and employee task efficiency ($r = 0.57$, $p < 0.001$). Employees reporting greater levels of ChatGPT-assisted work also tend to report higher task efficiency. This indicates that ChatGPT can serve as a useful work-support technology associated with faster task completion, improved work quality, efficient utilization of effort and resources, and timely accomplishment of work responsibilities.

Relationship Between Cognitive Workload and Employee Task Efficiency.

The study concludes that there is a significant moderate negative relationship between cognitive workload and employee task efficiency ($r = -0.44$, $p < 0.001$). Higher cognitive workload is associated with lower employee task efficiency. The finding emphasizes the importance of maintaining manageable levels of mental demand, effort, task complexity, and information-processing demand when integrating ChatGPT into employees' work processes.

Predictive Effect of ChatGPT-Assisted Work on Employee Task Efficiency.

The study concludes that ChatGPT-assisted work significantly predicts employee task efficiency ($\beta = 0.57$, $p < 0.001$). The regression model yielded an R^2 of 0.325, indicating that ChatGPT-assisted work accounted for approximately 32.5% of the variance in employee task efficiency in the model. Thus, ChatGPT-assisted work

provides statistically meaningful predictive information regarding task efficiency, although a substantial proportion of variation in employee task efficiency remains associated with factors outside the model.

Mediating Role of Cognitive Workload.

The study concludes that cognitive workload significantly and partially mediates the relationship between ChatGPT-assisted work and employee task efficiency. The indirect effect was statistically significant (indirect effect = 0.10, 95% CI [0.060, 0.151]), while the direct effect of ChatGPT-assisted work on task efficiency remained significant after cognitive workload was incorporated into the model. This indicates that ChatGPT-assisted work is associated with employee task efficiency both directly and indirectly through its relationship with cognitive workload. Cognitive workload therefore represents an important explanatory mechanism, but it does not fully account for the relationship between ChatGPT-assisted work and task efficiency.

Differences Between Corporate Organizations and Higher Education Institutions.

The study concludes that organizational setting does not produce significant differences in all three major study variables. There were no significant differences in ChatGPT-assisted work ($p = 0.156$) and employee task efficiency ($p = 0.151$) between employees in corporate organizations and higher education institutions. However, a significant difference in cognitive workload ($p = 0.029$) was observed, with employees in higher education institutions reporting higher cognitive workload. This indicates that while the extent of ChatGPT-assisted work and task efficiency may be broadly comparable across the two settings, the cognitive demands associated with AI-assisted work may vary according to organizational context and task requirements.

Development of the ChatGPT-Assisted Work and Task Efficiency Framework.

Based on the collective findings, the study concludes that the proposed ChatGPT-Assisted Work and Task Efficiency Framework (CAWTEF) provides an empirically informed structure for promoting efficient and cognitively sustainable ChatGPT use across corporate organizations and higher education institutions. The framework integrates ChatGPT-assisted work, cognitive workload, employee task efficiency, organizational context, AI literacy and skills development, task design and integration, cognitive workload management, organizational policies and governance, and continuous monitoring and support. The framework emphasizes that effective ChatGPT integration should enhance employee efficiency while maintaining manageable cognitive demands, critical thinking, human judgment, accountability, and responsible AI use.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are proposed in alignment with the research objectives:

1. Strengthen the effective use of ChatGPT-assisted work.

Corporate organizations and higher education institutions should develop structured guidelines for integrating ChatGPT into information and knowledge support, content and communication assistance, problem-solving and decision support, and task and workflow assistance. Since information and knowledge support emerged as the most extensively utilized dimension, organizations should also strengthen employees' ability to verify, contextualize, and appropriately apply AI-generated information. Particular attention should be given to developing responsible applications of ChatGPT for problem-solving and decision support, which obtained the lowest assessment among the dimensions.

2. Manage cognitive workload associated with ChatGPT use.

Organizations should design AI-assisted work processes that minimize unnecessary mental demand, effort, task complexity, and information-processing demand. Employees should be provided with practical strategies for effective prompting, information filtering, output verification, and efficient integration of AI-generated

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content. Organizations should periodically assess whether ChatGPT is reducing cognitive burden or merely transferring workload from task production to checking, correction, and validation.

3. Sustain and improve employee task efficiency.

Organizations should strategically integrate ChatGPT into work activities where it can contribute to task completion speed, work accuracy and quality, resource and effort efficiency, and timely task accomplishment. Since resource and effort efficiency obtained the lowest assessment among the dimensions of task efficiency, organizations should review workflows to eliminate redundant prompting, repeated verification, unnecessary revisions, and inefficient movement between AI-assisted and manual work processes.

4. Utilize ChatGPT as a cognitive support mechanism.

Given the significant negative relationship between ChatGPT-assisted work and cognitive workload, organizations should identify tasks in which ChatGPT can appropriately reduce repetitive or information-intensive cognitive demands. However, AI assistance should not eliminate meaningful human cognitive involvement. Employees should continue to exercise critical thinking, professional judgment, information verification, and accountability, particularly when performing complex or consequential tasks.

5. Expand appropriate ChatGPT integration to support task efficiency.

Considering the significant positive relationship between ChatGPT-assisted work and employee task efficiency, organizations should encourage appropriate ChatGPT use for tasks where AI assistance can improve speed, accuracy, organization, and timeliness. Integration should be task-specific rather than unrestricted, with employees receiving clear guidance regarding when ChatGPT can be used independently, when outputs require verification, and when human expertise should take precedence.

6. Maintain manageable cognitive demands to protect task efficiency.

Since higher cognitive workload was significantly associated with lower employee task efficiency, managers and institutional leaders should monitor the cognitive demands created by AI-assisted work. Workflows involving excessive information processing, repeated checking, complicated prompting, or extensive correction of AI-generated outputs should be redesigned. The objective should be to achieve an appropriate balance between technological assistance and the cognitive resources required from employees.

7. Incorporate ChatGPT-assisted work into organizational productivity strategies.

Given that ChatGPT-assisted work significantly predicted employee task efficiency, organizations should consider AI-assisted work as one component of their productivity and digital transformation strategies. However, since ChatGPT-assisted work accounted for only part of the variance in task efficiency, organizations should avoid treating AI as the sole determinant of employee performance. Employee competencies, leadership support, job design, technological infrastructure, organizational culture, and other relevant factors should continue to be strengthened.

8. Integrate cognitive workload management into ChatGPT implementation.

The significant partial mediating role of cognitive workload indicates that organizations should evaluate both the direct efficiency benefits of ChatGPT and its effects on employees' cognitive demands. AI implementation programs should therefore incorporate cognitive workload assessment, employee feedback, appropriate task allocation, training, and human oversight. Organizations should seek to use ChatGPT to reduce unnecessary cognitive burden while preserving the higher-order thinking required for evaluation, judgment, creativity, and professional decision-making.

9. Develop context-specific strategies for corporate organizations and higher education institutions.

Since ChatGPT-assisted work and employee task efficiency did not significantly differ between the two organizational settings, general principles for responsible ChatGPT use may be applicable across both environments. However, because employees in higher education institutions demonstrated significantly higher cognitive workload, HEIs should provide additional support for faculty and staff engaged in research, teaching preparation, assessment development, academic writing, administrative documentation, and scholarly information evaluation. Corporate organizations should similarly adapt AI practices to the specific cognitive and operational requirements of their employees.

10. Adopt and validate the ChatGPT-Assisted Work and Task Efficiency Framework (CAWTEF).

Corporate organizations and higher education institutions may utilize the proposed CAWTEF as a guide for the responsible and cognitively sustainable integration of ChatGPT into workplace processes. Implementation should focus on AI literacy and skills development, appropriate task design and integration, cognitive workload management, organizational policies and governance, and continuous monitoring and support. Organizations adopting the framework should periodically evaluate its effectiveness and refine its components according to employee experiences, organizational requirements, technological developments, and performance outcomes.

For Future Researchers

Future studies should validate the CAWTEF using larger and more diverse samples and extend the investigation to government agencies, healthcare institutions, financial organizations, technology companies, small and medium enterprises, and other occupational settings. Researchers may also examine additional variables such as AI literacy, trust in AI, critical thinking, technology self-efficacy, job autonomy, technostress, employee engagement, organizational support, and innovation capability as potential predictors, mediators, or moderators. Longitudinal, experimental, and mixed-method research designs are also recommended to provide deeper evidence regarding how ChatGPT-assisted work and cognitive workload influence employee performance over time.

Overall, corporate organizations and higher education institutions are encouraged to pursue strategic, responsible, and cognitively sustainable ChatGPT integration rather than simply maximizing the frequency of AI use. The central objective should be to augment human capability, improve employee task efficiency, reduce unnecessary cognitive burden, and preserve critical thinking, professional judgment, accountability, and responsible decision-making.

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