

# ChatGPT in Knowledge-Intensive Work: Patterns of Adoption, Perceived Usefulness, and Human-AI Collaboration Across Three Domains

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## ABSTRACT

In this study, the authors explored the integration and impact of ChatGPT, a generative artificial intelligence (AI) tool, across three knowledge-intensive fields: coaching, information technology programming, and academic research. In a survey of 385 professionals, they examined adoption patterns, task support, and subjective perceptions of skill demands, creativity, and authenticity across ChatGPT versions 3.5 and 4. Despite domain-specific differences, ChatGPT was consistently seen as a valuable, complementary tool for structured and content-focused tasks, although not as a substitute for human expertise. GPT-4 was slightly preferred for complex use cases, but perceptions across versions were broadly similar. Domain-specific findings reveal that ChatGPT supports ideation and structuring in coaching, code review, and debugging in information technology, as well as writing and synthesis in science. These insights deepen organizations' understanding of how professionals experience AI-assisted work and highlight the evolving role of human agency in human-AI collaboration.

## KEYWORDS

Generative AI Adoption, Knowledge-Intensive Work, Professional Task Support

## INTRODUCTION

Recent advancements in artificial intelligence (AI), particularly generative AI (GenAI) systems like ChatGPT, are having a profound impact on knowledge-intensive work (Ahmad et al., 2023; Dwivedi et al., 2023; Zhang et al., 2024). Unlike previous technological waves that primarily automated physical tasks, this development in AI innovation has introduced significant uncertainties regarding the future of primarily cognitive professions (e.g., writing, coding, decision-making, and communication).

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Prior research has indicated notable benefits of using GenAI tools: For example, some studies have shown large productivity gains, with less-skilled workers benefiting most, thereby narrowing performance gaps (Noy & Zhang, 2023). Experimental research has documented efficiency gains in code generation (Liu et al., 2024), emergency triage (Kim & Im, 2023), and academic writing (Tossell et al., 2024). At the same time, some forecasts have predicted a substantial labor market reconfiguration: Up to 25% of jobs could be disrupted (Hatzius et al., 2023), and nearly half of tasks across occupations could be automated by GenAI, particularly in knowledge professions (Felten et al., 2023). Other research has raised concerns regarding skill erosion, ethical risks, and issues of authenticity in contexts where responsibility and originality are central (Kocoń et al., 2023; Mei et al., 2024). This tension underscores the urgency of examining how professionals actually adopt and experience GenAI in practice.

Beyond individual studies of task use and market forecasts, emerging research has highlighted the broader influence of GenAI on professional skill sets, emphasizing digital literacy, critical evaluation, and continuous learning as essential complements (Brynjolfsson & McAfee, 2012; Davenport, 2005; Wu & Yu, 2024). However, much of the current literature is domain specific, either experimental or speculative, and often framed as a competition between humans and machines (Brynjolfsson & McAfee, 2012; Downes & Levin, 2024). Less is known about how professionals in different fields incorporate GenAI into their everyday work and how they perceive its impact on core constructs, such as skills, creativity, and authenticity (Sun et al., 2024). Thus, we ask the following question: *How do professionals in knowledge-intensive domains utilize GenAI tools in their work?*

In this study, we addressed this question by analyzing GenAI adoption in three contrasting knowledge-intensive domains: coaching, information technology (IT) programming, and academic research. These domains differ in their degree of technological penetration and in their reliance on creativity and authenticity, making them suitable for comparison. Using a survey of 385 professionals, we examined adoption patterns, perceived benefits, and risks, and we reported impacts on skills, creativity, and authenticity. Our contributions are threefold: (a) we provide empirical evidence on how GenAI is currently used in real-world professional practice across multiple domains; (b) we highlight domain-specific differences and shared patterns, shedding light on the contingencies of GenAI integration; and (c) we derive implications for theory, practice, and policy concerning responsible GenAI adoption in knowledge work.

In the next section, we introduce the theoretical background on GenAI impacting knowledge-intensive work. Subsequently, we report the methods used in our study, including sampling, survey design, and measures. We then present findings regarding adoption patterns, task-specific use, and perceived impacts. Lastly, we link these findings to theories of technology adoption and human–AI collaboration. In addition, we outline implications for practice, policy, and future research.

## GENAI'S IMPACT ON KNOWLEDGE-INTENSIVE WORK

GenAI tools have the potential to support complex, knowledge-intensive tasks, and the tools increasingly act as collaborators rather than mere instruments (Haase & Pokutta, 2024; Kocoń et al., 2023). Tested applications of GenAI already span education (Farrokhnia et al., 2024), advertising (Osadchaya et al., 2024), and social media content creation (Brüns & Meißner, 2024). Yet, the extent to which these tools enhance professional output is not uniform; it depends on contextual fit, user skills, and professional norms.

This variation can be explained by several theoretical frameworks. *Human–AI complementarity* suggests that GenAI is most valuable when augmenting (rather than substituting) human capacities, providing breadth and speed while humans contribute contextual judgment and originality (Amershi et al., 2019). *Task–technology fit (TTF)* theory emphasizes that performance gains arise only when the technology's functionality aligns with the demands of specific tasks (Goodhue & Thompson, 1995). In domains in which tasks require sensitivity, empathy, or originality, fit may be limited, whereas in

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