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The Impact of Artificial Intelligence (AI) Systems on the Work of Graphic Design Professionals

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Abstract—This study investigates the impact of Artificial Intelligence on graphic designers, examining its benefits such as faster production, improved output quality, and enhanced creativity alongside its risks, including job insecurity, reduced creative control, and dependence on algorithms. The research adopts a descriptive analytical method using an online survey targeting designers in Bahrain. Findings indicate that AI is generally viewed as a supportive tool that enhances performance, yet concerns remain regarding job stability and the evolving role of designers in an automated future. The study recommends a responsible and balanced integration of AI to maximize benefits and minimize risks to the graphic design profession.

Keywords—artificial intelligence; graphic designers; graphic design; automation; creativity; job insecurity; future of creative professions; Bahrain

I. INTRODUCTION

The world has witnessed in recent years a new digital revolution characterized by the rapid proliferation of artificial intelligence technologies, particularly generative AI systems capable of producing texts, images, videos, and complex visual content. This development has brought about a qualitative leap in creative industries broadly, and in the graphic design profession specifically. Tools such as generative image models and AI-powered design platforms have become capable of suggesting color compositions, selecting fonts, and generating logos and advertising designs within seconds—tasks that previously required hours or days of manual work by professional designers. This rapid transformation has sparked a global debate about the future of creative professions and the ability of designers to maintain their human and creative role in the face of competition from automated systems.

In the context of Bahrain and the wider Arab region, graphic design is one of the vital fields linked to the media, advertising, and digital marketing sectors. Many organizations rely on designers to build visual identities, produce visual content for social media platforms and websites, and develop advertising campaigns. With the entry of AI tools into this context, practical questions have emerged among graphic designers themselves: some view these tools as an opportunity to accelerate work and free time for creative focus, while others see them as a direct threat to their jobs—with the potential that clients may produce designs themselves using ready-made platforms without needing a professional designer at all.

The research problem addressed by this study centers on understanding the actual impact of AI system usage on the desires, attitudes, and professional reality of graphic designers in Bahrain. Specifically, the study investigates whether this impact has led to weakened motivation for independent professional work and a

decline in designers' passion for the craft, or whether it has instead enhanced their creative capacity through new and innovative approaches. The fundamental question is not simply whether AI is present in the design process—it clearly is—but rather what the qualitative and professional consequences of this presence are for the designers who must navigate it on a daily basis.

The study carries both scientific and applied significance. Scientifically, it contributes to the Arabic literature on AI in creative professions—a topic that is relatively recent and developing rapidly—by providing a theoretical and methodological framework applicable to other research examining AI's impact on creative work. It also helps clarify the relationship between AI usage and two critical professional dimensions: job security and creative expression among designers. In applied terms, the study provides decision-makers in media institutions and advertising companies with a clearer understanding of how AI can be deployed to support designers rather than replace them, and offers designers themselves a more transparent picture of the strengths and opportunities that AI can provide alongside the risks that warrant preparedness. Universities and institutes can also benefit from the findings in developing graphic design curricula that include AI-related courses and skills appropriate to the demands of the contemporary professional environment.

The objectives of the study include: measuring the level of AI tool usage among graphic designers in Bahrain; assessing the perceived positive impacts of AI on design work, including speed of output, quality of results, and idea generation; identifying the perceived negative dimensions and professional anxieties associated with AI adoption; examining whether experience level and type of employer moderate designers' attitudes toward AI; and offering practical recommendations for the responsible and balanced integration of AI in professional graphic design practice.

Literature Review and Theoretical Framework

The academic literature on AI's impact on graphic design has grown substantially in recent years, driven by the rapid pace of technology adoption across the creative industries. The available studies reveal consistent patterns across different national and cultural contexts while also highlighting tensions and unresolved debates that make this an important and timely area of investigation.

Mustafa (2023) studied the impact of AI on the graphic design industry and concluded that AI tools contribute to increasing designer efficiency and improving output quality, while simultaneously raising genuine concerns about the displacement of some traditional professional roles and the reshaping of the profession's fundamental nature. This dual finding—AI as both enhancer and disruptor—is perhaps the most consistent theme in the literature. Li et al. (2024) provided a critical interpretive review of AI applications in graphic design, demonstrating that these applications are used across multiple stages of the design process, including visual data gathering, automated idea generation, and layout and color suggestions. They noted that AI's impact ranges from enhancing designer creativity to reducing the designer's role depending on the manner and context of use—a finding that highlights the importance of how, rather than whether, AI is integrated into professional practice.

Siagian (2024) analyzed graphic designers' perceptions of the advantages and disadvantages of AI, finding that the most prominent perceived benefits include

accelerating work and facilitating routine task execution, while the most prominent concerns involve loss of originality, similarity among outputs, and excessive dependence on ready-made models. The concern about output homogeneity is particularly significant for a profession whose value proposition rests substantially on the production of distinctive, original visual identities. Zhou et al. (2025) examined the impact of AI on the evolution of graphic design through a study titled 'Current Practices and Challenges,' finding that AI has changed the way designers think about the design process: designers' roles have gradually shifted from executors of visual work to supervisors and evaluators of machine output, while the need for aesthetic judgment and human expertise persists and remains indispensable.

Fleischmann (2024) investigated generative AI specifically within graphic design education, finding that students who learn to use AI tools effectively develop stronger conceptual thinking skills and broader visual vocabularies, but that the absence of guided critical reflection on AI use risks producing graduates who are dependent on automated systems without understanding the underlying design principles. This finding has direct implications for professional training as well as formal education. The industry literature also documents the dual-edged nature of AI adoption: Superside (2024) identified key professional benefits including cost reduction and speed gains, alongside concerns about intellectual property, creative authenticity, and the devaluation of human expertise in client relationships.

The theoretical framework for this study draws on the Technology Acceptance Model (TAM), originally developed by Davis (1989), which proposes that individuals' adoption and use of technology is primarily determined by two factors: perceived usefulness—the degree to which a person believes that using a particular system would enhance their professional performance—and perceived ease of use—the degree to which a person believes that using the system would be free of effort. In the context of graphic designers' adoption of AI tools, TAM helps explain why designers who perceive AI as genuinely useful for accelerating their work and enhancing their outputs are more likely to adopt it willingly and integrate it sustainably into their practice, while those who primarily perceive it as a threat to their professional identity and job security may resist or use it reluctantly. TAM also provides a framework for understanding how experience level moderates adoption: more experienced designers, whose professional identity and employment security are more firmly established, may be better positioned to perceive AI's usefulness without feeling threatened, while early-career designers, whose position is more precarious, may weight the threat dimensions more heavily.

Research Gap, Research Questions, and Hypotheses

A synthesis of the existing literature reveals an important research gap that the present study is designed to address. Most previous studies have focused on the global context—Europe, North America, and Asia—while attention to the Arab and Gulf context remains limited, making it necessary and timely to study the reality of graphic designers in Bahrain specifically. A further gap exists in the availability of quantitative field studies that measure designers' attitudes systematically using statistical tools: many prior studies relied on theoretical reviews or qualitative interviews, which, while valuable, do not provide the kind of systematic, quantifiable data needed to identify patterns across the profession. Additionally, while most research agrees that AI

enhances efficiency and productivity, a specific research gap remains regarding the statistical relationship between the level of AI usage and feelings of professional anxiety or security among designers—the relationship that this study is specifically designed to illuminate.

The study addresses four research questions: RQ1: What is the level of AI tool usage among graphic designers in their professional work? RQ2: What are the most prominent perceived benefits of using AI in graphic design? RQ3: What are the most prominent perceived negative dimensions and sources of professional anxiety associated with AI adoption? RQ4: Is there a statistical relationship between the level of AI use and the sense of professional threat among designers?

Four hypotheses are advanced: H1: There is a positive relationship between the level of AI use and improved professional productivity among graphic designers. H2: There is a positive relationship between high AI dependence and an elevated sense of professional threat among graphic designers. H3: There are significant differences in designers' attitudes toward AI according to years of professional experience. H4: There are no significant differences in attitudes toward AI according to the type of employer organization.

II. METHODOLOGY

This study adopts a descriptive analytical approach using a quantitative survey methodology, selected for its suitability to the study's objectives of measuring the attitudes and perceptions of a professional sample in a systematic, numerically analyzable form. The quantitative method allows the researcher to examine the relationships between AI use levels and professional outcomes—productivity and job threat perception—without intervening in participants' behavior, while enabling comparison across demographic subgroups defined by experience level and employer type. The survey approach is well-established in studies of technology adoption and professional attitudes, and provides data that can be directly related to the study's theoretical framework and hypotheses.

Research Design

The study belongs to the category of quantitative descriptive research, employing a survey design to measure graphic designers' attitudes toward AI and its impact on their professional practice across four principal dimensions. The first dimension addresses actual AI tool usage in graphic design work, measuring frequency of use, type of tools used, and stages of the design process in which AI is applied. The second dimension, the positive axis, measures designers' perceptions of AI's benefits, including speed of output, quality of results, idea generation, cost reduction, and enhancement of creativity. The third dimension, the negative axis, measures professional anxiety including concerns about job threats, loss of creative control, similarity of outputs, and intellectual property and ethical issues. The fourth dimension captures demographic and contextual variables including gender, age, educational qualification, years of experience, type of employer, and level of AI engagement. Responses on the attitude dimensions are measured using a five-point Likert scale ranging from strongly agree to strongly disagree.

Sampling

The study population comprises graphic designers working in Bahrain across a range of professional contexts, including advertising agencies, design companies, media institutions, and freelance practitioners. This population was selected because it represents the professional group most directly and

immediately affected by the introduction of AI tools into the design industry, making its members ideally positioned to provide substantive, first-hand data on AI's professional impact. A purposive sampling approach was used to identify and recruit participants with direct professional experience in graphic design in Bahrain, ensuring that the sample consists of individuals with the knowledge and experience necessary to provide meaningful responses to the study's questions. The sample encompasses designers at different career stages—from early-career professionals to experienced practitioners—and from different types of employing organizations, enabling the comparative analyses required to test hypotheses H3 and H4.

Data Collection

The primary data collection instrument was an electronic questionnaire designed to align directly with the study's objectives and distributed to graphic designers in Bahrain. The questionnaire was structured in four sections corresponding to the four measurement dimensions described above. Demographic data collected in the first section includes gender, age, educational level, years of professional experience, type of employer, and self-assessed level of AI engagement. The subsequent three sections capture actual AI usage patterns, perceived benefits, and perceived negative dimensions respectively, using closed-ended items measured on the Likert scale. The questionnaire was reviewed by specialists in media studies to verify the clarity and appropriateness of items for the research context. Reliability was assessed through Cronbach's Alpha, which yielded a high reliability coefficient confirming the instrument's dependability for data collection purposes. The questionnaire was distributed electronically, consistent with the digital nature of the target professional community.

Data Analysis

Data collected through the questionnaire were analyzed using descriptive statistical methods, including frequencies, percentages, arithmetic means, and standard deviations, with the aim of characterizing the directional tendencies of participants' responses and providing answers to the study's research questions. Likert scale responses were analyzed to identify patterns of agreement and disagreement with statements about AI's positive and negative professional impacts. Comparative analysis was conducted across subgroups defined by years of professional experience and type of employer to test the study's third and fourth hypotheses. Correlational analysis was used to examine the relationships between AI usage levels and the two outcome variables—productivity improvement and job threat perception—to test the first and second hypotheses. Microsoft Excel was used for data organization and preliminary analysis.

III. FINDINGS

The study produced seven substantive findings based on analysis of survey responses from graphic designers in Bahrain, addressing the multiple dimensions of AI's impact on professional practice, productivity, creative identity, and professional security.

Finding 1 — AI as a Supportive Productivity Tool: Survey results showed that the majority of graphic designers perceive AI as a supportive tool that enhances speed of output, improves the quality of design results, and supports the idea generation phase of the creative process. Medium to high levels of AI adoption were observed in daily professional work, particularly for routine tasks such as image

enhancement, color palette suggestion, layout generation, and the production of initial design concepts. This finding confirms H1 and is consistent with the broader international literature documenting AI's productivity benefits in creative professions. The finding is significant in the Bahraini professional context because it demonstrates that AI adoption has moved beyond early experimentation and is now a normalized component of daily practice for a substantial portion of the designer community.

Finding 2 — Differential Impact by Experience Level: A meaningful difference emerged between experienced and early-career designers in their perception and experience of AI's professional impact. Experienced designers demonstrated a stronger tendency to view AI as a development and enhancement tool rather than a direct threat, integrating it into their practice as a complement to their established skills and creative judgment. In contrast, early-career designers expressed significantly higher levels of anxiety about job displacement, reflecting concerns that AI tools may reduce the demand for entry-level design work by enabling clients to produce acceptable designs independently using ready-made platforms. This finding confirms H3 and has important implications for professional training and mentorship: supporting early-career designers in developing a confident and strategic relationship with AI tools may be as important as technical instruction.

Finding 3 — Positive Relationship Between AI Use and Productivity: The data revealed a clear positive relationship between higher levels of AI tool usage and improvements in professional productivity as self-assessed by designers. Designers who used AI tools more frequently and across more stages of the design process reported greater efficiency in completing projects, reduced time spent on routine tasks, and more time available for higher-order creative and strategic work. This finding directly supports H1 and is consistent with the Technology Acceptance Model's prediction that perceived usefulness drives adoption and that adoption, in turn, produces the productivity gains that motivated it. The practical implication is that increasing AI literacy among designers can generate measurable professional benefits even in the relatively short term.

Finding 4 — Positive Relationship Between AI Dependence and Job Threat Perception: The data also revealed a positive relationship between high levels of AI dependence and elevated feelings of professional threat—a finding that confirms H2 and represents one of the study's most important contributions to the literature. Designers who rely most heavily on AI tools in their daily work were found to simultaneously report the highest levels of concern about AI's implications for job security, professional autonomy, and the future value of human design expertise. This finding suggests a productive tension at the heart of AI adoption: the same tools that enhance productivity also heighten awareness of AI's capacity to displace human work. This tension needs to be addressed at both institutional and professional levels through proactive strategies that define and protect the distinctive value of human design expertise.

Finding 5 — No Significant Differences by Employer Type: The study found no significant differences in attitudes toward AI according to the type of employer organization—whether advertising agencies, design companies, media institutions, or freelance practice. This finding confirms H4 and suggests that the professional and psychological dynamics of AI adoption are primarily shaped by individual factors such as experience level, professional identity, and

personal relationship with technology, rather than by the organizational context of employment. The consistency of attitudes across employer types also indicates that the concerns and opportunities identified in this study are generalizable across the range of professional environments in which Bahraini graphic designers work.

Finding 6 — Concerns About Creativity, Originality, and Intellectual Property: Alongside productivity benefits, the study identified significant and widespread concerns among designers about the creative and ethical dimensions of AI adoption. The most prominent concerns include the perceived loss of design originality as AI-generated outputs increasingly resemble one another across users and platforms; the reduction of creative control as the designer's role shifts from author of visual work to curator of machine output; and unresolved issues related to intellectual property rights in works produced using AI tools. These concerns are consistent with the findings of Siagian (2024) and Zhou et al. (2025) in the international literature and indicate that the adoption of AI in graphic design raises not only economic and professional questions but also fundamental questions about authorship, creativity, and professional identity.

Finding 7 — Demand for Professional Awareness and Institutional Support: The study findings collectively indicate a strong need among graphic designers in Bahrain for professional awareness programs, institutional guidance, and educational infrastructure to support the responsible and balanced integration of AI into professional practice. Designers expressed the need for clear guidance on how to use AI tools in ways that enhance rather than substitute for their creative capabilities, and for institutional frameworks—including professional associations, educational institutions, and employing organizations—that actively support designers in adapting to the AI-transformed landscape of their profession without sacrificing the human expertise and creative judgment that constitute the irreplaceable core of professional design practice.

IV. LIMITATIONS AND FUTURE RESEARCH RECOMMENDATIONS

This study is subject to several methodological and contextual limitations that should be acknowledged. First, the geographic scope of the study is confined to graphic designers in Bahrain, which limits the direct generalizability of findings to other national contexts in the Gulf region and beyond. While Bahrain's design industry shares characteristics with neighboring Gulf markets, the specific professional culture, market structure, and institutional environment of each country may produce different patterns of AI adoption and attitude formation. Second, the study relies on self-report data collected through a questionnaire, which is subject to the standard limitations of self-report methodology, including the potential for social desirability bias and the reliance on participants' own perceptions of their AI usage levels and professional attitudes rather than independently verified behavioral data.

Third, the study's cross-sectional design captures a single snapshot of designers' attitudes at a specific point in time, while the AI landscape in graphic design is evolving at an exceptionally rapid pace. Attitudes documented in the study may shift significantly as AI tools become more capable, more widely adopted, and more deeply integrated into professional workflows. Fourth, while the Likert scale instrument provides reliable and comparable attitudinal data, it cannot capture the full complexity and nuance of individual designers' experiences with AI, which may include

highly context-specific and personal dimensions that survey items cannot fully access.

Future research is recommended in several directions. Longitudinal studies tracking changes in graphic designers' AI adoption patterns and professional attitudes over time would provide more dynamic evidence about how the profession is adapting to AI and how the productivity and threat perceptions documented in this study evolve as both the technology and its adoption mature. Comparative studies examining AI's impact on graphic designers across multiple Gulf countries would clarify whether the patterns identified in Bahrain are representative of a broader regional trend or specific to local conditions. Qualitative studies using in-depth interviews and focus groups would complement the quantitative findings of the present study by capturing the experiential and narrative dimensions of designers' AI journeys. Studies specifically examining the relationship between AI tool use and measurable creative output quality—using expert evaluation of design portfolios rather than self-reported quality perceptions—would provide more objective evidence about AI's actual impact on professional output standards. Finally, research examining the implications of AI adoption for graphic design education curricula would provide actionable guidance for universities and training institutions seeking to prepare the next generation of designers for an AI-integrated professional environment.

V. CONCLUSION

This study examined the impact of AI systems on the work of graphic design professionals in Bahrain, employing the Technology Acceptance Model as a theoretical framework and a quantitative survey methodology. The findings document a professional community in active transition: AI tools are already deeply integrated into the daily practice of many Bahraini graphic designers, delivering measurable productivity benefits while simultaneously generating professional anxieties that are unevenly distributed across the designer population by experience level.

The study's most significant theoretical contribution is the demonstration that AI adoption in graphic design is not simply a story of productivity gain or job threat, but a complex professional phenomenon in which both dynamics operate simultaneously within the same practitioners. The positive relationship between AI use and productivity improvement confirms the core prediction of the Technology Acceptance Model: when designers perceive AI as genuinely useful, they adopt it and gain the benefits that motivated adoption. The parallel positive relationship between AI dependence and job threat perception reveals the other face of this same dynamic: the more central AI becomes to professional practice, the more visible and pressing its potential to displace human work becomes to the designers who use it most intensively.

The study's finding that experience level significantly moderates these dynamics—with experienced designers seeing AI as a tool while early-career designers see it as a threat—carries important practical implications. It suggests that the professional risks of AI are most acutely felt by those least equipped to manage them: designers early in their careers, without the established reputation, client relationships, and demonstrable human expertise that provide insulation from automation pressure. Supporting these designers specifically—through mentorship, professional development programs, and AI literacy training—should be a priority for both educational institutions and professional associations in Bahrain and the Gulf region.

The study's recommendations include: strengthening professional awareness programs for designers on how to use AI tools in ways that support rather than replace creativity; encouraging designers to develop their distinctive creative signatures rather than depending entirely on automated generation; urging institutions to deploy AI as a supportive tool for designers rather than as a substitute for human creative expertise; developing professional policies that protect intellectual property rights in AI-assisted design work; and integrating AI training into graphic design curricula at universities to equip designers for the future. In conclusion, AI represents both the most significant challenge and the most powerful opportunity that the graphic design profession has encountered in recent decades. Realizing its potential while managing its risks requires a conscious, collectively supported, and institutionally grounded approach to integration that places human creativity and professional expertise at the center of an AI-augmented future for design.

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