

The Dual Impact of AI on Modern Careers: A Study on Positive Efficiency and Negative Displacement

Shruti B. Pilaware, Rohan S. Narute, Shamika D. Diwan

1. Abstract

This research paper explores the dichotomy of Artificial Intelligence (AI) in the modern workforce, focusing on both its destructive and constructive capabilities. The study specifically examines how Generative AI is reshaping creative industries, leading to job displacement for traditional roles like graphic designers while simultaneously democratizing creativity for non-experts [1][2][5].

A descriptive research design was used, and primary data was collected through a structured questionnaire circulated among students and working professionals. The findings reveal a sharp division: while AI poses a significant threat to specific job roles by automating creative outputs such as images, videos, and layouts, it positively impacts organizational efficiency by drastically reducing the manpower required for complex projects [3][4].

The study concludes that the future workforce must pivot from purely technical execution to strategic management of AI tools to survive this transition [6][8][10].

2. Keywords

Artificial Intelligence, Generative AI, Career Displacement, Graphic Design, Creative Industry, Operational Efficiency, Prompt Engineering, Workforce Reduction, Automation, Job Security

3. Introduction – Motivation for this Research

AI and automation have shifted from being support tools to becoming primary drivers of production. Nowhere is this more visible than in the creative and agency sectors. The introduction of Generative AI tools such as Midjourney, DALL-E, and Sora has disrupted industries that were previously considered safe from automation due to their creative nature [1][2][5].

On one hand, this technological shift has negatively impacted professionals like graphic designers, whose core skills—layout creation, image generation, and video editing—are now replicable by software [2][5]. On the other hand, it has created immense positive value by allowing individuals without technical backgrounds to generate professional-grade content using simple prompts [2][8].

Furthermore, agencies are witnessing unprecedented efficiency, where projects that once required large teams can now be executed by a handful of AI-augmented individuals [3][4].

This study aims to understand:

- The negative impact of AI on traditional creative roles, especially graphic designers.
- The positive impact of AI in democratizing skills for non-experts.
- The economic efficiency gained by reducing team sizes in agency settings.

There is a growing conflict in the job market: AI is increasing productivity and lowering barriers to entry for creators, but it is simultaneously erasing traditional career paths [6][7][9]. Specifically, graphic designers and creative professionals are facing an existential crisis as AI tools render their manual skills obsolete [5][10]. There is a need to analyze this trade-off between operational efficiency and professional displacement.

4. Literature Review

- Early research focused on AI replacing manual labor in manufacturing. However, recent studies indicate that Generative AI is now targeting white-collar creative jobs [1][9].
- Reports suggest that the graphic design and video production industries are experiencing a paradigm shift where AI-generated content is becoming indistinguishable from human-created work [2][5][10].
- Acemoglu & Restrepo established the foundational theory of “displacement vs. reinstatement,” arguing that while automation destroys jobs, it usually creates new tasks. However, the speed of Generative AI adoption may outpace the creation of new tasks [6].
- Autor discusses the “hollowing out” of middle-skill jobs. This paper applies that theory to creative fields, suggesting that mid-level designers are most at risk, while elite directors and low-cost prompters survive [7].
- Brynjolfsson et al., in “Generative AI at Work,” highlight that AI tools increase productivity most for novice workers, narrowing the gap between experts and beginners. This supports the hypothesis of skill democratization [8].
- The OpenAI & UPenn study “GPTs are GPTs” found that jobs with higher wages and higher entry requirements, such as specialized design, have higher exposure to LLMs and image generators [9].
- Frey & Osborne revisited their automation probability research, noting that creative intelligence, once considered a bottleneck for AI, is no longer a safe haven due to diffusion models [10].

Research Gaps

- Most studies look at jobs broadly; few focus specifically on the displacement of graphic designers versus the rise of prompt engineers.
- There is limited data quantifying how much AI reduces team sizes, such as the 10-to-2 ratio, in agency settings.

5. Research Methodology

System Design / Architecture / Setup

This research follows a Descriptive Survey Design. The system for this research is defined by the interaction between human capability and AI tools.

5.1 Experimental Setup & System Design

- Variable A — Independent Variable: Usage of Generative AI Tools such as Midjourney, ChatGPT, and Canva Magic.
- Variable B — Dependent Negative Variable: Job Security Perception and Displacement, especially in graphic design roles.
- Variable C — Dependent Positive Variable: Operational Efficiency and team size reduction.

5.2 Data Collection Method

Primary data was collected using a structured Google Form. The questionnaire was designed using a Likert Scale from 1 to 5 to measure sentiment and Multiple Choice Questions for demographic and technical data.

The respondents included:

- Graphic Designers
- Agency Owners
- Project Managers
- Students

The sampling method used was Convenience Sampling.

Sample Size: 50 respondents.

5.3 Key Metrics & Survey Questions

To measure the positive impact of efficiency and the negative impact of displacement, the following questions were asked:

Metric: Displacement Anxiety — Negative Impact

- Q1: Do you believe AI tools like Midjourney will make traditional graphic design skills obsolete within 5 years?
- Q2: Have you or your colleagues experienced a reduction in freelance or contract work due to clients using AI?

Metric: Operational Efficiency — Positive Impact

- Q3: In your experience, how has AI affected team sizes for standard projects?

Options: No change / Reduced by half / Reduced by more than 70%

- Q4: Can a team of 2–3 people using AI now complete the workload of a previous 10-person team?

Options: Agree / Disagree

Metric: Democratization — Positive Impact

- Q5: As a non-designer, do you feel confident creating professional images using AI prompts?

6. Facts and Findings

6.1 Negative Sentiment: Fear of Obsolescence

- 70% of respondents with a background in Arts/Design expressed high anxiety regarding their career future.

This confirms the negative displacement concern. Respondents cited instances where clients selected “good enough” AI images instead of custom human design to save costs. The technical barrier that protected graphic designers, such as knowledge of complex software, has been reduced [\[5\]\[10\]](#).

6.2 Positive Sentiment: Velocity and Volume

- 80% of respondents admitted that tasks such as background removal, concept generation, and video storyboarding are now completed in minutes rather than days.

This confirms the efficiency impact of AI. For businesses, this is a major advantage because it allows rapid A/B testing of creatives, which was previously expensive and time-consuming [\[2\]\[3\]\[4\]](#).

6.3 Workforce Reduction: The 10-to-2 Paradigm

- 65% of agency owners surveyed confirmed that they are restructuring teams.

The specific data point of 10 people versus 2 people was validated. Owners reported that previously, a project required:

- 1 Art Director
- 4 Senior Designers
- 3 Junior Designers
- 2 Copywriters

Total: 10 people

Now, the workflow involves:

- 1 Creative Strategist / Prompter
- 1 Editor / Finisher

Total: 2 people

This suggests that while individual productivity has increased, demand for headcount has reduced [\[3\]\[4\]\[8\]](#).

7. Result / Discussion

A. Negative Impact: Displacement of Expertise

The most significant negative finding is the erosion of the graphic designer role. Previously, creating a marketing campaign required deep knowledge of color theory, layout software such as Photoshop and Illustrator, and rendering.

Now, image generation models can create high-fidelity visuals instantly. This has led to job losses in the graphic industry, as entry-level and mid-level designers are being replaced by AI tools that are faster and cheaper [\[5\]\[9\]\[10\]](#).

B. Positive Impact: Democratization and Accessibility

AI has democratized creativity. Individuals who do not know how to draw, design layouts, or structure images can now generate agency-level work simply by typing prompts [\[2\]\[8\]](#).

This allows entrepreneurs and small business owners to create their own assets without hiring expensive specialists.

C. Positive Impact: Extreme Efficiency

The study validates a major shift in agency operations. In the past, a large-scale project required a team of 10–20 people, including writers, illustrators, editors, and formatters.

Today, because AI handles the heavy lifting of generation and iteration, the same project is often completed by just 2 to 3 people [\[3\]\[4\]](#).

While this is negative for employment numbers, it is positive for business profitability, speed, and efficiency.

8. Interpretation

1. Manual design skills are becoming less valuable than the ability to write effective prompts [\[2\]\[8\]](#).
2. The graphic design industry is shrinking in headcount, and purely technical roles are disappearing [\[5\]\[10\]](#).
3. A single person using AI can now do the work of a specialized department [\[3\]\[4\]](#).
4. Companies are preferring leaner teams of 2–3 people over large workforce structures of 10–20 people [\[4\]\[8\]](#).
5. The impact of AI on careers is not simply positive or negative; it is a trade-off between productivity and displacement [\[6\]\[7\]\[9\]](#).
6. Professionals must stop competing with AI and start collaborating with it by becoming strategists who direct AI tools [\[8\]\[10\]](#).

9. Conclusion

The impact of AI on careers is not a simple good or bad outcome. It is a trade-off.

The negative reality is that specialized roles like graphic design are diminishing, leading to job insecurity for those who rely only on manual content creation. AI tools are replacing several technical tasks such as layout generation, image creation, background removal, concept generation, and video storyboarding [\[5\]\[9\]\[10\]](#).

The positive reality is the explosion of productivity. Businesses can now operate with a fraction of the workforce, and non-experts are empowered to create professional-grade outputs using AI prompts [2][4][8].

To remain relevant, professionals must stop competing with AI by trying to design faster than a bot. Instead, they must collaborate with AI by becoming strategists, curators, editors, and decision-makers who direct AI-generated work effectively [8][10].

10. References

[1] McKinsey & Company. (2023). *Generative AI and the Future of Work in America*.

Link: <https://www.mckinsey.com/mgi/our-research/generative-ai-and-the-future-of-work-in-america>

Source verified from McKinsey's report page.

[2] Adobe. (2024). *State of Creativity Report 2024 / Generative AI and Creative Workflows*.

Link: https://www.adobe.com/content/dam/cct/creativecloud/business/teams/whitepapers/dotcom-116728/Adobe_StateofCreativity_Report_2024_FV_UE.pdf

Source verified from Adobe's 2024 creativity report.

[3] Harvard Business Review. (2023). *How Generative AI Changes Strategy*.

Link: <https://hbr.org/podcast/2023/05/how-generative-ai-changes-strategy>

Source verified from Harvard Business Review.

[4] Goldman Sachs. (2023). *Generative AI Could Raise Global GDP by 7%*.

Link: <https://www.goldmansachs.com/insights/articles/generative-ai-could-raise-global-gdp-by-7-percent>

Source verified from Goldman Sachs Research.

[5] Design Week. (2025). *Graphic Design Among Most At-Risk Jobs from AI – Report*.

Link: <https://www.designweek.co.uk/graphic-design-among-most-at-risk-jobs-from-ai-report/>

Source verified from Design Week.

[6] Acemoglu, D., & Restrepo, P. (2019). *Automation and New Tasks: How Technology Displaces and Reinstates Labor*. Journal of Economic Perspectives.

Link: <https://www.aeaweb.org/articles?id=10.1257/jep.33.2.3>

Source verified from American Economic Association.

[7] Autor, D. (2022). *The Labor Market Impacts of Technological Change*.

Link: <https://shapingwork.mit.edu/wp-content/uploads/2023/10/Autor-May-2022.pdf>

Source verified from MIT Shaping the Future of Work.

[8] Brynjolfsson, E., Li, D., & Raymond, L. R. (2023). *Generative AI at Work*. NBER Working Paper Series.

Link: <https://www.nber.org/papers/w31161>

Source: NBER Working Paper Series.

[9] Eloundou, T., Manning, S., Mishkin, P., & Rock, D. (2023). *GPTs are GPTs: An Early Look at the Labor Market Impact Potential of Large Language Models*.

Link: <https://openai.com/index/gpts-are-gpts/>

Source verified from OpenAI.

[10] Frey, C. B., & Osborne, M. A. (2023). *Generative AI and the Future of Work: A Reappraisal*. Oxford Martin School.

Link: <https://www.oxfordmartin.ox.ac.uk/publications/generative-ai-and-the-future-of-work-a-reappraisal>

Source verified from Oxford Martin School.