

Experiences of Freelancers with AI and Chatbots

Fereydon. Eslami^{1*} , Roodabeh. Hooshmandi¹ 

¹ Department of Psychology and Counseling, KMAN Research Institute, Richmond Hill, Ontario, Canada

* Corresponding author email address: fereydonealami@kmanresce.ca

Article Info

Article type:

Original Research

How to cite this article:

Ealami, F., & Hooshmandi, R. (2023). Experiences of Freelancers with AI and Chatbots. *AI and Tech in Behavioral and Social Sciences*, 1(3), 28-34.

<https://doi.org/10.61838/kman.aitech.1.3.5>



© 2024 the authors. Published by KMAN Publication Inc. (KMANPUB), Ontario, Canada. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

ABSTRACT

This study aims to explore the experiences of freelancers with AI chatbots, identifying the main drivers behind their adoption, the challenges faced during their integration, and the overall impact on work and personal perceptions. Employing a qualitative research design, this study conducted semi-structured interviews with 29 freelancers from various professional backgrounds. Thematic analysis was utilized to distill the data into meaningful themes and categories, providing insights into freelancers' interactions with AI chatbots. Five main themes were identified: Adoption Drivers, Technological Challenges, Impact on Work, Ethical and Social Issues, and Personal Experiences and Reflections. Key findings include the efficiency gains and improved quality of work as primary adoption drivers, significant technological challenges related to integration and reliability, and varied impacts on job opportunities and financial aspects. Ethical concerns, notably regarding privacy, security, and bias, were prevalent. Personal reflections revealed a spectrum of perceptions on AI chatbots, from optimism about future prospects to concerns over professional identity and work-life balance. Freelancers' experiences with AI chatbots are marked by a complex interplay of benefits and challenges. While AI chatbots offer potential for efficiency and competitive advantage, their integration is hampered by technological hurdles and ethical dilemmas. Addressing these challenges, while fostering an environment that supports continuous learning and adaptation, is crucial for leveraging AI chatbots' full potential in freelancing.

Keywords: Artificial Intelligence, Chatbots, Freelancers, Technology Adoption, Ethical Considerations, Work Efficiency, Professional Development.

1. Introduction

AI chatbots have found applications in a wide array of settings, ranging from educational institutions and retail to the healthcare industry, each domain leveraging these technologies to enhance operational efficiency and user engagement (Aggarwal et al., 2022; Cain, 2023; Lee, 2022). In the educational sector, the incorporation of AI chatbots has sparked a vital discourse on their potential to assist in academic pursuits such as writing and article review (Lee, 2023; van Dis et al., 2023). This conversation

extends to the ethical ramifications of deploying AI chatbots in academic environments, probing into the moral considerations that accompany their use (Cain, 2023). Moreover, the impact of AI chatbots on learning outcomes has attracted scholarly attention, with research suggesting improvements through the adoption of human-like avatars and the integration of emotional intelligence capabilities (Wu & Yu, 2023).

The realm of customer service has witnessed a transformation with the advent of AI chatbots, becoming

indispensable tools for enhancing online customer experiences and fostering customer satisfaction (Chen et al., 2021; Q. Chen et al., 2023; S. Chen et al., 2023). Organizations across the board recognize the pivotal role of AI chatbots in elevating customer service standards and nurturing customer loyalty (Q. Chen et al., 2023). The banking sector, among other customer-centric industries, has been scrutinized to understand customer acceptance and pinpoint specific requirements for AI chatbot implementations (Abdallah et al., 2023).

In healthcare, AI chatbots have been deployed to facilitate health behavior changes and offer support during global health emergencies, such as the COVID-19 pandemic (Aggarwal et al., 2022; Mahdavi et al., 2023). These initiatives underscore the versatility of AI chatbots in promoting health-conscious behaviors and providing essential services during times of crisis. The application of AI chatbots extends to public administration and tourism, further evidencing the widespread adoption and diverse utility of this technology (Nirala et al., 2022; Rafiq et al., 2022).

Amidst this broad adoption, the freelancing community stands out as a unique ecosystem where AI chatbots are increasingly becoming integral components. Freelancers, known for their adaptability and entrepreneurial spirit, are leveraging AI chatbots to streamline workflows, enhance productivity, and foster client relationships. However, this integration is not without its challenges, as freelancers navigate the complexities of incorporating AI into their independent work structures. This study aims to unpack the multifaceted experiences of freelancers with AI chatbots, shedding light on how these digital tools are reshaping freelance work paradigms. By exploring the perspectives of freelancers on AI chatbot integration, this research contributes to the broader discourse on AI technologies' role in modern work environments. It offers insights into the opportunities AI chatbots present for freelance professionals, along with the hurdles they face in maximizing these technologies' potential. In doing so, this paper aims to provide a comprehensive understanding of the evolving relationship between freelancers and AI chatbots, marking a significant step forward in the exploration of AI's impact on the future of work.

In summary, the exploration of AI chatbots' roles across various domains establishes a foundation for understanding their potential in the freelancing sector. This research navigates through the experiences of freelancers with AI chatbots, aiming to contribute to the academic and practical

knowledge on leveraging AI technologies in the gig economy. As AI chatbots continue to evolve, their influence on freelancing practices promises to be a rich area for further investigation, heralding new possibilities and challenges for freelance professionals worldwide.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a qualitative research design to explore the experiences of freelancers with artificial intelligence (AI) and chatbots. The rationale for choosing a qualitative approach was to gain a deeper understanding of freelancers' perceptions, experiences, and attitudes towards these technologies, which are complex and nuanced phenomena that quantitative methods might not fully capture.

Participants were recruited from various freelancing platforms and online forums where freelancers are known to discuss their work and technology use. Eligibility criteria included being a freelancer who has used AI and chatbots in their work for at least six months. This criterion ensured that participants had sufficient experience to reflect upon. The study aimed to recruit a diverse group of freelancers in terms of demographics (age, gender, location) and professional backgrounds (writers, designers, developers, etc.) to enrich the data with a variety of perspectives.

This study was conducted in accordance with ethical standards for research involving human participants. Ethical approval was obtained from the institutional review board prior to the commencement of the study. Participants were provided with a consent form detailing the study's purpose, their rights as participants, and the confidentiality measures in place. Participation was voluntary, and participants had the right to withdraw from the study at any point without any adverse consequences.

2.2. Data Collection

Data were collected through semi-structured interviews, allowing for both guided questions and the flexibility for participants to share their experiences and insights beyond the prepared questions. The interview guide was developed based on a review of relevant literature and preliminary discussions with freelancers about their use of AI and chatbots. Key topics covered in the interviews included the nature of the participants' work, their reasons for using AI and chatbots, the impact of these technologies on their

work processes and outcomes, and their perceptions of the advantages and challenges associated with AI and chatbots.

Interviews were conducted online via video conferencing tools to accommodate participants' geographic diversity and schedules. Each interview lasted between 45 to 60 minutes and was audio-recorded with the participants' consent. Prior to the interviews, participants were informed about the study's objectives, their rights as participants, and the confidentiality measures in place to protect their identity and data.

Can you describe how you first started using AI and chatbots in your freelancing work? What prompted you to adopt these technologies?"

Efficiency and Productivity: "In what ways have AI and chatbots improved the efficiency and productivity of your work? Can you give specific examples?"

Challenges and Limitations: "What challenges or limitations have you encountered while integrating AI and chatbots into your work processes?"

Impact on Work Quality: "How do you believe AI and chatbots have affected the quality of your work and client satisfaction?"

Learning and Adaptation: "Can you discuss your learning process for effectively using AI and chatbots? How steep was the learning curve?"

Ethical Considerations: "Have you faced any ethical dilemmas or concerns while using AI and chatbots? How did you address them?"

Support and Resources: "What kind of support and resources have you found most useful in mastering AI and chatbots for your work?"

Future Perspectives: "How do you see your use of AI and chatbots evolving in the future? Are there specific technologies or advancements you're looking forward to integrating into your work?"

2.3. Data Analysis

The audio-recorded interviews were transcribed verbatim and subjected to thematic analysis. This involved a systematic process of coding the data to identify patterns, themes, and insights related to freelancers' experiences with AI and chatbots. Initial codes were generated by closely reading the transcripts, followed by the grouping of these codes into broader themes that captured the essence of the participants' experiences. The analysis was iterative, moving back and forth between the data and the emerging themes to ensure they accurately reflected the data. To enhance the trustworthiness of the findings, a subset of the data was independently coded by two researchers, and discrepancies were discussed until consensus was reached.

3. Findings

The study comprised 29 freelancers, diverse in their professional backgrounds and experiences with AI and chatbots. The participants ranged in age from 24 to 55, with a median age of 35. The group consisted of 17 females and 12 males, highlighting a relatively balanced gender distribution. Professionally, the participants represented a broad spectrum of freelancing fields, including 8 from writing and content creation, 7 in web and graphic design, 6 in software development, and 8 in digital marketing and SEO. The vast majority (24 out of 29) reported having used AI and chatbots for at least one year, underscoring a significant level of experience and familiarity with these technologies in their professional workflows. This demographic mix not only enriches the study with a variety of insights and experiences but also ensures that the findings reflect the diverse ways in which freelancers across different regions and sectors interact with AI and chatbots.

Table 1

The Results of Qualitative Analysis

| Categories | Subcategories | Concepts (Open Codes) |
|--------------------------|-----------------------|---|
| Adoption Drivers | Efficiency Gains | Time-saving, Streamlining workflows, Automation of mundane tasks, Increasing output volume |
| | Quality of Work | Error reduction, Precision in tasks, Enhanced creativity, Consistency in results |
| | Client Satisfaction | Faster delivery times, Higher quality outputs, Personalization, Improved communication |
| | Competitive Advantage | Staying ahead in the market, Unique service offerings, Innovation, Access to global markets |
| Technological Challenges | Integration Issues | Compatibility with existing tools, Technical glitches, Data migration issues, Interoperability challenges |
| | Learning Curve | Understanding AI capabilities, Training on new tools, Keeping up-to-date with technology, Adaptation speed |
| | Reliability and Trust | Accuracy of AI/chatbots, Dependence on technology, Security concerns, Ethical use of AI |
| Impact on Work | Work Process Changes | Adoption of new workflows, Collaboration with AI, Shifts in project management, Role of AI in decision-making |

| | | |
|--------------------------------------|--------------------------|---|
| Ethical and Social Issues | Job Opportunities | New markets, Evolution of job roles, Requirement for new skills, Entrepreneurial opportunities |
| | Financial Impact | Cost savings, Investment in technology, Return on investment, Budget allocation for AI tools |
| | Privacy and Security | Data protection, Confidentiality breaches, Ethical data use, Encryption and security measures |
| | Bias and Fairness | Algorithmic bias, Discrimination concerns, Ethical AI usage, Transparency in AI decision-making |
| Support and Resources | Impact on Employment | Job displacement fears, Freelancer vs. AI competition, New job creation, Skill obsolescence |
| | Training and Education | Accessibility of learning resources, Quality of training programs, Support for continuous learning, Specialized AI education |
| Personal Experiences and Reflections | Technical Support | Availability of support, Responsiveness, Expertise of support team, Customization help |
| | Community and Networking | Peer support networks, Professional associations, Online forums, Collaborative projects |
| | Adaptation and Change | Adaptability to new technology, Emotional response to AI, Personal growth, Change management |
| | Work-Life Balance | Time for personal life, Stress reduction, Flexibility in work, Managing workloads |
| | Perceptions of AI | Trust in AI technology, AI as a collaborator vs. competitor, Future reliance on AI, Ethical concerns |
| | Professional Identity | Impact on professional self-image, Evolving role of freelancers, Integration of AI into professional identity, Sense of craftsmanship |
| | Future Aspirations | Career development with AI, Long-term professional goals, Innovations in personal workflow, Aspirations for AI-enhanced services |

The research revealed that freelancers adopt AI and chatbots primarily due to efficiency gains, as one participant noted, "It's about doing more in less time. Automating the mundane tasks has been a game changer for me." This sentiment underscores the value of AI in streamlining workflows and increasing output volume, which aligns with the quality of work subcategory where freelancers reported an "error reduction" and "consistency in results," leading to client satisfaction through "faster delivery times" and "improved communication."

Freelancers also identified a competitive advantage in using AI and chatbots, citing "access to global markets" and the ability to "stay ahead in the market" through innovation. However, this adoption comes with its technological challenges. Integration issues and a significant learning curve were frequently mentioned, with one respondent commenting, "Keeping up-to-date with technology requires constant adaptation and a willingness to learn."

Reliability and trust in AI technologies were also highlighted as concerns, particularly regarding the "accuracy of AI/chatbots" and "security concerns," reflecting a cautious approach to dependence on these technologies.

The impact on work was profound, with freelancers noting changes in their work processes and acknowledging that AI has become an integral part of project management and decision-making. The financial impact of adopting AI tools was also discussed, with freelancers weighing the "cost savings" against the "investment in technology."

Ethical and social issues were not overlooked, with discussions on privacy and security, bias and fairness, and

the impact on employment. One interviewee expressed concerns about "algorithmic bias" and the need for "transparency in AI decision-making."

Support structures in the form of training and education, technical support, and community and networking play a crucial role in facilitating freelancers' adoption and use of AI. "The availability of learning resources and peer support networks has been invaluable," shared a participant.

Finally, personal experiences and reflections revealed freelancers' mixed feelings about the integration of AI into their work life. Adaptation and change were seen as both a challenge and an opportunity for personal growth, with one freelancer stating, "Adapting to AI has not only changed how I work but also how I view my capabilities and future in this industry." Work-life balance, perceptions of AI, professional identity, and future aspirations were other significant themes. "AI is a collaborator, not a competitor," reflected another, highlighting the nuanced relationship freelancers have with technology.

4. Discussion and Conclusion

This study explored the experiences of freelancers with artificial intelligence (AI) chatbots, revealing a nuanced landscape of opportunities and challenges. Key findings indicate that freelancers primarily adopt AI chatbots to enhance efficiency and productivity, streamline workflows, and improve the quality of work and client satisfaction. However, concerns around the ethical use of AI, potential biases, and the learning curve associated with integrating these technologies into their work processes were also highlighted. The study underscores the potential of AI chatbots to transform freelancing practices by facilitating

more efficient work processes and fostering better client relationships, albeit not without reservations regarding their ethical and practical implications.

In the exploration of freelancers' experiences with artificial intelligence (AI) chatbots, the analysis revealed five main themes: Adoption Drivers, Technological Challenges, Impact on Work, Ethical and Social Issues, and Personal Experiences and Reflections. Each theme encompasses specific categories that delve into the multifaceted dimensions of freelancers' interactions with AI chatbots. The Adoption Drivers theme highlighted categories such as Efficiency Gains, Quality of Work, Client Satisfaction, and Competitive Advantage. Technological Challenges covered Integration Issues, Learning Curve, and Reliability and Trust. Impact on Work was dissected into Work Process Changes, Job Opportunities, and Financial Impact. Ethical and Social Issues encompassed Privacy and Security, Bias and Fairness, and Impact on Employment. Lastly, Personal Experiences and Reflections shed light on Adaptation and Change, Work-Life Balance, Perceptions of AI, Professional Identity, and Future Aspirations.

Adoption Drivers encapsulated the positive aspects that motivate freelancers to utilize AI chatbots in their workflow. Efficiency Gains were noted for their role in saving time and automating mundane tasks, enhancing freelancers' productivity. The Quality of Work category revealed that AI chatbots contribute to error reduction and enhanced creativity, ultimately leading to better outputs. Client Satisfaction was highlighted through faster delivery times and personalized services, indicating AI chatbots' role in improving client relations. Competitive Advantage discussed how AI chatbots help freelancers stay ahead in the market by fostering innovation and offering unique services.

Technological Challenges addressed the hurdles freelancers face when integrating AI chatbots into their practice. Integration Issues pointed to difficulties in compatibility with existing tools and data migration. The Learning Curve category underscored the effort required to understand AI capabilities and stay updated with technological advancements. Reliability and Trust reflected concerns about the dependability of AI chatbots and security issues, emphasizing the need for trustworthy AI solutions.

Impact on Work explored how AI chatbots alter freelancers' professional landscapes. Work Process Changes focused on the adoption of new workflows and

collaboration with AI, signaling a shift in how projects are managed. Job Opportunities indicated that AI chatbots are opening up new markets and requiring freelancers to acquire new skills. Financial Impact revealed mixed effects, with some freelancers experiencing cost savings while others noted the necessity of investments in technology.

Ethical and Social Issues delved into the moral and societal implications of AI chatbot adoption. Privacy and Security raised alarms about data protection and confidentiality breaches. Bias and Fairness brought attention to algorithmic bias and the importance of ethical AI usage. Impact on Employment provoked discussion about AI potentially displacing jobs but also creating new opportunities.

Personal Experiences and Reflections provided a window into freelancers' subjective views on working with AI chatbots. Adaptation and Change captured freelancers' adaptability and emotional responses to technological change. Work-Life Balance highlighted how AI chatbots could offer more flexibility and time for personal life. Perceptions of AI varied, with some viewing AI as a collaborator and others as a competitor. Professional Identity discussed the impact of AI on freelancers' self-image and their role evolution. Future Aspirations reflected optimism for career development with AI and long-term goals.

Freelancers in our study cited efficiency and productivity gains as primary motivators for adopting AI chatbots, echoing findings by Abdallah et al. (2023), who highlighted customer acceptance of AI chatbots in the banking sector, emphasizing efficiency in service delivery (Abdallah et al., 2023). Similarly, Chen, Le, and Florence (2021) and Chen et al. (2023) underscored AI chatbots' role in enhancing online customer experiences, aligning with freelancers' appreciation for AI in streamlining workflows and improving output quality (Chen et al., 2021; S. Chen et al., 2023).

However, our research also revealed concerns about the ethical implications and potential biases inherent in AI chatbots. Cain (2023) extensively discussed the ethical considerations and the evolution of AI in academia, resonating with freelancers' apprehensions regarding the trustworthiness and ethical deployment of AI technologies (Cain, 2023). This underscores a critical dialogue on AI's role across domains, advocating for ethical standards and transparent AI practices.

The educational sector's exploration of AI chatbots, as noted by van Dis et al. (2023) and Lee (2023), for scholarly activities parallels our findings on AI's potential to aid freelancers in knowledge-based tasks (Lee, 2023; van Dis et al., 2023). However, our study extends the conversation to practical applications, where AI aids in real-world tasks beyond academic research, highlighting the versatility of AI chatbots in supporting professional activities across spectra.

In healthcare, the use of AI chatbots to promote health behavioral changes (Aggarwal et al., 2022; Mahdavi et al., 2023) mirrors our observations of AI chatbots facilitating behavioral adjustments in work routines among freelancers. This similarity emphasizes AI's capability to influence behavior across contexts, from health to work habits, showcasing its adaptability and impact on human actions.

The significance of AI chatbots in customer service and retention (Chen et al., 2021; S. Chen et al., 2023) also finds a counterpart in our study, where freelancers reported improved client satisfaction through AI-enhanced workflows. This correlation highlights AI chatbots' utility in fostering positive customer and client relationships, irrespective of the industry.

Furthermore, our findings on the challenges faced by freelancers, such as integration issues and the learning curve, reflect broader concerns in AI chatbot adoption (Nguyen et al., 2023; Sharma et al., 2024). This shared challenge points to the necessity for improved AI chatbot interfaces and user education to enhance user experience and acceptance across sectors.

In discussing future perspectives, our study aligns with the optimistic outlook of AI chatbots' evolving role (Lee, 2022; Rafiq et al., 2022). The anticipation of more sophisticated AI capabilities and the potential for innovation underscore a common hope for AI to continue advancing human endeavors, whether in freelancing, education, or customer service.

In conclusion, the integration of AI chatbots into the freelancing sector signifies a promising horizon for technological advancements in professional services. Freelancers' experiences, as revealed in this study, reflect a balanced view of embracing AI chatbots for their undeniable benefits in efficiency and client service while remaining cautious about ethical considerations and the challenges of adoption. These insights contribute to the broader discourse on AI technologies, emphasizing the critical balance between leveraging technological advancements and addressing potential pitfalls.

5. Limitations and Suggestions

This study's limitations include its reliance on self-reported data, which may introduce bias, and its focus on a specific demographic of freelancers, which may not fully capture the diversity of the freelance workforce globally. Additionally, the rapid evolution of AI technologies means that the findings may quickly become outdated, necessitating continuous research into this fast-moving field.

Future research should aim to expand the demographic reach to include a more diverse array of freelancers from different sectors and geographical locations, enhancing the generalizability of the findings. Longitudinal studies could also provide insights into how freelancers' attitudes and experiences with AI chatbots evolve over time. Moreover, exploring the impact of specific features of AI chatbots, such as personalization and emotional intelligence, on freelancers' work and client relationships could yield valuable insights.

For practitioners, this study suggests the importance of providing freelancers with access to training and resources to navigate the initial learning curve of integrating AI chatbots into their work. Additionally, developers and providers of AI chatbots should prioritize ethical considerations and transparency in the development of these technologies. For freelancers, embracing AI chatbots offers a pathway to enhanced productivity and client satisfaction, but it also necessitates a commitment to ongoing learning and ethical practice. Organizations and policymakers should also consider the implications of AI chatbots in freelancing, particularly regarding job displacement, privacy, and the need for regulatory frameworks to ensure fair and ethical use.

Authors' Contributions

All authors have contributed equally to the research process and the development of the manuscript.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We would like to express our gratitude to all individuals helped us to do the project.

Declaration of Interest

The authors report no conflict of interest.

References

- Abdallah, W., Harraf, A., Mosusa, O., & Abdalmuttaleb, M. A. M. A. S. (2023). Investigating Factors Impacting Customer Acceptance of Artificial Intelligence Chatbot: Banking Sector of Kuwait. *International Journal of Applied Research in Management and Economics*. <https://doi.org/10.33422/ijarme.v5i4.961>
- Aggarwal, A., Tam, C. C., Wu, D., Li, X., & Qiao, S. (2022). Artificial Intelligence (AI)-based Chatbots in Promoting Health Behavioral Changes: A Systematic Review. <https://doi.org/10.1101/2022.07.05.22277263>
- Cain, C. C. (2023). Artificial Intelligence and Conversational Agent Evolution – A Cautionary Tale of the Benefits and Pitfalls of Advanced Technology in Education, Academic Research, and Practice. *Journal of Information Communication and Ethics in Society*. <https://doi.org/10.1108/jices-02-2023-0019>
- Chen, J. S., Le, T.-T.-Y., & Florence, D. (2021). Usability and Responsiveness of Artificial Intelligence Chatbot on Online Customer Experience in E-Retailing. *International Journal of Retail & Distribution Management*. <https://doi.org/10.1108/ijrdm-08-2020-0312>
- Chen, Q., Lu, Y., Gong, Y., & Xiong, J. (2023). Can AI Chatbots Help Retain Customers? Impact of AI Service Quality on Customer Loyalty. *Internet Research*. <https://doi.org/10.1108/intr-09-2021-0686>
- Chen, S., Li, X., Liu, K., & Wang, X. (2023). Chatbot or Human? The Impact of Online Customer Service on Consumers' Purchase Intentions. *Psychology and Marketing*. <https://doi.org/10.1002/mar.21862>
- Lee, J. Y. (2023). Can an Artificial Intelligence Chatbot Be the Author of a Scholarly Article? *Journal of Educational Evaluation for Health Professions*. <https://doi.org/10.3352/jeehp.2022.20.6>
- Lee, M. (2022). Do Parasocial Relationships and the Quality of Communication With AI Shopping Chatbots Determine Middle-aged Women Consumers' Continuance Usage Intentions? *Journal of Consumer Behaviour*. <https://doi.org/10.1002/cb.2043>
- Mahdavi, A., Amanzadeh, M., Hamedan, M., & Naemi, R. (2023). Artificial Intelligence Based Chatbots to Combat COVID-19 Pandemic: A Scoping Review. <https://doi.org/10.21203/rs.3.rs-2565141/v1>
- Nguyen, V. T., Phong, L. T., & Chi, N. T. K. (2023). The Impact of AI Chatbots on Customer Trust: An Empirical Investigation in the Hotel Industry. *Consumer Behavior in Tourism and Hospitality*. <https://doi.org/10.1108/cbth-06-2022-0131>
- Nirala, K. K., Singh, N., & Purani, V. S. (2022). A Survey on Providing Customer and Public Administration Based Services Using AI: Chatbot. *Multimedia Tools and Applications*. <https://doi.org/10.1007/s11042-021-11458-y>
- Rafiq, F., Dogra, N., Adil, M., & Wu, J. Z. (2022). Examining Consumer's Intention to Adopt AI-Chatbots in Tourism Using Partial Least Squares Structural Equation Modeling Method. *Mathematics*. <https://doi.org/10.3390/math10132190>
- Sharma, S., Singh, G., Islam, N., & Dhir, A. (2024). Why Do SMEs Adopt Artificial Intelligence-Based Chatbots? *Ieee Transactions on Engineering Management*. <https://doi.org/10.1109/tem.2022.3203469>
- van Dis, E. A. M., Bollen, J., Zuidema, W., Rooij, R. v., & Bockting, C. (2023). ChatGPT: Five Priorities for Research. *Nature*. <https://doi.org/10.1038/d41586-023-00288-7>
- Wu, R., & Yu, Z. (2023). Do <sc>AI</Sc> Chatbots Improve Students Learning Outcomes? Evidence From a Meta-analysis. *British Journal of Educational Technology*. <https://doi.org/10.1111/bjet.13334>

Funding

According to the authors, this article has no financial support.

Ethical Considerations

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were observed.