

## **ARTIFICIAL INTELLIGENCE AND ITS EFFECT ON GIG WORKERS IN DHULE CITY**

**Miss. Nisha Guruprasad Kulkarni**

*Assistant Professor, Faculty of Commerce & Management, Vidya Wardhini Sabha's Dr. M. Y. Vaidya Arts, Prof. P. D. Dalal Commerce & Dr. D. S. Shah Science College, Dhule (MS), India.*

*Email: [nishagkulkarni11@gmail.com](mailto:nishagkulkarni11@gmail.com)*

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### **Abstract**

The rapid expansion of Artificial Intelligence (AI) is significantly transforming the structure of the gig economy. This study examines whether AI functions as a tool of empowerment or a potential threat to gig workers. Based on primary data collected from 125 respondents through a structured Likert-scale questionnaire, the research analyzes awareness of gig work, the role of AI in enhancing productivity, and concerns regarding job displacement. The findings indicate that a majority of respondents are familiar with the concept of gig work and recognize it as short-term, flexible, and platform-based employment. Most participants agree that online platforms serve as a primary medium for gig work. The data further suggests that AI tools contribute positively to task efficiency, productivity, and reduction of manual effort. A considerable proportion of respondents perceive AI as improving access to work opportunities and enhancing earning potential. However, the study also highlights mixed perceptions regarding the replacement risk posed by AI. While some respondents believe AI may replace certain work tasks and reduce demand in specific gig sectors, others remain neutral or optimistic. Notably, many participants view AI as both an opportunity for empowerment and a potential threat to job security. Overall, the research concludes that AI currently acts more as an enabling technology rather than a complete substitute for gig workers. The future impact of AI will largely depend on skill adaptation, technological awareness, and policy support to ensure sustainable employment within the evolving gig economy.

**Keywords:** Artificial Intelligence (AI), Gig Workers, Workforce Empowerment, Automation, Job Security, Future of Work.

► *Corresponding Author: Miss. Nisha Guruprasad Kulkarni*

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### **Introduction:**

The world of work is changing at a pace never seen before. Digital platforms, smartphones, and intelligent technologies have reshaped how individuals find employment, perform tasks, and earn income. One of the most significant outcomes of this transformation is the rise of gig work. Gig workers are individuals who engage in short-term, flexible, or project-based assignments instead of traditional full-time employment. They often connect with clients through digital platforms such as 99design, Urban Company, Uber, Swiggy, and Upwork, which act as intermediaries between service providers and customers.

The term "gig" originally referred to short-term performances by musicians, but in today's economic context, it broadly represents temporary, on-demand work arrangements. Gig workers may include delivery partners, ride-share drivers, freelance designers, content writers, programmers, and many others who operate independently rather than as permanent employees.

Unlike traditional employment, gig work offers flexibility in terms of working hours and task selection, but it may also lack job security, social protection, and stable income (Wood et al., 2019). In recent years, Artificial Intelligence (AI) has become deeply integrated into the functioning of the gig economy. AI systems are used to match workers with tasks, determine pricing, monitor performance, predict demand, and even evaluate customer feedback. For many gig workers, AI-powered tools enhance efficiency, reduce manual effort, and open access to wider markets. At the same time, automation and intelligent systems raise concerns about the possible replacement of human labour, particularly for routine and repetitive tasks (Brynjolfsson & McAfee, 2014).

Therefore, gig workers today operate at the intersection of opportunity and uncertainty. On one hand, AI can empower them by increasing productivity, improving earnings, and expanding work opportunities. On the other hand, it can intensify competition, increase algorithmic control, and create fear of job displacement. Understanding the meaning of gig workers and examining their position within the AI-driven economy is essential for assessing the broader future of work. This research paper aims to understand the concept of gig workers and analyze how AI influences their professional lives. By exploring both empowering possibilities and emerging risks, the study seeks to contribute to ongoing academic discussions on digital labour, technological transformation, and employment sustainability.

#### **Review of Literature:**

1. Dr. Periasamy P, Dr. Dinesh N, Dr. Sangeetha Padmanabhan (2024). The examines how Artificial Intelligence is transforming the Gig Economy in India by improving job matching, dynamic pricing, workforce planning and user experience. The literature highlights that AI driven algorithms enhance efficiency, transparency and skill verification while also supporting upskilling and fraud prevention. However, it also emphasizes ethical concerns such as data privacy, algorithmic bias and need for regulatory frameworks to ensure fair treatment of gig workers. Overall, the research suggests that AI plays a crucial but complex role in shaping the future of India's Gig Industry.
2. Ms. Sonali Udeshi (2024). This paper examines the transformation of the Gig economy through the lens of artificial intelligence, focusing on how algorithmic control facilitates labour commodification and exploitation. By applying Marxist theories such as alienation and surplus value, the research highlights the power imbalance between AI driven platforms and gig workers who faced increased precarity and a loss of autonomy. Finally, it evaluates the Indian regulatory landscape and proposes worker cooperatives and algorithmic transparency as essential pathways toward a more equitable future of work.
3. Ezeibunwa Justice and Ozuzu Chukwuemeka (2024). This paper examines hoe AI reshapes Nigeria's labour market by automating routine tasks and expanding the gig economy. While AI threatens to displace low skilled workers, it creates high value freelance opportunities and improves job matching efficiency. Ultimately, the authors argue that sustainable growth requires proactive upskilling and equitable policies to address income inequality and ensure a responsible transition.
4. Mr. Tirupathi Gangadharam and Prof. K. Radhika (2025). This paper examines the impact of AI and automation on India's forma; sector, projecting that 92.4 million jobs i.e. 62.8% face high displacement risks by 2030. Utilizing a mixed methods approach, it highlights how algorithmic management threatens labour rights and exacerbates socio-economic inequalities, while ultimately

advocating for ethical governance and a national reskilling mission to unlock a net gain of 4 million high skill roles.

5. Abhijeet Dawle, Pradeep Mishra, Amol Dapkekar, Sanjay Waychal and Jitendra Sharma (2025). This paper examines how AI powered platforms are transforming the gig economy in urban India, highlighting a double sized impact where increased operational efficiency and skill development coexist with risks like algorithmic bias and income instability. The authors conclude with multi-stakeholder framework, urging policymakers and platforms to prioritize transparency and social protection to ensure a sustainable and equitable labour market.

### **Objectives of the Study:**

1. To understand the term Gig Workers.
2. To assess AI's role in empowering of gig workers.
3. To evaluate AI's replacement risk for gig workers.

### **Research Methodology:**

- **Research Design:** The present study is Descriptive and Analytical. The descriptive approach examines gig workers' awareness and perceptions of Artificial Intelligence (AI), while the analytical approach evaluates whether AI serves as an opportunity for empowerment or poses a threat to job security.
- **Population:** The population for this study includes gig workers working on various digital platforms like freelancing, home services, delivery and ride sharing, etc. in Dhule City.
- **Sample Size:** Total 125 gig workers were selected for the study. This sample size was chosen to ensure enough responses for meaningful analysis.
- **Sampling Method:** A non-probability sampling technique under which convenience sampling method was used to collect data from respondents engaged in short-term, flexible or platform based work. Based on accessibility and time constraints the respondents were selected from the specified geographical area i.e. Dhule City, Maharashtra.
- **Data Collection:** In this research study both primary and secondary data was used to collect the information.
  - a) The Primary data was collected through a structured questionnaire containing Likert-scale questions. Responses were recorded on a 5-point scale (1 = Strongly Disagree to 5 = Strongly Agree). A total of 125 respondents participated in the survey.
  - b) The Secondary data was gathered from research articles, government and labour reports, journals, books, credible online sources, and publications from organizations such as the International Labour Organization and the World Economic Forum to support the theoretical framework and analysis.
- **Data Analysis Tools:** The collected data was coded and entered into Microsoft Excel for analysis.

### **Scope of the Study:**

The study focuses on examining the perception of gig workers regarding AI's role in improving productivity, income opportunities, and access to work, as well as the risk of automation and job displacement.

**Limitations of the Study:**

1. The study is based on a sample of 125 respondents, which may not fully represent the entire population of gig workers.
2. The use of convenience sampling limits the generalizability of the findings, as respondents were selected based on accessibility rather than random selection.
3. The data is perception-based and relies on self-reported responses, which may involve personal bias or subjective interpretation.
4. The study is geographically limited to Dhule City, and therefore the findings may not reflect the experiences of gig workers in other regions with different economic, technological, or infrastructural conditions.
5. Due to the rapid pace of advancement in Artificial Intelligence, the relevance of the findings may change over time as new technological developments continue to reshape the gig economy.

**Data Analysis and Interpretation:**

| Questions   | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|-------------------|----------|---------|-------|----------------|
| I am familiar with the term Gig Workers   | 24                | 20       | 34      | 26    | 21             |
| Gig workers involves short term, flexible or project based tasks                    | 24                | 27       | 32      | 16    | 26             |
| Online platforms are a major medium for Gig Workers                                 | 22                | 29       | 27      | 24    | 23             |
| AI tools help me perform my Gig tasks more efficiently                              | 22                | 28       | 28      | 28    | 19             |
| AI increases my productivity and reduces manual efforts in my work                  | 26                | 22       | 25      | 27    | 25             |
| AI has improved my income or earning potential                                      | 30                | 25       | 18      | 25    | 27             |
| AI has help me access more work opportunities                                       | 23                | 33       | 24      | 26    | 19             |
| Can AI replace some of your work tasks in the future                                | 26                | 23       | 26      | 23    | 27             |
| Will AI reduce demand for your type of Gig work                                     | 22                | 28       | 27      | 28    | 20             |
| AI is both an opportunity for empowerment and a potential threat to my job security | 32                | 22       | 21      | 29    | 21             |

**Result:**

The above data is derived from a structured questionnaire whose responses were collected from 125 respondents which can be interpreted as follows:

**1. Awareness about Gig Workers:** The first three questions ask for the workers awareness about the term Gig Workers. Most of the respondents said that they are familiar with the term “Gig Workers.” A large number selected Agree or Strongly Agree, which shows that they clearly

understand what gig work means. For the statement that gig work includes short-term, flexible, or project-based tasks, most respondents agreed. This shows that they correctly understand the nature of gig jobs. Many respondents also agreed that online platforms are the main medium for gig workers. This indicates that people recognize the importance of digital platforms in providing gig work opportunities.

**Interpretation:** Overall, the data shows that respondents have a clear understanding of gig work and are aware that online platforms play an important role in this type of employment.

**2. AI as a Tool for Empowerment:** The next four questions ask for what workers think about AI as a tool for empowerment. Most respondents agreed that AI tools help them complete their gig work more efficiently. Many selected Agree or Strongly Agree, showing that they believe AI improves their work performance. For productivity and reduction of manual effort, most responses were again positive. This means respondents feel that AI tools help them work faster and reduce manual work. When asked whether AI has increased their income or earning potential, responses were more mixed. Although many agreed, some selected Neutral or Disagree. This shows that while AI improves efficiency, it does not increase income for everyone. Similarly, most respondents agreed that AI helps them access more work opportunities. This suggests that AI-based platforms connect workers with clients more effectively.

**Interpretation:** Overall, the data shows that AI is seen as a helpful and empowering tool. It improves efficiency, productivity, and work opportunities. However, its impact on income is different for different workers.

**3. AI as a Threat or Replacement Risk:** The last three questions were based on AI as a threat or replacement risk for gig workers. When asked whether AI can replace some work tasks in the future, many respondents agreed. This shows that they are aware that AI may take over some parts of their work. For the question about whether AI will reduce demand for their type of gig work, responses were mixed. Some respondents agreed and showed concern, while others selected Neutral, which shows uncertainty about the future impact. Most respondents strongly agreed that AI is both an opportunity and a possible threat. This shows that gig workers have a balanced view of AI.

**Interpretation:** The data shows that respondents see both positive and negative sides of AI. They believe AI helps them in their work, but they are also aware that it may replace some tasks and affect job security in the future.

### **Conclusion:**

The present study examined whether Artificial Intelligence (AI) acts as a tool of empowerment or a threat of replacement for gig workers. Based on the responses collected from 125 respondents, it can be concluded that gig workers are generally familiar with the concept of gig work and recognize that it involves short-term, flexible, and platform-based tasks. The findings indicate that online platforms play a crucial role in enabling gig employment opportunities. The data further suggests that a significant proportion of respondents agree that AI tools enhance efficiency, increase productivity, and reduce manual effort in gig-related tasks. Many participants also perceive AI as contributing positively to their earning potential and expanding access to work opportunities. This reflects that AI, when used as a supportive tool, can improve performance and create new avenues for income generation within the gig economy. However, the study also highlights underlying concerns. A noticeable number of respondents believe that AI has the potential to replace certain work tasks in the future and may reduce demand for specific types of gig work. This indicates that while AI provides operational advantages, it simultaneously raises

questions regarding long-term job security. Overall, the research concludes that AI is perceived both as an opportunity for empowerment and as a potential threat. It enhances efficiency, income possibilities, and accessibility to work, yet it also introduces uncertainty regarding future employment stability. Therefore, the future of gig work is not defined by replacement alone but by adaptation. Gig workers who continuously upgrade their skills and effectively integrate AI tools into their workflow are more likely to benefit from technological advancements rather than be displaced by them.

In conclusion, AI is not purely a replacement mechanism but a transformative force. Its impact on gig workers depends largely on skill development, digital adaptability, and the evolving nature of platform-based employment.

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