A STUDY ON SYNERGY AI AND FINTECH IN THE DIGITAL GIG ECONOMY IN INDIA

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Abstract:

The digital gig economy in India has witnessed rapid growth, driven by technological advancements and an increasing reliance on digital platforms for freelance and short-term employment. This study explores the synergy between Artificial Intelligence (AI) and Financial Technology (Fintech) in transforming the gig economy. AI boosts productivity for gig workers, while fintech provides secure payments, credit and financial tools.

This study examines how these technologies are reshaping the gig economy landscape in India, identifying opportunities and challenges in their implementation. To gain a comprehensive understanding, data has been collected from both gig workers and the general public to analyse perspectives on the role of AI and FinTech in the gig economy. This dual approach helps in identifying:

• How gig workers utilize AI-powered financial tools.

• Public perceptions of AI and FinTech's impact on digital labour.

The findings highlight the potential of AI-driven financial solutions in enhancing economic inclusion and job security for gig workers. While continuing to rebuild the digital reconstruction of India, the synergy between AI and Fintech is expected to play a crucial role in driving the future of the digital gig economy.

Keywords: Digital Gig Economy, Artificial Intelligence (AI), Financial Technology (Fintech), Smart financial solution.

Introduction:

The term "gig" in the gig economy has its origins in the art of music. A gig refers to a performance by a musician or group, typically part of a short-term tour, ending once the concert concludes. A person who works (implements) on the project he took for a certain period of time is one of the main components of the gig economy. This phrase brings to mind a work environment that we often hear about nowadays, especially in modern times: freelance work. Gig economy has been around for a while, especially the fact that a large part of the world switched to remote working mode for a short time during the covid-19 pandemic, and many people lost their jobs due to this, attracted more people to the gig economy. It should also be noted that the gig economy provides jobs in the traditional environment as well as in the digital environment. We will discuss the digital gig economy here.

Technology and the gig economy: The digital gig economy is one with technology. Technology is key to the development of the gig economy. Communication technologies, blockchain, big data, artificial intelligence (AI) and mobile technology occupy an important place in the gig economy. AI, Communication and Mobile technologies are transforming the gig economy. AI automates tasks while communication tools connect workers with clients. Mobile technology allows gig workers to manage tasks, communicate and access services efficiently using GPS, voice and data.

Role of Artificial Intelligence (AI) in Digital Gig Economy: The digital gig economy involves freelancers offering services or sharing assets through digital platforms, becoming integral to society. AI plays a key

role in transforming how work is organised, delivered, and managed. In fintech, AI automates tasks, enhances services, mitigates risks, and boosts productivity, prompting traditional banks to adopt these innovations.

Benefits of Fintech for the Gig Economy:

1) Increased Access to Financial Services
2) Improved Efficiency in Payments
3) Enhanced Security and Fraud Prevention Measures
4) Improved Record Keeping

Review of Literature:

1. **Gang Kou & Yang Lu, 2025:** The researcher suggests improving fintech by integrating real world data and balancing the benefits and drawbacks of emerging technologies to enhance their integration into financial operations.

2. **Ghoddusi et al. 2019; Cao 2022; Song et al. 2023:** The researcher notes that start-ups have popularised fintech with smartphone adoption driving mobile access to financial services. Key advancements like blockchain, mobile payments, digital lending etc. focus on decentralisation and user centric services.

3. **Timothy Papandreou, 2024**: Found that the gig economy once linked to entertainment or low-wage jobs is evolving due to AI advancements. AI enables new work opportunities offering flexibility and autonomy. Younger adults use platforms like Uber, Lyft, Doordash etc. while white-collar professionals embrace platforms like Toptal, Fiverr and Upwork.

4. **O'Dair and Owen 2019; Israel et al. 2020; Cao et al. 2021:** Explore that fintech evolved over time, starting in 1918 with the Federal Reserve's wire-transfer network. Key milestones include the 1967 launch of the first ATM, the 1970s creation of NASDAQ and the 1980s rise of online banking, all shaping modern financial transactions and services.

Objectives:

1. To analyse the impact of AI on the digital gig economy

2. To examine the role of Fintech in financial inclusion for gig workers
3. To explore the synergy between AI and Fintech in the gig economy
4. To evaluate the challenges faced in implementing AI and Fintech solutions
5. To study the future prospects of AI and Fintech in reshaping the gig economy

Research Methodology:

This study on the synergy between AI and Fintech in the digital gig economy in India follows a structured approach including research design, data collection, sampling techniques and data analysis to ensure comprehensive and reliable findings.

Research Design:

The study employs a **quantitative research design**, utilizing surveys to collect structured data from gig workers and public to analyse the impact of AI and Fintech in the digital gig economy.

Data Collection Methods

1. **Primary Data:**

   Survey Questionnaire: A structured questionnaire is administered to gig workers across different digital platforms in India to collect data on their awareness, usage, and perception of AI and Fintech.

2. **Secondary Data:** Literature from academic journals, research papers, industry reports, and case studies on AI, Fintech, and the gig economy.
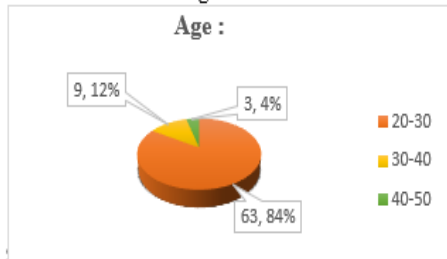
DATA ANALYSIS

1. **Demographics**

- **Age Group**:

   The table and chart given below shows that the respondents are primarily aged 20-30, indicating that younger individuals are more involved in the gig economy in India. As compare with other age group of people.

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Table 1. Age

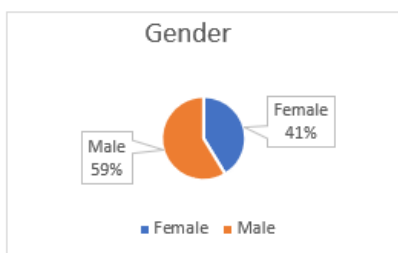| Age	No. of person
20-30	63
30-40	9
40-50	3

Chart 1: Age

- **Gender**: The gender distribution is mostly balanced, with a slight majority of male respondents. As per the given data.

Table 2: Gender

| Gender	
Female	31
Male	44

Source: Primary data

Chart 2: Gender

2. Awareness of the gig economy:

Table 3: Awareness

Options	Are you aware of the gig economy (freelancing, ride-sharing, food delivery, etc.)?
Maybe	8
No	10
Yes	26

As per reports, a majority (around 70%) of respondents are aware of the gig economy, which includes freelancing, ride-sharing, etc. This suggests high level of awareness among younger individuals in India regarding gig-based work opportunities.

Chart 3: Awareness
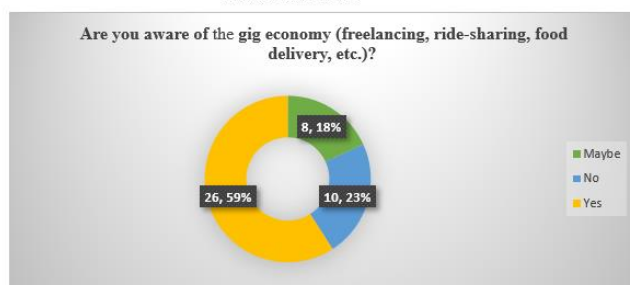
Source: Primary data

3. Distribution of Gig Economy Participation Among Respondents

Here, the given table and chart represent that a significant majority (44 responses) have not worked in the gig economy, while a smaller group (31 responses) have experience with gig work.

Table 4: Participation among respondents

Options	Have you ever worked in the gig economy? (freelance, short-term, or contract-based work)?
No	44
Yes	31

Chart 4: Participation among respondents
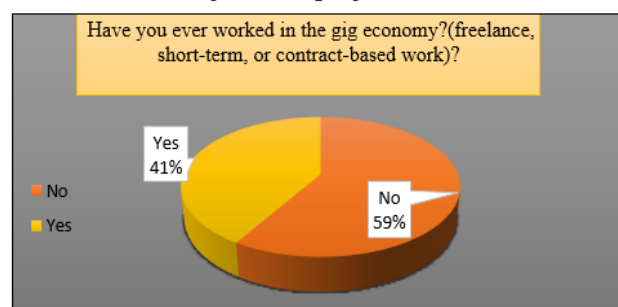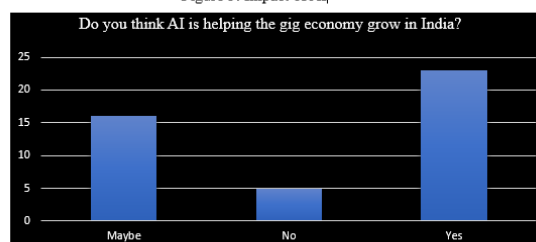

Source: Primary data

4. Impact and Usage of AI and Fintech in the Gig Economy:

a. Perception of AI's Role: The table show that majority of respondents believe AI is driving growth in India's gig economy.

Table 5: Impact of AI

| Options	Do you think AI is helping the gig economy grow in India?
Maybe	16
No	5
Yes	23

Figure 5: Impact of AI

Source: Primary data

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b. Frequency of AI-related FinTech Usage: The table which is given below shows that many respondents use FinTech services regularly (daily or occasionally), indicating an increasing reliance on digital financial tools in managing income in the gig economy.

Table 6: Usage of fintech services

Options	How often do you use FinTech services (UPI, digital wallets, online banking, etc.)?
Daily	29
Never	3
Occasionally	7
Weekly	5

Chart 6: Usage of fintech services

How often do you use FinTech services (UPI, digital wallets, online banking, etc.)?
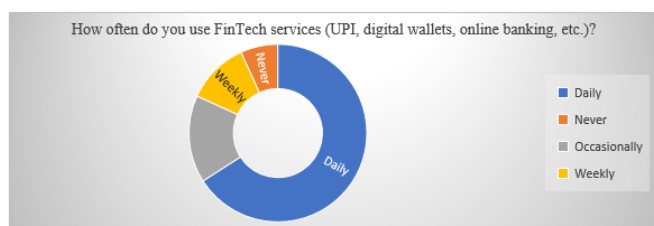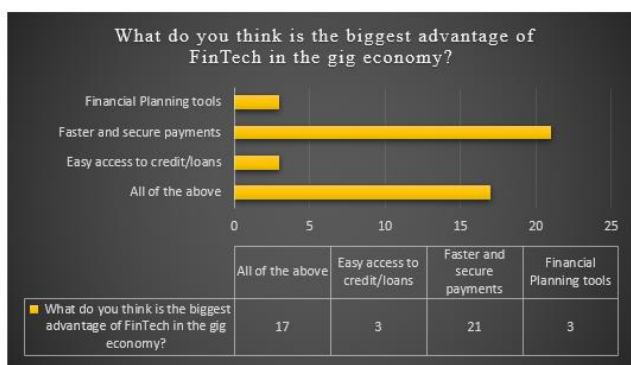
Source: Primary data

5. **Advantages of FinTech in the Gig Economy**: Figure 7 indicates that the most commonly advantage of FinTech in the gig economy is faster and secure payments, with 21 respondents highlighting this benefit. Additionally, "All of the above" was chosen by 17 respondents, indicating a broader appreciation for multiple FinTech benefits. Easy access to credit/loans and Financial Planning tools each received 3 responses, these are seen as less advantages compared to payment speed and security.

Figure 7: Advantages of FinTech in the Gig Economy

What do you think is the biggest advantage of FinTech in the gig economy?

	All of the above	Easy access to credit/loans	Faster and secure payments	Financial Planning tools
What do you think is the biggest advantage of FinTech in the gig economy?	17	3	21	3

Source: Primary data

6. **Do Gig Workers Believe AI-driven Fintech Can Improve Their Financial Management?**
Chart 8 shows that 59% of respondents believe AI-driven fintech improves financial management for gig workers, 25% are uncertain and 16% disagree.

Options	Do you believe AI-driven fintech solutions can improve financial management for gig workers?
No	7
Not sure	11
Yes	26

Table 8: Perception about AI-Driven Fintech Solutions.

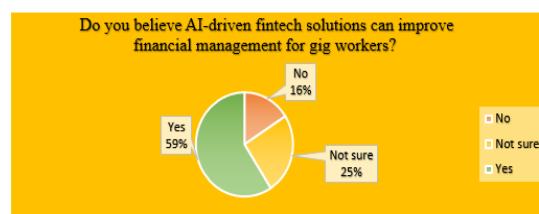Do you believe AI-driven fintech solutions can improve financial management for gig workers?

Chart 8: AI driven Fintech solutions

Source: Primary data

7. **AI & Fintech Impact on Gig Economy:**
The data shows that Faster and Secure Payment Processing was the most frequently mentioned, followed by Job Matching and Skill Development both crucial for gig workers.

Table 9: AI & Fintech Impact on Gig Economy

| Area	Sum of No. of selection
Access to credit and loans	7
Faster and secure payment processing	22
Fraud prevention and security	17
Job matching and skill development	22

Figure 9: AI & Fintech Impact on Gig Economy

Sum of No. of selection
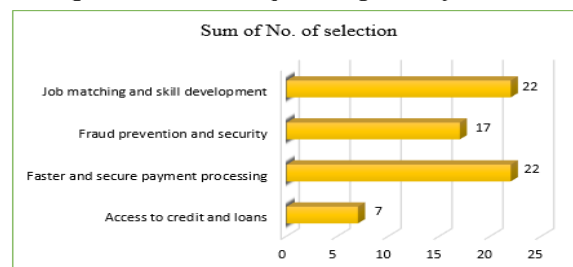
Source : Primary data

8. **Payment Methods in Gig Economy:** The table show that most gig workers prefer UPI/Digital Wallets for

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payments with 20 respondents using digital method, 7 using cash and 4 opting for bank transfers.

Table 10: Payment Methods in Gig Economy

Options	Count of How do you receive payments for your gig work?
Bank Transfer	4
Cash	7
UPI/Digital Wallets	20

Figure10: Payment Methods in Gig Economy
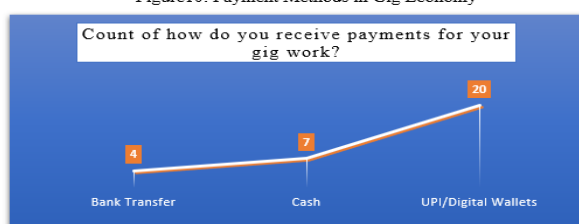
Source: Primary data

9. **Loan and Credit Challenges for Gig Workers:** The majority of gig workers which is 22 have faced challenges in getting loans or credit due to irregular income, while 8 have not faced any issues, and 1 experiences challenges occasionally.

Table 11: Loan and Credit Challenges for Gig

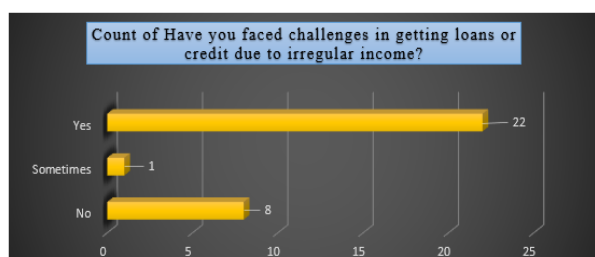| Options	Count of Have you faced challenges in getting loans or credit due to irregular income?
No	8
Sometimes	1
Yes	22

Source: Primary data

Figure 11: Loan and Credit Challenges for Gig Workers

10. **Key Financial Challenges for Gig Workers :**
According to table and figure;

Table 12: Key Financial Challenges for Gig Workers

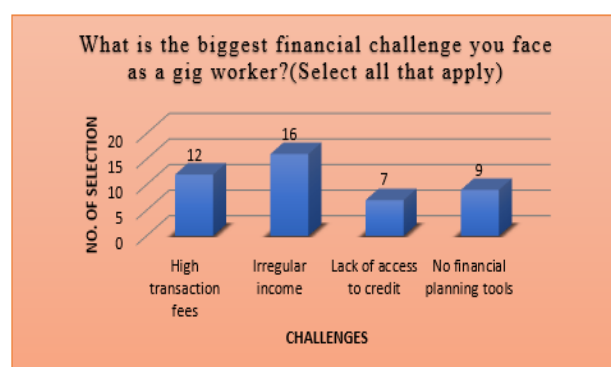| Challenges	What is the biggest financial challenge you face as a gig worker?(Select all that apply)
High transaction fees	12
Irregular income	16
Lack of access to credit	7
No financial planning tools	9

Figure 12: Key Financial Challenges for Gig Workers

Sources: Primary data

The data shows that gig workers biggest financial challenges are Irregular income (16 responses), High transaction fees (12), No financial planning tools (9) and Lack of access to credit (7).

11. **Impact of AI and FinTech on Financial Stability :** Data shows that, Most respondents (25 responses) believe that AI and FinTech significantly improved their financial stability, while 6 feel it has improved somewhat.

Table 13: Impact of AI & FinTech on Financial Stability

Options	Count of Do you think AI and FinTech have improved your financial stability?
Somewhat	6
Yes, A lot	25

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Chart 13: Impact of AI and FinTech on Financial Stability
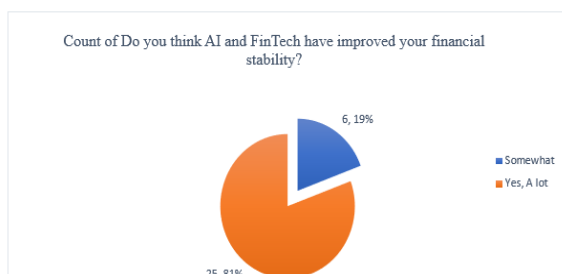
Source: Primary data

12. Key Areas AI and FinTech Can Improve in the Gig Economy:

Table 14: Key Areas AI and FinTech

Area	Sum of No. of selection
Access to credit and loans	12
Faster and secure payment processing	7
Fraud prevention and security	20
Job matching and skill development	9

Finding:

1. **High Dependency on FinTech:** Gig workers in India are heavily reliant on FinTech services to manage their income, with services like UPI and digital wallets being most commonly used.

2. **AI as a Positive** Force: Most respondents believe that AI is beneficial for the gig economy, especially in areas like job matching, security, and payment processing.

3. **Challenges:** Gig workers face financial challenges such as irregular income, lack of credit access etc.

4. **Opportunities for Improvement:** There is a clear opportunity for AI and FinTech to enhance the gig economy in India by improving payment systems, offering better financial planning tools etc.

Limitations

1. This research study is conducted for academic purpose not for commercial purpose.

2. This study limit to almost 75 respondents.

The data shows that Fraud prevention (20 responses) is the top priority, and payment processing (7) is the lowest priority.

Figure 14: Key Areas AI and FinTech

Source: Primary data

3. This study is based on varieties of responses provided by the respondents as per their knowledge, scope, interest, experiences and level of understandings.

Conclusion:

1. **AI and FinTech are Key Drivers:** The integration of AI and FinTech is significantly enhancing the digital gig economy in India by providing smarter financial solutions, increasing productivity, and offering secure payment processing.

2. **Gig Workers Rely on Digital Financial Tools**: Gig workers heavily depend on digital financial tools, such as UPI and digital wallets, to manage their income and ensure smooth transactions, highlighting the importance of these technologies.

3. **Financial Challenges Persist:** Despite the advancements, gig workers face major financial challenges, such as irregular income, high transaction fees, and limited access to credit. These issues highlight the need for tailored financial solutions.

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4. **AI's Role in Job Matching and Security:** AI is widely perceived as a positive force in the gig economy, with many respondents emphasizing its role in improving job matching, skill development, and security measures for workers.

5. **AI and FinTech Improve Financial Stability:** A majority of respondents believe that AI and FinTech have significantly enhanced their financial stability, reflecting the technologies' potential to address the unique needs of gig workers.

6. **Potential for Future Growth:** There is considerable room for improvement in areas such as access to credit, financial planning tools, and fraud prevention, where AI and FinTech can play a transformative role in making the gig economy more sustainable.

7. **Need for Regulatory and Skill Development:** As AI and FinTech continue to evolve, addressing challenges like regulatory compliance, data privacy, and the shortage of skilled professionals will be essential for their full potential to be realized in the gig economy.

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