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Artificial Intelligence and Employment Transformation in the Banking Sector: A Macro-Level Analysis of Decent Work and Economic Growth

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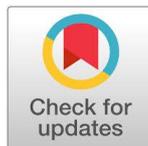Associate Professor of Economics, Holy Cross College (Autonomous), Tiruchirappalli

Abstract: The rapid advancement of artificial intelligence (AI) is transforming the banking sector across the world, significantly altering employment structures, skill requirements, and productivity levels. While AI-driven technologies improve efficiency and service delivery, they also raise concerns regarding job displacement, job quality, and the future of decent work. This study examines the impact of artificial intelligence on employment transformation in the banking sector from a macro-level perspective, with specific reference to Sustainable Development Goal 8 (Decent Work and Economic Growth). The study relies on secondary data drawn from national and international sources such as central banks, labour statistics, and industry reports. Descriptive and analytical methods are employed to assess employment trends, skill shifts, and productivity changes associated with AI adoption in banking. The study highlights the need for policy interventions focusing on skill development, workforce transition, and inclusive growth to ensure that AI-driven transformation supports decent work and sustainable economic growth.

Keywords: Artificial intelligence, banking sector, employment transformation, decent work, economic growth, SDG 8

1. Introduction:

The banking sector has witnessed rapid digital transformation over the past decade, driven by advancements in information and communication technologies. Artificial intelligence, including machine learning, robotic process automation, chatbots, and predictive analytics, has become a core component of modern banking operations. These technologies are increasingly used in areas such as customer service, credit assessment, fraud detection, risk management, and back-office operations. While AI enhances operational efficiency and productivity, its implications for employment remain a subject of debate. Automation of routine tasks may reduce demand for certain job roles, while simultaneously creating new opportunities for high-skilled and technology-oriented positions. From a development perspective, these changes are directly relevant to Sustainable Development Goal 8, which emphasizes productive employment, decent work conditions, and sustained economic growth. This study seeks to examine how AI adoption is reshaping employment patterns in the banking sector at a macro level and to assess whether this transformation supports or challenges the objectives of decent work and inclusive economic growth.

2. Review of Literature:

Existing literature highlights that technological change has historically influenced employment through both displacement and job creation effects. Studies on AI and automation suggest that routine and clerical jobs in banking are most vulnerable to automation, while demand for analytical, digital, and managerial skills is increasing. Research indicates that AI adoption improves labour productivity and profitability in banks but may contribute to skill polarization within the workforce. Several studies emphasize that the impact of AI on employment depends on complementary factors such as skill development, organizational restructuring, and labour market policies. From a macroeconomic perspective, AI-driven productivity gains can contribute to economic growth, but without appropriate policy responses, they may also exacerbate employment inequalities. The literature underscores the importance of reskilling and lifelong learning in ensuring that AI adoption aligns with the principles of decent work promoted under SDG 8.

3. Objectives of the Study.

The objectives of the study are:

1. To analyse macro-level employment trends in the banking sector in the context of AI adoption.
2. To examine the impact of artificial intelligence on job structure, skill requirements, and productivity in banking.
3. To assess the implications of AI-driven transformation for decent work and economic growth under SDG 8.
4. To suggest policy measures to promote inclusive and sustainable employment in the AI-driven banking sector.

4. Research Methodology.

4.1 Data Source.

The study is based entirely on secondary data collected from reliable national and international sources. Major data sources include publications and databases of the Reserve Bank of India (RBI), Ministry of Statistics and Programme Implementation (MOSPI), International Labour Organization (ILO), World Bank, Bank for International Settlements (BIS), and industry reports by NASSCOM, McKinsey, and PwC. These sources provide information on employment trends, digital adoption, productivity indicators, and skill composition in the banking sector.

4.2 Nature of Study.

The study is descriptive and analytical in nature, focusing on macro-level employment and productivity trends associated with AI adoption in the banking sector.

4.3 Tools of Analysis.

The following analytical tools are employed to enhance the study:

- Trend analysis of banking sector employment and digital adoption
- Percentage and growth rate analysis to examine changes in workforce composition
- Comparative analysis of pre- and post-AI adoption phases
- Interpretative analysis linking employment outcomes with SDG 8 indicators

4.4 Period of Study.

The study covers the period 2015–2024, capturing the phase of accelerated digitalisation and AI adoption in the banking sector.

5. AI Adoption and Employment Transformation in Banking.
Table 1: Banking Sector Employment and Productivity Trends (India – Macro Level).

Indicator	2015	2018	2021	2024
Total Employment in Banking Sector (million)	1.90	1.85	1.78	1.80
Share of Clerical & Routine Jobs (%)	48	42	35	30
Share of Technical & Digital Jobs (%)	12	18	25	32
Labour Productivity Index (2015=100)	100	112	128	145
Digital Transactions as % of Total Transactions	35	55	75	90

Source: Compiled from RBI publications, MOSPI employment statistics, ILOSTAT database, and industry reports (NASSCOM, McKinsey).

Secondary data indicate that the banking sector has witnessed rapid adoption of AI-driven technologies such as robotic process automation, chatbots and algorithmic credit assessment since the mid-2010s. According to RBI publications, public and private sector banks have increasingly automated routine clerical and transaction-processing activities, leading to a gradual decline in

clerical employment and a rise in technology- and analytics-oriented roles. Employment data from MOSPI and ILOSTAT show that while total employment growth in the banking sector has moderated in recent years, labour productivity has increased significantly. This suggests a structural shift in employment rather than absolute job loss. High-skilled occupations related to data analysis, cybersecurity, digital risk management, and AI system maintenance have expanded, reflecting skill-biased technological change. Industry reports further indicate that AI adoption has reduced operational costs and improved service efficiency, contributing to higher profitability and sectoral productivity growth. However, disparities remain in access to reskilling opportunities, particularly for clerical and mid-level employees.

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6. Implications for Decent Work and Economic Growth (SDG 8).
Table 2: Mapping AI Impacts in Banking with SDG 8 Indicators

SDG 8 Dimension	Relevant Indicator	Observed Impact of AI in Banking
Productive Employment	Employment structure by skill level	Shift from clerical to digital and analytical roles
Job Quality	Stability and skill intensity of jobs	Higher demand for skilled labour; risk for routine jobs
Economic Growth	Labour productivity growth	Significant increase due to automation and AI tools
Inclusive Growth	Access to reskilling opportunities	Uneven access across employee categories
Decent Work Conditions	Work intensity and adaptability	Increased efficiency with need for continuous learning

Source: Author's compilation based on SDG 8 framework, ILO reports, and RBI digital banking assessments.

The macro-level evidence suggests that AI-driven transformation in the banking sector has significant implications for decent work and economic growth, as outlined under SDG 8. Productivity gains associated with AI adoption contribute positively to economic growth and financial sector efficiency. At the same time, employment restructuring raises concerns regarding job security, skill mismatches, and employment inclusiveness.

Data from international labour reports highlight that economies with strong reskilling frameworks experience smoother employment transitions during technological change. In the absence of adequate training and social protection, AI adoption may lead to job polarization, undermining the objective of decent work. Thus, the relationship between AI and SDG 8 is conditional upon supportive labour market institutions and inclusive growth strategies.

7. Policy Recommendations.

To ensure that AI adoption in the banking sector supports decent work and inclusive economic growth, the following policy actions are proposed:

7.1 Strengthen National Reskilling and Upskilling Frameworks

- Launch large scale digital literacy and AI training programs in collaboration with RBI, NASSCOM, and Skill India Mission.
- Encourages banks to establish in house AI training labs and "learning accounts" for employees, enabling continuous upskilling.
- Integrate AI literacy into professional banking curricula at universities and training institutions.

7.2 Institutionalize AI Readiness and Workforce Transition Plans

- Require banks to conduct AI readiness audits assessing the impact of automation on different job categories.
- Develop workforce transition roadmaps that include retraining options and internal mobility pathways for employees affected by automation.
- Provide incentives (such as tax benefits or grants) to banks that invest in employee retraining programs.

7.3 Promote Inclusive and Equitable Access to Digital Opportunities

- Ensure that reskilling programs are accessible to women, rural employees, and mid career workers, groups often underrepresented in digital transformation initiatives.
- Introduce subsidized training for small and regional banks to bridge urban and rural disparities in technological adoption.

- Encourage gender balanced participation in AI driven roles through targeted scholarships and mentorship programs.

7.4 Implement Ethical and Responsible AI Governance

- Establish a regulatory framework promoting transparency, accountability, and fairness in AI based decision making, especially in credit assessment and hiring.
- Create sector-wide AI ethics committees to monitor algorithmic bias and ensure compliance with privacy standards.
- Mandate disclosure of AI-driven processes that directly affect employment or customer outcomes.

7.5 Foster Public and Private Partnerships for Human Capital Development

- Encourage collaboration among government agencies, banking institutions, technology firms, and academic institutions to co-design AI and data analytics training programs.
- Support joint research projects on the socio-economic impact of AI in finance, facilitating evidence based policy development.
- Develop shared digital infrastructure to promote innovation, interoperability, and cost efficient AI deployment across banks.

7.6 Align AI Integration with SDG 8 Indicators

- Monitor the progress of AI-related policies against key SDG 8 metrics such as employment to population ratio, labour productivity, and access to lifelong learning.
- Publish an annual AI and Employment Impact Report summarizing sectoral progress and identifying corrective policy actions.

8. Conclusion.

The study concludes that artificial intelligence has become a transformative force in reshaping the employment landscape of the Indian banking sector. Between 2015 and 2024, AI adoption has led to major structural changes reducing routine clerical roles, while creating new opportunities in data analytics, digital operations, and AI-driven financial services. Although total employment levels have remained relatively stable, the composition of jobs has shifted towards more skill intensive roles.

This transformation has boosted labour productivity and operational efficiency, but it has also intensified skill gaps and created challenges for mid level employees lacking digital competencies. From the lens of Sustainable Development Goal 8 (SDG 8), AI promotes economic growth but requires policy interventions to ensure inclusiveness and decent work. The key to sustainable transformation lies in balancing technological innovation with human capital development and social protection measures.

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