

Changing Nature of Industrial Relations in the Era of Digitalisation

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Abstract

Industrial relations traditionally focused on the relationship between employers, employees and trade unions within physical workplaces. However, digitalisation has significantly changed the structure, process and meaning of industrial relations. The rise of automation, artificial intelligence, digital platforms, remote work, algorithmic management and gig work has transformed employment relations across the world. Earlier, industrial relations were mainly concerned with collective bargaining, wages, working conditions, strikes and labour welfare. In the digital era, new concerns such as platform worker rights, data privacy, algorithmic control, digital surveillance, skill displacement, remote employee engagement and online unionisation have become important.

This research paper examines the changing nature of industrial relations in the era of digitalisation. It analyses how technology has altered employment relationships, bargaining power, worker participation, workplace communication and labour regulation. The paper is based on secondary data from ILO, OECD, World Bank, academic literature and labour reports. The study finds that digitalisation has created both opportunities and challenges. It has improved productivity, flexibility and communication, but has also increased job insecurity, surveillance, work intensity and inequality. The paper concludes that industrial relations must shift from traditional conflict-based models to more inclusive, technology-sensitive and rights-based models of social dialogue.

Keywords: Industrial Relations, Digitalisation, Gig Economy, Artificial Intelligence, Trade Unions, Collective Bargaining, Platform Work, Labour Relations

1. Introduction

Industrial relations refers to the relationship between employers, employees, trade unions and the state in the world of work. It includes collective bargaining, labour welfare, employee participation, dispute settlement, wage negotiation and workplace democracy. In the traditional industrial system, employment was mostly stable, workplace-based and governed by formal labour laws. Workers were usually attached to a single employer, and trade unions played an important role in protecting workers' interests.

In the twenty-first century, digitalisation has changed this traditional structure. Digitalisation means the use of digital technologies such as computers, internet, artificial intelligence, big data, cloud platforms, robotics and mobile applications in business and work processes. These technologies have created new forms of work such as remote work, platform work, freelancing, online outsourcing and app-based employment. As a result, the employer-employee relationship has become more flexible but also more uncertain.

The era of digitalisation has changed not only the way work is performed but also the way workers are controlled, monitored and represented. Algorithmic management is now used by many digital platforms to allocate work, measure performance and rate workers. Remote work has reduced physical workplace interaction, while online communication has replaced many face-to-face industrial relations practices. Trade unions are also using digital tools for organising workers, communication and collective action.

Therefore, the changing nature of industrial relations in the era of digitalisation is an important area of study. It is necessary to understand how digital technology is reshaping labour relations and what new policies are required to protect workers' rights while supporting business innovation.

2. Objectives of the Study

The main objectives of this research paper are:

1. To understand the concept of industrial relations in the context of digitalisation.
2. To examine how digital technologies are changing employer–employee relationships.
3. To study the impact of digitalisation on trade unions and collective bargaining.
4. To analyse the role of gig work, platform work and remote work in changing industrial relations.
5. To identify the major challenges created by digitalisation for workers and employers.
6. To suggest measures for strengthening industrial relations in the digital era.

3. Research Questions

This study is guided by the following research questions:

1. How has digitalisation changed the traditional nature of industrial relations?
2. What is the impact of digital platforms and gig work on employment relationships?
3. How are trade unions responding to digital transformation?
4. What challenges do workers face due to algorithmic management and digital surveillance?
5. What policy measures are needed for fair and inclusive industrial relations in the digital era?

4. Hypotheses

H0: Digitalisation has no significant impact on the nature of industrial relations.

H1: Digitalisation has significantly changed the nature of industrial relations by transforming employment relationships, collective bargaining, worker representation and workplace communication.

5. Research Methodology

This research paper is based on a descriptive and analytical research design. It uses secondary sources of data to study the changing nature of industrial relations in the digital era.

5.1 Nature of the Study

The study is qualitative and descriptive in nature. It focuses on understanding the major changes in industrial relations due to digitalisation.

5.2 Sources of Data

The study uses secondary data from:

- International Labour Organization reports
- OECD employment and labour reports
- World Bank and ITU digital access data
- Academic journals and books
- Government labour reports

- Articles on gig economy, AI and platform work

5.3 Method of Analysis

The collected data has been analysed through thematic analysis. Major themes such as platform work, remote work, algorithmic management, collective bargaining, trade union decline and digital worker rights have been discussed.

5.4 Limitations of the Study

The study is based only on secondary data. Primary data from workers, employers and unions has not been collected. The findings are general in nature and may vary across countries and sectors.

6. Review of Literature

Industrial relations have traditionally been studied through three major approaches: unitary, pluralist and Marxist. The unitary approach views the organisation as a single team with common goals. The pluralist approach recognises conflict between employers and employees and supports collective bargaining. The Marxist approach sees industrial relations as a reflection of class conflict between capital and labour.

Dunlop's Industrial Relations System theory explains industrial relations as a system involving three actors: workers and their organisations, employers and their organisations, and government agencies. These actors operate within technological, economic and political contexts. In the digital era, technology has become one of the most powerful forces influencing this system.

The International Labour Organization has highlighted that digital labour platforms are transforming the world of work by changing how work is organised, allocated and monitored. Digital platforms have created employment opportunities, but they have also raised questions about employment status, wages, social security and worker protection.

The OECD has discussed the importance of social dialogue and collective bargaining in the age of artificial intelligence. According to OECD analysis, AI can improve productivity and job satisfaction, but it can also create risks related to privacy, bias, surveillance and job displacement. Therefore, worker participation in technological change is necessary.

Several scholars argue that digitalisation has weakened traditional trade union power because many digital workers are self-employed, scattered and not attached to a single workplace. However, new forms of digital unionism are also emerging. Workers are increasingly using social media, online campaigns and digital platforms to organise collective action.

The literature shows that digitalisation has not ended industrial relations; rather, it has changed its form. The focus has shifted from factory-based conflict to platform-based control, data rights, algorithmic fairness and digital participation.

7. Research Gap

Although many studies have examined industrial relations and digitalisation separately, there is still a need to study how digitalisation is changing the overall structure of industrial relations. Most traditional industrial relations theories were developed in the context of factories, formal employment and physical workplaces. They do not fully explain platform work, remote work, artificial intelligence and algorithmic management.

There is also limited research on how trade unions can represent gig workers, freelancers and remote workers. Another important gap is the lack of clear labour regulation for digital platform workers. Many platform workers are treated as independent contractors, which limits their access to social security, collective bargaining and labour protection.

Therefore, this research paper attempts to fill this gap by analysing the changing nature of industrial relations in the digital era and suggesting future directions for fair labour relations.

8. Data Table: Digitalisation and Industrial Relations Indicators

Indicator	Earlier/Traditional Pattern	Digital Era Pattern	Evidence / Recent Data	Impact on Industrial Relations
Internet use	Limited digital connectivity; work mainly physical	Wider internet access supports remote work, platform work and online communication	Global internet use reached about 69% of population in 2023 according to World Bank/ITU data	Enables digital workplaces, online bargaining and virtual employee participation
Digital labour platforms	Work organised mainly through direct employer–employee relationship	Work allocated through apps and online platforms	ILO reported that online platforms increased from 142 in 2010 to over 777 in 2020	Creates new employment forms but weakens traditional employer accountability
Union density	Stronger union presence in many formal sectors	Declining union membership in many countries	OECD reported union density in OECD countries declined from about 30% in 1985 to 15% in 2023/24	Weakens traditional collective bargaining power
Collective bargaining	Mainly workplace-based and face-to-face	Increasing need for digital and sector-level bargaining	OECD argues social dialogue is important for managing AI-related workplace change	Bargaining agenda now includes AI, surveillance, data and reskilling
Work monitoring	Supervision by managers and supervisors	Algorithmic management, digital tracking and performance dashboards	Platform companies use algorithms for task allocation, ratings and performance control	Raises issues of fairness, transparency and worker autonomy
Employment status	Formal employee status more common in organised sectors	Growth of gig workers, freelancers and independent contractors	ILO identifies digital labour platforms as a major part of the platform economy	Creates disputes over worker rights, social security and benefits
Workplace communication	Physical meetings, notice boards and union meetings	Email, apps, video meetings, social media and online campaigns	Remote and hybrid work expanded strongly after COVID-19	Changes union organising and employee engagement methods
Skill requirements	Manual, technical and routine skills	Digital skills, data literacy and adaptability	OECD and ILO highlight the need for reskilling due to AI and automation	Training and lifelong learning become key industrial relations issues

9. Changing Nature of Industrial Relations in the Digital Era

9.1 From Stable Employment to Flexible Work

Traditional industrial relations were based on stable employment relationships. Workers usually worked for one employer for a long period. In the digital era, employment has become more flexible. Gig workers, freelancers and platform workers may work for multiple clients or platforms. This flexibility provides income opportunities but also creates insecurity.

Many platform workers do not receive the same benefits as regular employees. They may not have paid leave, pension, health insurance or job security. This creates a new challenge for industrial relations because the legal identity of the employer and employee becomes unclear.

9.2 From Physical Workplace to Digital Workplace

Earlier, industrial relations were mainly workplace-centred. Trade union meetings, negotiations and disputes happened in factories, offices and industrial units. Digitalisation has created virtual workplaces where employees may work from home or from different locations.

Remote work has increased flexibility and reduced commuting time. However, it has also created problems such as isolation, longer working hours, difficulty in separating work and personal life, and weaker collective identity among workers. As workers become physically separated, trade unions face difficulty in organising them.

9.3 From Human Supervision to Algorithmic Management

In traditional workplaces, managers and supervisors monitored employees. In the digital era, algorithms increasingly perform this function. Digital platforms use algorithms to assign tasks, calculate ratings, monitor performance and sometimes deactivate workers.

Algorithmic management can improve efficiency, but it can also create unfairness. Workers may not know why they received low ratings or why their account was blocked. Lack of transparency in algorithmic decision-making creates new forms of conflict between workers and management.

9.4 From Wage Bargaining to Data and Technology Bargaining

Traditional collective bargaining mainly focused on wages, working hours, bonus, safety and welfare. In the digital era, the bargaining agenda is expanding. Workers and unions now need to bargain over data privacy, digital surveillance, artificial intelligence, reskilling, remote work rules, platform transparency and algorithmic fairness.

This shows that industrial relations are moving from purely economic bargaining to technology-based bargaining. Trade unions must develop new knowledge and capacity to negotiate on digital issues.

9.5 From Traditional Unionism to Digital Unionism

Trade unions have historically organised workers through workplace meetings, membership drives and collective action. But digital workers are often scattered across cities and countries. This makes traditional union organising difficult.

At the same time, digital tools provide new opportunities for unions. Workers can use WhatsApp, Telegram, Facebook, X, online petitions and digital campaigns to organise. Digital unionism is emerging as a new form of worker representation. It allows workers to build solidarity even when they are not physically present in the same workplace.

9.6 From National Labour Regulation to Global Platform Regulation

Traditional industrial relations were mostly regulated by national labour laws. However, digital platforms often operate across borders. A worker may be located in one country, the client in another country and the platform in a third country. This creates legal complexity.

National labour laws are often unable to fully regulate global digital platforms. Therefore, there is a need for international labour standards, cross-border cooperation and updated labour legislation.

10. Major Challenges of Digitalisation in Industrial Relations

10.1 Job Insecurity

Automation and AI may replace routine jobs. Workers fear job loss due to machines and software. This creates anxiety and weakens trust between workers and employers.

10.2 Digital Divide

Not all workers have equal access to digital skills, internet and technology. Workers with low digital literacy may be excluded from new employment opportunities.

10.3 Weakening of Trade Unions

Gig workers and remote workers are difficult to organise. Declining union density reduces workers' collective bargaining power.

10.4 Surveillance and Privacy Issues

Digital tools allow employers to monitor employee activities, screen time, location and productivity. Excessive monitoring can reduce employee autonomy and dignity.

10.5 Algorithmic Bias

AI-based systems may produce biased decisions in recruitment, performance appraisal or work allocation. This can create discrimination and unfair treatment.

10.6 Lack of Social Security

Many platform workers do not receive social security benefits. This creates vulnerability in case of illness, accident, unemployment or old age.

11. Opportunities Created by Digitalisation

Digitalisation is not only a challenge; it also creates several opportunities for industrial relations.

First, digital tools can improve communication between workers and management. Online grievance systems, video meetings and digital HR platforms can make employee participation easier.

Second, digitalisation can create new employment opportunities through platform work, online freelancing and remote jobs.

Third, technology can improve workplace safety by reducing dangerous manual work and using automation in hazardous tasks.

Fourth, digital platforms can help trade unions reach workers faster and organise campaigns at lower cost.

Fifth, digitalisation can support transparency if algorithms and data systems are properly regulated.

12. Suggestions

1. Labour laws should be updated to include gig workers, platform workers and remote workers.
2. Digital platform workers should receive basic rights such as minimum wages, social security, grievance redressal and protection from unfair deactivation.
3. Trade unions should adopt digital tools for organising and communication.

4. Collective bargaining should include issues such as AI, data privacy, surveillance, reskilling and algorithmic fairness.
5. Employers should involve workers before introducing major technological changes.
6. Governments should promote digital skill development and lifelong learning.
7. Algorithmic management systems should be transparent and accountable.
8. Social dialogue among employers, workers and government should be strengthened.
9. Remote work policies should clearly define working hours, right to disconnect and health support.
10. International cooperation is needed to regulate global digital labour platforms.

13. Findings

The study finds that digitalisation has significantly changed the nature of industrial relations. The employer–employee relationship is no longer limited to formal and physical workplaces. Digital platforms, remote work and AI-based management have created new forms of employment and control.

The study also finds that trade unions face serious challenges in organising digital workers. However, digital tools also provide new opportunities for online mobilisation and digital unionism. Collective bargaining is also changing. It now includes issues beyond wages and working hours, such as data rights, algorithmic transparency and skill development.

The findings support the alternative hypothesis that digitalisation has significantly changed industrial relations.

14. Conclusion

The era of digitalisation has transformed the world of work and industrial relations. Traditional industrial relations were based on stable employment, physical workplaces, direct supervision and collective bargaining through trade unions. In contrast, the digital era is marked by flexible work, platform employment, remote working, algorithmic management and digital surveillance.

Digitalisation has created opportunities for productivity, flexibility and innovation, but it has also generated new risks such as job insecurity, weak social protection, declining union power and data-based control. Therefore, industrial relations must adapt to the digital age.

The future of industrial relations should be based on fairness, transparency, social dialogue and inclusive regulation. Workers should not be treated merely as data points in digital systems. They should have voice, dignity and rights in the digital workplace. A balanced approach is required where technology supports both business growth and decent work.

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