International Labour Organization

Algorithmic management in regular workplaces in India and South Africa: case studies in logistics and healthcare

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Algorithmic management in the logistics and healthcare sectors

Objective: understand the algorithmic management practices that are being adopted by regular workplaces in the logistics and healthcare sectors.

In particular, we investigate the degree of penetration and impact of the algorithmic management on work organisation, job quality and industrial relations in the two sectors.

▶ Comparison between European and non-European countries

- ▶ France & Italy (European)
- ▶ India & South Africa (non-European)

➢ Case study approach, qualitative, in-depth, semi-structured interviews and field visits at establishments.

Collaborating research institutions: Open Evidence; International Institute for Information Technology (Bangalore, India); University of Witwatersrand (Johannesburg, South Africa).

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Research questions

- What is the extent of adoption of digital tools and technologies, and algorithmic management practices in the logistics and health sector?

- What are the motivations for introducing it?

- How are these tools and practices affecting the different occupation levels, the organisation of work and the distribution of tasks?

- What are the impact of such practices on productivity and working conditions such as pay, autonomy and job security?

- What has been the role of social dialogue in the workplace?

Technologies used in the healthcare and logistics sector for work management

▶ Healthcare sector

- ▶ **Specific-purpose technology**
  - ▶ Hospital information system
  - ▶ Predictive data analytics
  - ▶ Customised software and apps
  - ▶ Telemedicine and digital healthcare platforms

- ▶ **General-purpose technology**
  - ▶ WhatsApp groups
  - ▶ Tablets
  - ▶ Templates (Notes) and other digital tools

▶ Logistics sector

- ▶ **Specific-purpose technology**
  - ▶ Robotics
  - ▶ Distributed system management technology
  - ▶ AI-powered route planning tools
  - ▶ Inventory/ Warehouse Management Software
  - ▶ Mobile scanning
  - ▶ Hand-held devices

- ▶ **General-purpose technology**
  - ▶ WhatsApp groups, other digital tools

Logistics: business model and work organisation

- Main motivation: **increase effectiveness and efficiency; improve service delivery**.

  - Improves efficiency through a **simplification and streamlining** of work processes.

- **Evidence is mixed in terms of job losses** linked to the introduction of these technologies:

  - …but there are possibilities for labour displacement in the future through increased work intensity, higher productivity, and concerns about quality of jobs

- Evidence is also mixed in terms of **redefinition of tasks and roles**.

  - **Standardised processes**, resulting in a simplification of tasks and better management of the scheduling and allocation of human workers.

  - **Upskilling** but without recognition in terms of occupational status and remuneration.

Logistics: job quality and industrial relations

- **Results diverse** and, in some cases, inconclusive.

- **Work intensification** observed in India and South Africa and algorithmic systems increased workload.

- In terms of **autonomy** for workers, evidence of reduced level of discretion but human decision-making remains very prominent

- **Evidence of monitoring and surveillance of workers**.

  - technologies analysed are used to **monitor workers and evaluate their performance**.

- Impact on **social environment** and algorithmic systems divided workers in shopfloor.

- There seems to have been **a lack of awareness and low level of involvement of trade unions** in the decisions concerning technological change.

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Healthcare: business model and work organisation

- **Efficiencies, cost and delivery of services seem to be main drivers** for adoption of these technologies in the healthcare sector.

- **Improved business delivery and work coordination**.

  - Some **evidence of improved work coordination processes**, reducing the time spent on non-medical tasks; increasing the time spent in caring activities

  - **In India and South Africa** the process of digitalisation has also improved workflow and health service delivery; better control over organisational performance.

  - **Mixed impact on job and skills** across establishments and countries.

  - Health care curricula will need to prepare professionals for an increasingly digitised health workspace.

Healthcare: job quality and industrial relations

- In terms of **autonomy** evidence is mixed.

  - In some cases, increased autonomy of specific categories (i.e. nurses)
  - In other cases reduced autonomy due to need of inputting information according to specific framework.

- The **quality of work** has not necessarily improved more **workload, more pressure and stress,** but there are differences between countries and establishments

- Like in logistics, there is **worker monitoring and evaluation**.

  - there is evidence of constant worker monitoring and performance evaluation, sometimes with an impact on pay, though the impacts differ between countries and establishments
  - Industrial relations: **consultations with workers** in adopting digital technology and automation in the hospitals has been **very limited in the two countries**.

Thank you

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