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Q4(c)

Critically assess the impact of technological advancement and automation on the nature of work and employment

UPSC Civil Services Mains 2024 · Sociology GS 1 · 10 marks · Sociology

Sociology - The Discipline: Modernity and social changes in Europe and emergence of sociology; Scope of the subject and comparison with other social sciences; Sociology and common sense.

Core demand of the question

- State how technological advancement and automation change the labour process, skills and employment quantity
- **Assess critically:** deskilling and reskilling, job loss and job shift, surveillance, inequality
- Use Marx, Braverman, Schumpeter or later labour sociology, with Indian illustrations

Revision summary

Marx treated machinery as part of the struggle over skill and the working day.

Braverman described deskilling and the split between conception and execution.

Automation can raise safety and productivity while polarising employment.

Surveillance and algorithmic allocation change the nature of remaining jobs.

Job creation in new sectors coexists with displacement in routine work.

Outcomes depend on ownership, policy and bargaining, not on technology alone.

Introduction

Technological advancement and automation change how work is done and who is employed to do it. Machines, software and now algorithms take over tasks that human labour once performed. Karl Marx already saw machinery as a weapon in the struggle over the working day and skill. A critical assessment must look at the nature of work, not only at a headline count of jobs lost or created.

Body

Changes in the nature of work

Automation can raise productivity and cut dangerous toil. It can also strip skill from the craft worker and place control with engineers and managers. Harry Braverman argued that scientific management and machinery deepen the separation of conception from execution. The worker becomes a watcher of a process designed elsewhere. Digital automation extends this to offices, warehouses and platforms. Call-centre scripts, barcode picking and ride-allocation are automated labour processes. Shoshana Zuboff and later writers on surveillance describe monitoring of keystrokes and location. The nature of employment shifts toward polarisation in many economies: some high-skill design jobs, many low-skill service jobs, and a squeezed middle of routine clerical and factory posts. Joseph Schumpeter's creative destruction captures the churn of firms and occupations. It does not by itself tell us

who bears the destruction.

Employment and a critical view

Optimistic accounts say that new technology creates new sectors, as the green revolution, IT services and logistics did in India. NASSCOM-era software work and platform delivery both exist because of technical change. Pessimistic accounts stress displacement of textile workers, clerical staff and, in the future, drivers. Both can be true in different segments. The critical sociological point is distribution. Those who own the machines and the data capture surplus. Those whose skills are coded into software lose bargaining power. Women in routine office work and in some manufacturing lines are often more exposed to replacement. Informal workers may not be replaced by robots so much as tied to them, as in warehouses that combine cheap labour with scanning systems.

Indian public debate on Industry 4.0, electric vehicles and artificial intelligence often repeats a skill-gap story. Skill matters. Without social security, unions and industrial policy, reskilling talk can become a way of blaming the displaced. Marx's machinery chapter still helps: technology is not a neutral spirit. It is introduced under definite property relations. Automation can shorten necessary labour. Under present relations it often lengthens control and fragments employment into contracts and gigs.

A critical assessment therefore grants gains in productivity and safety, and then asks about **deskilling**, surveillance, inequality and the missing link to decent employment.

Employment quality, not only employment counts

A warehouse that adds scanning and robots may keep a large staff on short contracts. The job count looks stable while the nature of work becomes paced by software. An IT firm may hire fewer routine testers and more prompt engineers. The net national employment effect can hide a sharp local loss. Public policy that only counts vacancies will miss this. Vocational training helps only if there are employers who hire on decent terms. Automation under public ownership and strong unions has a different sociology from automation in a weakly regulated platform firm. The critical task is to name those relations each time the machine is praised.

Flow diagram

Automation and digital control -> Labour process
Labour process -> Deskilling and polarisation
Labour process -> Surveillance
Automation and digital control -> Job shift and displacement
Property and policy -> Job shift and displacement

Conclusion

Technological advancement and automation reshape skill, control and the mix of jobs. They can reduce drudgery and they can deepen precarity. The outcome depends on who owns the technology and how the state and labour can bargain. A critical view studies those relations, not the machine in isolation.

Facts & figures

Deskilling

The transfer of craft knowledge into machines and managerial systems, leaving the worker with narrower tasks.

Creative destruction

Schumpeter's term for innovation that destroys old firms and jobs while creating new ones.

Polarisation of jobs

Growth at high-skill and low-skill ends, with pressure on routine middle occupations, observed in several economies.

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