



Computer Operating and Programming Assistant (COPA) Training and Economic Upliftment of Persons with Disabilities in India: A Systematic Review of Employability, Digital Inclusion and Livelihood Opportunities

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Abstract

Economic participation of Persons with Disabilities (PwDs) remains an important challenge for inclusive development in India. Although vocational education and digitalisation have created new opportunities for employment and self-employment, PwDs continue to experience barriers related to skills, accessibility, assistive technology, employer attitudes and transition from training to work. Computer Operating and Programming Assistant (COPA) training offers a potentially important pathway because it develops computer and digital competencies that can be applied to office administration, data management, accounting support, customer services and selected digital employment opportunities. This review paper examines the potential contribution of COPA training to the economic upliftment of PwDs in India by synthesising literature on disability employment, vocational skills, assistive technology and workplace inclusion. The review indicates that vocational skills alone are insufficient to produce sustainable economic outcomes. Assistive technology, accessible infrastructure, employer acceptance, placement support, entrepreneurship opportunities and post-training mentoring are equally important. A conceptual framework is proposed linking COPA training with digital competency, employability, employment or self-employment, income generation and economic independence. The paper argues that COPA should be positioned not simply as a vocational certification programme but as a mechanism for disability-inclusive digital economic participation.

Keywords: Persons with Disabilities, COPA, vocational training, digital skills, employability.

1. Introduction

Employment is a major pathway to economic independence, dignity and social participation. For Persons with Disabilities (PwDs), however, participation in the labour market remains substantially lower than that of the general population. Indian evidence shows that disability employment is influenced by education, geographical location, socioeconomic conditions and disability-related barriers (Naraharisetti & Castro, 2016).

The problem is not simply the absence of jobs. PwDs may encounter barriers at multiple stages, including access to education, vocational training, transportation, technology, recruitment and workplace accommodation. Research in South India found that physical accessibility, communication, attitudes, discrimination and limited organisational awareness can restrict employment opportunities for PwDs (Ramachandra et al., 2017).



At the same time, digitalisation is changing the nature of work. Computer-based occupations may provide new opportunities for PwDs because some tasks can be performed with appropriate assistive technologies and flexible work arrangements. Consequently, digital vocational education can become an important component of inclusive employment policy.

Within this context, **Computer Operating and Programming Assistant (COPA)** training is particularly relevant. The authors' previous study specifically examined the economic upliftment of PwDs through COPA training and identified its potential contribution to digital competencies, employability and livelihood opportunities (Tiwari & Kishan, 2026).

The present paper extends that work by placing COPA within the broader literature on disability employment, assistive technology, vocational skills and inclusive labour markets.

2. Objectives of the Study

The study aims to:

1. examine the relevance of COPA training for PwD employability in India;
2. review evidence linking vocational and digital skills with employment outcomes;
3. examine the role of assistive technology in labour-force participation;
4. identify barriers affecting the transition from training to employment;

5. develop a conceptual framework connecting COPA training with economic upliftment; and
6. suggest policy measures for strengthening disability-inclusive digital skill development.

3. Methodology

The study adopts a **systematic narrative review** approach. The review focuses on peer-reviewed literature concerning disability employment, vocational education, digital skills, assistive technology and workplace inclusion, with particular emphasis on India.

Academic papers were included where their DOI could be verified through publisher or recognised scholarly sources. Government and institutional sources were used separately for information concerning COPA training and disability skill-development policy.

The authors' previous study, **Tiwari and Kishan (2026)**, is incorporated as prior research forming the foundation of the present investigation.

Table 1. Review Dimensions

Dimension	Focus
Population	Persons with Disabilities
Geography	India
Intervention	COPA/digital vocational training
Main outcome	Economic upliftment
Intermediate outcomes	Digital skills, employability, employment
Supporting factor	Assistive technology
Barriers	Accessibility, discrimination, skills gap
Research	Systematic narrative



approach	review
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4. Review of Literature

4.1 Disability and Employment in India

Naraharisetti and Castro (2016) investigated factors associated with disability employment in India using district-level data. Their study demonstrated that employment patterns vary across disability categories and geographical contexts, indicating that disability employment policies require targeted rather than uniform interventions.

Ramachandra et al. (2017) examined employment and employability among PwDs in South India. The study identified physical accessibility, communication, attitudes, discrimination and organisational awareness as important employment barriers.

These findings establish that economic upliftment requires more than skill acquisition. Skills must be connected with an enabling employment environment.

4.2 Prior Research by the Authors

Tiwari and Kishan (2026) specifically examined “A Study on The Economic Upliftment Of Persons with Disabilities of Computer Operating and Programming Assistant (COPA) in INDIA.” The study examined COPA as a vocational pathway for improving employability, income generation and social inclusion among PwDs. It identified inadequate workplace accessibility, social stigma, limited employer awareness and uneven policy implementation as continuing constraints. The present paper builds on that contribution by extending the analysis beyond COPA itself and integrating evidence concerning

assistive technology, labour-force participation, workplace accessibility and employability.

4.3 Assistive Technology and Labour Participation

Rajasulochana and Khan (2024) provide particularly important evidence for the present framework. Using nationally representative Indian disability data, they found that labour-force participation among PwDs was considerably lower than among the general population and reported that access to assistive technology increased the probability of labour-force participation by 26.6%, particularly in urban areas.

This finding has direct implications for COPA. A person may complete computer training but remain unable to obtain employment if the necessary screen reader, magnification system, accessible software or other adaptive technology is unavailable.

Therefore:

COPA Training + Assistive Technology = Greater Potential for Digital Employability

5. COPA Training and Economic Upliftment

COPA training can potentially contribute to economic upliftment through several stages.

Table 2. COPA Skills and Potential Economic Outcomes

COPA Skill	Employability Application	Potential Economic Outcome
Computer operation	Office work	Wage employment
MS Office	Documentation	Administrative employment
Data	Data entry	Income



management		generation
Internet applications	Online services	Digital employment
Accounting software	Bookkeeping	Accounts-related work
Database skills	Data management	IT support
Programmin g basics	Digital services	Technical employment
E-commerce	Online business	Self-employment
Digital communicati on	Customer support	Remote work

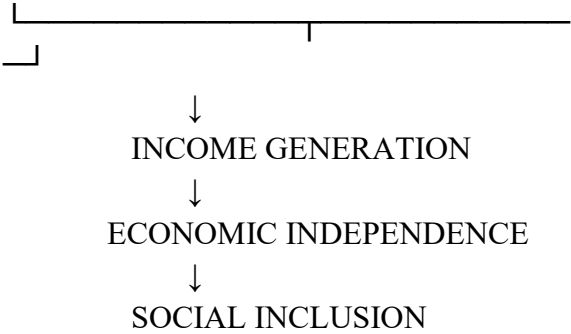
The central pathway can therefore be expressed as:

COPA Training → Digital Competency → Employability → Employment/Self-employment → Income → Economic Independence

However, this pathway depends on several external conditions.

6. Conceptual Framework

Figure 1. Proposed COPA Economic Upliftment Framework



Moderating Factors

- Assistive technology
- Workplace accessibility
- Employer attitudes
- Industry linkages
- Placement support
- Digital infrastructure
- Entrepreneurship support
- Government policy

The framework proposes that COPA training is the **starting point**, but economic upliftment depends on the successful transition from training to labour-market participation.

7. Major Barriers

Table 3. Barriers to COPA-Based Economic Upliftment

Barrier	Effect
Limited accessible training infrastructure	Restricts participation
Cost of assistive technology	Creates digital inequality
Inaccessible software	Limits practical skill utilisation
Employer prejudice	Reduces recruitment
Physical accessibility problems	Restricts workplace participation
Weak industry linkages	Reduces placement



Limited entrepreneurship finance	Restricts self-employment
Transportation difficulties	Limits job access
Lack of post-training support	Reduces employment sustainability

The evidence from Ramachandra et al. (2017) reinforces the importance of accessibility and employer attitudes, while Rajasulochana and Khan (2024) demonstrate the importance of assistive technology.

8. Proposed Propositions

Since this paper is a review rather than a primary empirical investigation, propositions are developed instead of statistically tested hypotheses.

P1: COPA training enhances digital competencies among PwDs.

P2: Digital competency positively contributes to employability.

P3: Assistive technology strengthens the relationship between digital competency and labour-force participation.

P4: Workplace accessibility strengthens the transition from training to employment.

P5: Employer attitudes influence the conversion of employability into actual employment.

P6: Placement and entrepreneurship support strengthen the relationship between COPA training and income generation.

P7: Employment and self-employment contribute to economic independence and social inclusion.

9. Discussion

The reviewed evidence indicates that economic upliftment of PwDs requires an integrated approach. First, **vocational skills**

are essential because individuals need market-relevant capabilities to compete for employment. COPA provides a useful digital skill base that can be applied across several occupational settings.

Second, **skills must be usable**. Assistive technology is critical for many PwDs. The evidence of Rajasulochana and Khan (2024) suggests that assistive technology can significantly improve labour-force participation, making it a crucial complement to digital vocational education.

Third, **organisations must be prepared to employ PwDs**. Ramachandra et al. (2017) found that accessibility and employer perceptions remain important barriers.

Fourth, **economic upliftment should include self-employment**. COPA skills can potentially support small digital businesses, online service provision, bookkeeping, e-commerce assistance and other technology-enabled livelihood activities.

Thus, the economic value of COPA should not be measured merely by the number of certificates issued. More meaningful indicators are:

Certification → Placement → Employment Retention → Income → Economic Independence

10. Policy Implications

10.1 Accessible Training Infrastructure

COPA centres should provide accessible classrooms, software and adaptive computer equipment.

10.2 Assistive Technology Support

Government and training institutions should subsidise or provide assistive technologies for economically disadvantaged trainees.

10.3 Industry Partnerships



Training institutions should collaborate with IT companies, banks, service-sector organisations and government departments to create placement opportunities.

10.4 Disability-Inclusive Recruitment

Employers should ensure accessible recruitment systems and reasonable workplace accommodation.

10.5 Entrepreneurship Development

COPA programmes should include digital entrepreneurship, financial literacy and small-business management.

10.6 Post-Training Monitoring

Training outcomes should be tracked after certification to determine whether trainees obtain employment, retain jobs and improve income.

11. Research Gap and Future Research

Although previous research has examined disability employment, vocational training and assistive technology separately, relatively limited research has integrated these dimensions around **COPA training specifically**.

The authors' previous study established COPA as a relevant pathway for economic upliftment (Tiwari & Kishan, 2026). The present review advances this discussion by proposing an integrated model connecting COPA, digital competency, assistive technology, employability and economic independence.

Future research should empirically test the proposed framework using primary data from COPA-trained PwDs. Important variables may include training quality, digital competency, assistive technology access, employment status, monthly income, job retention and self-employment.

A longitudinal study comparing the economic status of trainees before and after COPA training would provide particularly valuable evidence.

12. Conclusion

This review examined the potential role of COPA training in the economic upliftment of Persons with Disabilities in India. Existing evidence demonstrates that PwDs face significant employment barriers related to skills, accessibility, employer attitudes and technology.

COPA can address an important part of this problem by developing computer and digital competencies. However, training alone cannot guarantee economic independence. The effectiveness of COPA depends upon assistive technology, accessible infrastructure, employer acceptance, placement mechanisms and opportunities for self-employment.

The study therefore proposes that COPA should be understood as part of a broader disability-inclusive economic ecosystem:

COPA Training → Digital Skills → Employability → Employment/Self-employment → Income Generation → Economic Independence → Social Inclusion

The paper builds directly upon the authors' earlier COPA research while extending it through a broader review of disability employment and technology literature.

Consequently, strengthening COPA-based training, accessibility, assistive technology and industry partnerships can contribute to a more inclusive digital labour market and potentially improve the economic participation of PwDs in India.

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