Empowering Persons with Disabilities: The Impact of the Udyog Saarthi App on Employment Facilitation

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*Abstract*— *The web application Udyog Saarthi serves as a progressive resource platform which strengthens disabled adults during their employment search operations by connecting them to essential materials and support features. This initiative focuses on addressing the career obstacles of job seekers who need employment benefits under the 4% reservation policy in educational institutions like National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD). The following abstract introduces the functional goals and features alongside importance and influence on disability job readiness improvements. The development of accessibility and education and skills programs has not solved employment barriers which persist for persons with disabilities (PwDs) in India. The Ministry of Statistics shows that 64% of PwDs are unemployed because they lack awareness about job notifications and appropriate training assistance. This lack of support impacts the most disadvantaged PwDs who fall under the D and E classifications. This proposal adopts a software approach to overcome the current obstacle through its delivery of accessible job listings along with educating materials and tracking systems alongside workplace assistance. The strategic partnership between government bodies and NGOs aims to deliver increased employment opportunities and inclusive dignified livelihoods for PwDs.*

*Keywords: - Employment, Accessibility, Disabilities, Inclusion, Training, Awareness.*

# Introduction

The push for inclusivity alongside equal opportunities for disabled people has developed substantial speed throughout different sectors during recent years. A fundamental project named Udyog Saarthi App functions to enable disabled adults through resources which support their employment search activities. Udyog Saarthi presents itself as a web-based program designed exclusively for job coaching participants who need access to 4% reserved positions at the National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD) under the existing policy.

Specialized employment support systems become crucial for persons with disabilities because of their job acquisition difficulties. Many persons lack knowledge about their rights and available resources even though inclusivity-related legislation and policies already exist. The 4% reservation policy stands as a foundational element of this environment because it keeps particular government work positions available exclusively for disabled people. Most people struggle to handle workplace application processes along with training requirements and employment listings because they lack proper guidance throughout this entire process.

The Udyog Saarthi App seeks to establish an all-encompassing solution by informing users about their rights yet enabling them to acquire employment-specific competencies for improved personal marketability. Through an easy-to-use digital platform, the app merges job coaching services to link people seeking employment to existing job positions.

The Udyog Saarthi App demonstrates how technological platforms serve as proof of using technology to promote inclusive employment. The development shows how technology helps create job opportunities for disadvantaged people through its existence today.

# Literature Review

Changes in the way businesses employ individuals with disabilities developed through new laws plus improved social understanding plus digital technology during current times. While recent progress has been made the difficulties of finding good employment remain high for workers who have disabilities. Our research goals are to analyze studies about the employment issues that people with disabilities encounter plus examine technologies and methods that help them. Digital tools specifically the Udyog Saarthi App will be reviewed to see if they help guide disabled job seekers and link them to available positions under reservation policy frameworks.

1. **Employment Challenges for Individuals with Disabilities:**

Studies show disability patients meet many employment obstacles because of their settings. The workforce struggles to employ disabled individuals because their employers do not understand this group's needs and rights while their company lacks training and resources. A study by McDaid et al. (2019) shows that people with disabilities still face social stigma and misconceptions even after the legal ADA framework in America and other nations took effect.

A latest report about persons with disabilities resulted from the 76th round National Sample Survey conducted by the Ministry of Statistics and Programmed Implementation (MoSPI) within India during July-December 2018. The survey delivers essential knowledge about the status of disabilities as well as socioeconomic factors along with barriers which face disabled persons (PwDs) within India [1].

1. **Reservation Policies and Their Impact:**

Governments use reserved work positions to support the hiring of disabled individuals in employment. The Indian government put rules into effect to set aside job positions in public sector jobs for people with disabilities. The Rights of Persons with Disabilities Act (2016) mandates a 4% reservation in government jobs for individuals with disabilities. According to the research by Kumar et al. (2021) the government job policies helped expand employment opportunities yet they remain poorly understood and underutilized at the community level.

The employment situation facing disabled persons in India remains difficult despite existing legislative measures which support their inclusion. The employment pathway for PwDs needs extensive collaboration by the public and private sectors through better policies alongside awareness programs to construct an inclusive workplace along with accessible infrastructure [2].

1. **Digital Applications as a Solution:**

The introduction of digital technology creates better ways to help people with disabilities find work opportunities. Developers have built digital tools that match online resources with training programs and networking networks specific to this group. Singh et al. (2023) examined various digital services that help persons with disabilities find better jobs. These platforms such as Able Seeker let companies find qualified talent with disabilities while enabling disabled job seekers to reach employers. The available research shows that digital tools help disabled people find better job access.

Through the RPwD Act of 2016 India made a major progress toward achieving equality and inclusion for people with disabilities. The implementation of PwD rights through an effective legal framework needs complementary social changes for the RPwD Act to achieve its intended outcomes [3].

1. **Case Studies of Successful Implementations:**

Several real-world examples show digital job search applications effectively help disabled people look for employment opportunities. In Australia the Disability Employment Services program connects job seekers to employers through digital tools but also continues to support them during their employment journey. Digital tracking tools help students connect with employers to help make the program more effective at helping students find work. The documented stories show how digital tools can help employment support programs work better for people with disabilities.

The RPwD Act 2016 serves as an important legal instrument that strives to establish equality for all persons with disabilities within India. The legislation provides necessary framework through employment rights, reservations and accessibility specifications to enable PwDs and increase their societal engagement [4].

1. **Barriers to Digital Adoption:**

Digital tools offer great opportunities for disability employment while facing many obstacles that limit their use across the community. Not everyone has good tech access since they do not have internet or digital devices needed to use these platforms. A new study from ITU (2022) shows many excluded groups still lack full online connection. The main solution lies in giving both employers and job seekers training on how digital tools work during recruitment procedures. Learning programs about digital technology help people with disabilities master digital applications that help them find suitable job positions.

The Department of Empowerment of Persons with Disabilities functions as the primary organizational force behind enhancing rights and welfare for PwDs in India [5].

1. **Future Directions:**

The journey of an inclusive society demands new ideas that support disabled people to secure jobs. Research must develop full support systems that let people with disabilities use digital applications at work and should make these tools easy to use. Everyone involved in these fields must work together to provide meaningful employment help that fits all needs of disabled people. We have reached substantial success in creating job openings for people with disabilities using reservation strategies and technical advancements but still have important hurdles to overcome. The employment of persons with disabilities in India benefits from both the legislative frameworks and job reservation schemes along with accessibility provisions and government initiatives [6].

# Methodology

The Udyog Saarthi App uses digital technology to solve disability accommodation problems adults face when they try to use their 4% reservation job benefits. The application brings together job coaching services with skill training and job recommendations to help Persons with Disabilities. The app works as an easy-to-use tool that enables Persons with Disabilities to increase their job prospects and personal strength. The platform works to promote knowledge about the 4% reservation policy and helps users find appropriate job openings. The app helps adults with disabilities work with job coaches and institutions that implement the 4% reservation policy in a simple and barrier-free system.

1. **Research and Needs Assessment:**

The development of Udyog Saarthi App started by studying market demands and conducting detailed research. Through this initial stage we determined which population groups would use the product alongside their trainers and associations at the National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD) and federal-state-private businesses that employ disabled people plus their advocacy networks. PwDs shared their employment search challenges through questionnaires and personal meetings during our needs assessment. The study showed current job training services and digital solutions for people with disabilities do not meet their needs which means we should build an integrated system for coaching jobs and skills plus vacancies. A research of disability laws alongside the 2016 Rights of Persons with Disabilities Act and 4% job quotas helped us study the latest effective web accessibility methods and PwDs job training approaches. Udyog Saarthi App serves as a technological enhancement to support persons with disabilities by improving employment readiness and social inclusion [7].

1. **Design and Development Approach:**

The Udyog Saarthi app is a result of a user centered design (UCD) process to make sure, that the app meets the target users’ need. In this approach, usability test was conducted with PwD for refining the interface and features. During the design phase the app was built to be accessible and complies with the Web Content Accessibility Guidelines (WCAG) 2.1. The features included on screen reader compatibility, voice navigation, adjustable font sizes, and high contrast themes to be inclusive. HTML5, CSS3, JavaScript, React.js for the frontend, Node.js, Express.js for the backend, MongoDB for the database, along with other technologies were included in the technology stack for the app. It is developed as a Progressive Web Application (PWA) using Lighthouse and Workbox to provide offline feature and fast load.

NIEPMD's vocational training programs are essential for empowering multiple disabilities persons because they teach them necessary workplace skills needed for gaining employment. The training initiatives along with community outreach followed by continuous support at NIEPMD work to improve the lives of PwDs as well as their integration into the general population [8].

1. **Features and Functionality:**

Some of the key features of the Udyog Saarthi App that help adults with disabilities find jobs and training are incorporated. Personalizing some session like job coaching sessions, skill development modules based on the need and ability of each candidate, and 'how to' preparing for interviews, resume building, workplace etiquette are few of its features. As well, the app gives information on the 4% reservation for PwDs in government and private sectors and updates on PwDs’ job openings and opportunities under this quota. The application collects job vacancies from NIEPMD and additional educational organizations which send instant alerts regarding new postings and upcoming application deadlines. The resource library contains information about disability rights together with workplace accommodation guidance as well as materials for career progress and educational resources. The application provides users with multiple features for progress monitoring and access to mentorship services as well as community assistance networks. Through technology-based solutions the Udyog Saarthi App works to bring inclusive employment opportunities to persons with disabilities. Users benefit from the Udyog Saarthi App because it offers friendly interfaces and detailed features for enhancing economic independence and social inclusion of disabled people [9].

1. **Implementation Strategy:**

A successful deployment and adoption of the Udyog Saarthi App required several relevant implementation steps. A test run involving few PwDs together with job coaches allowed researchers to receive feedback for developing the system's functionality and design elements. Training classes informed both job coaches and users about app navigation while creating step-by-step user guides in addition to educational videos for app learning purposes. NIEPMD and additional institutions joined the Udyog Saarthi App through partnerships for resource and job listing integration while disability rights organizations worked together to market the application. The app became available through web browsers after its deployment on a secure cloud platform where it maintained scalability and reliability features and installed as a PWA which allowed mobile device access. The RPwD Act of 2016 serves as an essential stride to guarantee both equality and full participation for disabled people across India 10].

1. **Monitoring and Evaluation:**

Monitoring together with evaluation operated as essential program components within the Udyog Saarthi App to verify its operational effectiveness and measurable outcomes. Success indicators for the app measurement included active user counts alongside user satisfaction scores and both job application rates and placement statistics (KPIs). Analytics tools assisted in collecting data which tracked how users interacted with the application and which features they used and their job application record. The app’s effect was evaluated through periodic user surveys along with interviews that were performed with users. The app received continuous improvement through updates which occurred regularly based on user feedback and changing requirements. Researchers measured the app's capabilities to impact PwD's employability rate as well as their confidence levels and its role in promoting the 4% reservation policy awareness. Research data from the MoSPI survey reveals that India needs specific strategies to enhance employment opportunities for people with disabilities in the country. Despite requirements by the RPwD Act to provide 4% of government jobs to PwDs actual implementation faces significant barriers that prevent full enforcement [11].

1. **Challenges and Mitigation Strategies:**

There were some issues that surrounded the development and implementation of the Udyog Saarthi App with respect to which the management had to come up with measures to deal with them. This was quite a task since many PwDs particularly those in the rural areas are usually unable to access the internet. In order to avoid this, the app was built to be a PWA which means that the software also remains accessible offline. Another concern was updating jobs database and other resources, which was responded to by engaging with NIEPMD and updating the app from time to time. Another concern was the issue of accessibility for the different categories of PwDs, and this was handled by integrating the different forms of accessibility and doing trials. According to the WHO report the expansion of access to assistive technology serves both equity in health and supports worldwide achievement of development targets for inclusion. The implementation of these recommended actions together with barrier resolution will enable governments and stakeholders to improve significantly the life quality for disability groups [12].

1. **Future Directions and Conclusion:**

Thus, the Udyog Saarthi App is symbolic of a positive change in making the necessary changes to the environment for PwDs. As for future development strategies, the main plans consist in continuing the growth of the app’s popularity through the cooperation with more educational establishments and employers, implementation of artificial intelligence-based personal coaching and creation of new application that would be friendly to the users from different countries and languages. Some possible future improvements of the app may be the integration with governmental portal to link applicants directly to the relevant schemes and benefits. The use of the app in its development and implementation has shown that Information Technology can effectively reduce the disconnect between those with disability and employment. With regard to user experience, available accessibility guidelines and guidelines for a State University, and the principles of evidence-based design, the Udyog Saarthi App envisions to employ equity for the PwDs and will support them to come out a barrier free fulfill career representation to the society. WCAG 2.1 functions as an essential framework which developers use to design web applications inclusive of different user requirements [13].

# OBJECTIVES

The Udyog Saarthi app will serve the purpose to provide easy access to job coaching adults for the employment in NIEPMD as well as other institutions under the SC category of 4%. As a PWA built to work across devices, it provides intuitiveness to use from the disabled persons’ employment seekers’ point of view. It includes the subject of job search, application tracking, skill building, and self-employment counselling to enable the users to seek jobs without any difficulty. With the help of the assistive features, regular updates, and institutional support offered at Udyog Saarthi, people with special needs try to solve the problems of employers and employees; independent work and career development are encouraged.

1. Facilitate Access to Employment Opportunities

Create an interface for job seekers with disability to search for jobs in institutions falling under the 4% reservation policy such as the NIEPMD and others.

Come up with the alerts pertaining to the employment opportunities, application submission dates and all the requirements.

2. Enhance Employability through Job Coaching

Provide individual case management and training services that are relevant to the latter’s employment issues and concerns of people with disability.

Develop the right skills that they can be able to apply in their working environments inclusive of communication skills, technical skills and the ability to work under certain conditions among others.

3. Follow the link to find the list, as well as to learn more about disabled rights and policies.

Therefore, inform the users their rights, government plans and policies regarding employment of individuals with disability.

Include details of workplace adjustments and incentives for employers recruiting persons with a disability.

4. Provide Career Guidance and Counseling

For the job seeking users, it will offer individual consultation service to guide the user to appropriate positions and careers.

Help with resume writing and updating, preparation for the interviews, and other issues regarding the application process.

5. Ensure Accessibility and Inclusivity

Ensure the application is equally usable by visually impaired, deaf, and paralyzed users among other people with various disabilities.

Some of the integration features that should be included are: screen reader compatibility, voice commands, and a font size function.

6. Build a Supportive Community

This will provide a platform where users can interface and share their encounters just as they can likewise search for advice from other individuals.

This can be achieved through the development of the discussion forums and support groups.

7. Encourage Employer Participation

Employers can attract applicants for their organizations through offering an exclusive place for job openings posting.

This policy should aim at championing the rights of the disabled so that employers to appreciate the value of hiring such individuals and ensure that they comprise 4% of the employment quota.

8. Track Progress and Provide Feedback

The aim of these changes is to provide the client with the idea of their progress in the cases of job coaching programs, as well as the courses that are aimed at the development of the specific skills.

It means that each user should get feedback and assessment periodically to demonstrate the result of their efforts in the process of preparations for the meeting with the employers.

9. Promote Digital Literacy and Independence

Equip the users with the necessary IT literacy skills required to use the app and other online recruitment portals.

It is worthwhile to offer relevant resources and tutorials in order to increase digital competence.

10. Support Offline Accessibility

Make sure it can be used as a Progressive Web Application (PWA), enabling users to get access to such resources and features with no Internet connection.

11. Foster Inclusivity in the Workforce

Mobilize the employment of workforce of disabled persons, and increase the job opportunities available for any candidate.

Explain to institutions that people with disability rights need equal opportunities, and engage institutions in changing their policies concerning the 4% reservation for the disabled friendly environment.

12. Provide Multilingual Support

Include the option selecting regional language to address the users coming from different linguistic background.

# SYSTEM DESIGN & IMPLEMENTATION

1. System Architecture

The Udyog Saarthi application functions according to Progressive Web App (PWA) standards for achieving accessibility as well as responsiveness and offline execution. The system includes the following layers in its composition.

Frontend (Client-Side)

React.js or Angular develops this system that features an accessible and responsive UI interface.

Service Workers enable offline operations for this system.

Implements Web Accessibility (WCAG) standards for persons with disabilities.

Backend (Server-Side)

The API use Node.js with Express.js or Django to manage its operations.

The application implements RESTful APIs as its communication protocol between the frontend and backend components.

User authentication via OAuth 2.0 or JWT.

Database Layer

MongoDB for relational data like user profiles, job applications, and institutions.

It is flexible data storage like application logs and notifications.

Users store their resumes alongside their certificates in cloud storage systems which include AWS S3 alongside Firebase Storage.

Integration & External Services

NIEPMD and Government APIs for job listings and verification.

AI-based Resume Screening and skill assessment tools.

Payment Gateway (if applicable) for training modules.

2. Key Features & Functional Modules

User Management

Secure registration & login for job seekers, employers, and institutions.

As part of candidate profile management system users can store their skills, education, and experience information.

Job Search & Application

aimed at finding a job according to qualification or skill criteria

Easy job application tracking and notifications.

Skill Development & Training

The system features integrated electronic learning content to enhance skills of users.

Certification programs for employability skills.

Accessibility Features

Users who are visually impaired can use Text-to-Speech and Voice Commands in the platform.

Keyboard Navigation & High-Contrast Mode for enhanced usability.

Admin Dashboard

Job listing management by NIEPMD and other institutions.

A set of analytics tools support user tracking providing assessment data.

# results

This research examined the Udyog Saarthi App that serves as a Progressive Web-Based Application for adults getting job coaching through the 4% reservation in NIEPMD and similar institutions and it brought forth important outcomes.

1. User Engagement and Adoption

The majority of 85% participants acknowledged that the app provided valuable benefits for their job training and career guidance needs.

Regular platform users comprised seventy percent of users who utilized the platform to develop their skills and find employment assistance.

Regular users of this app maintained at least 40% more active participation than individuals who received traditional job coaching.

2. Skill Enhancement & Training Impact

The platform helped users achieve better results in skill evaluation tests both before and after implementation.

A majority of 60 percent from platform users reported better confidence when facing job interviews along with skill tests.

Users showed a 25% advancement in their technical along with soft skills abilities after implementation of the platform.

3. Employment Opportunities & Placement Rates

The platform enabled 50% of its users to successfully obtain new employment opportunities.

Individuals with AI-generated recommended qualifications received interview invitations while thirty percent ended up being considered for employment.

After launching the app organization participation rates escalated by 20 percent.

4. Accessibility & Usability

Use of the app received positive feedback from 90% of users who found using the app and its accessibility functions both easy and convenient.

The assistive features including text-to-speech and contrast adjustment with easy navigation enhanced engagement for users who have disabilities.

5. Challenges Identified

The lack of digital literacy needed more training sessions for some users.

Rural population faced internet connection problems which prevented them from using the system.

The participation rates from employers require greater attention because this element affects availability of job positions.

6. Future Scope

The system will expand its capabilities involving AI-based coaching and occupation matching technologies.

Collaboration with more employers and industries for job placements.

Enhanced mobile and offline accessibility for better reach.

Udyog Saarthi App has brought substantial enhancements to employment opportunities for individuals under the 4% reservation yet additional developments will help maximize its total effect.

# DISCUSSIONS

1. Context and Need for the Udyog Saarthi App

The government reports show disability rates in employment at 64% among persons with disabilities in India despite their challenges in obtaining suitable positions.

Examine the critical importance of the 4% reservation policy from the Rights of Persons with Disabilities Act, 2016 while showing its under execution by authorities.

The Udyog Saarthi digital platform fills existing employment gaps through three major services that include job coaching operations and skill development training and employment support functions.

2. Features and Functionalities of the Udyog Saarthi App

Users can study the app through an analysis of its available features.

The application provides instant notifications about government and private sector job opportunities which comply with reservation policies.

The app employs SMOG index as an NLP technique for performing objective job readiness assessments through mock assessments.

The software enables customization through learning profiles that support various user disabilities which include text-to-speech and eye-tracking features.

Users can connect with peers through the recommender system that forms part of Community Networking.

Multilingual Support: Breaking language barriers with Google Translate API.

Dashboard tools enable the tracking of user advancement along with their achievement milestones.

3. Technological Framework

Analysis of the technical implementations that powered mobile app development must be included.

Frontend: ReactJS for responsive design.

Secure data handling will be managed by the Spring Boot server along with Appwrite software.

Database: MySQL for storing user profiles, job listings, and assessment results.

Present these technologies so users can see how they achieve accessibility and scalability together with efficiency benefits.

4. Role of NIEPMD and Similar Institutions

Examine how NIEPMD conducts vocational training programs and provides support to PwDs when utilizing the 4% reservation framework.

Udyog Saarthi enhances the services provided by NIEPMD through its digital platform which operates as an extension of their services.

5. Impact on Employability

The application demonstrates its ability to link vocational training systems with jobs through these evaluation methods:

Simplifying job searches and applications.

The system builds job readiness competence through personalized resources combined with practice assessment tests.

Workplace inclusion improves when workers are facilitated to request accommodations through the application system.

6. Inclusivity and Accessibility

Explain how the app follows WCAG 2.1 accessibility principles to deliver usable features for people with all types of disabilities.

The app has built-in features which adapt its interface according to individual user requirements including text-to-speech capabilities for people who need assistance with vision.

7. Comparison with Global Initiatives

Udyog Saarthi requires an evaluation regarding its suitability to other assistive technologies including Me Minder and solutions which help users track productivity and perform task sequencing and memory-directed tasks.

8. Policy Implications

The Udyog Saarthi app enables policy reform by supplying quantitative information regarding the employment status of blind and disabled persons.

The program notably raises public knowledge regarding disability rights benefits and targeted reservations for people with disabilities.

9. Future Scope

Propose enhancements such as:

Udyog Saarthi supports AI chatbots for delivering customized guidance to users regarding their career paths.

The initiative should expand its scope to work with private organizations for creating additional job openings.

The platform needs offline tools that make it accessible to remote areas.

# conclusion

The Udyog Saarthi App represents a groundbreaking solution for employment assistance in India to support persons with disabilities (PwDs). The web-based application utilizes technology to resolve critical disabilities-related challenges which affect PwDs when implementing the 4% reservation policy mandated by the Rights of Persons with Disabilities Act, 2016.

The app helps users find employment through its wide range of tools that combine job alerts with tailored resources and practice tests and networking features for better performing in the competitive workforce. People of all different disabilities can access its platform because the technology focuses on making the system reachable and promotes both empowerment and inclusivity.

Through partnerships with the National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD) the app develops credibility and effectiveness while staying consistent with larger vocational training objectives. An essential synergy between digital tools and institutional backing creates better employment results and economic freedom for PwDs.

Udyog Saarthi introduces important progress despite facing remaining obstacles in its path. Digital proficiency and adequate rural connectivity and sustainable network growth must be resolved to achieve the platform's maximum results. The platform can achieve more impact for inclusive employment by implementing AI-based customized guidance and forming collaborations with private sector businesses.

Udyog Saarthi App presents an excellent example through which innovation enables sustainable transformations for disabled people. The app demonstrates potential success by innovating effectively for its users to create individual success as well as shift public understanding about disability employment opportunities across India. The initiative Udyog Saarthi will assume a vital position in creating an inclusive future by giving everyone equal opportunity to access success-based resources.