International Journal of Engineering and Techniques - Volume 12 Issue 2, March-April - 2026

RESEARCH ARTICLE OPEN ACCESS

From Skill Gaps to Smart Matching: An Enhanced Digital Framework for Informal Workforce Empowerment using Kamgar Connect

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Abstract:

The informal workforce is an essential component of the economy, and millions of workers still have to endure the inability to be seen, unproven skill recognition, and access to credible employment opportunities. Although the digital platforms made some efforts to fill the gaps in the job market, the majority of them do not take into account the specific issues of daily wage employees: low digital literacy, lack of trust, and disaggregated data on jobs. The present paper offers a more refined version of the Kamgar Connect platform, a worker-centric digital ecosystem, which extends beyond the simple job listing services. The solution suggested is based on profiling digitally (based on skills), an easy onboarding process, and mechanisms of building trust, including verified certificates and employer feedback. The platform focuses on accessibility, unlike traditional solutions, and can be used by the first-time digital users due to the intuitive interface and localized design. The paper also proposes a better job-matching strategy that contributes to a more efficient hiring process by matching the skills of the workers with the needs of the employer. The platform is also helpful in terms of awareness of the upskilling opportunities and insights into the market demand trends so that workers can make informed choices regarding their career. The findings reveal that an adeptly developed online intervention such as Kamgar Connect can go a long way in enhancing accessibility, transparency, and trust in the unorganized sector and employment opportunities. This study underscores the promise of inclusive technology in the shift of how informal labor markets are run and in enabling sustainable livelihood opportunities.

Keywords **— Informal Workforce, Digital Employment Platform, Skill-Based Job Matching, Skill-Based Job Matching, Employment Accessibility.**

I. INTRODUCTION

The fast development of digital technology has revolutionized various sectors of the economy, but a significant portion of the workforce, especially informal and daily wage, is still mostly not integrated with the developments. In some governments such as India, the unorganized sector has been a major contributor to economic activity, in the country, the unorganized sector is characterized by constant problems such as the inability to have structured employment system, limited access to confirmed jobs, and the failure to recognize skills.

Majority of employees in this industry rely on the word-of-mouth or local contractors to secure jobs thus resulting to irregular earnings, exploitation and under exploiting their real potentials. Meanwhile, employers are having a difficult time locating significant and dependable

labor since there is no centralized and trustworthy system. Such a gap serves as an indication of the necessity to develop a digital solution that would not only unite workers and employers but create trust, transparency, and accessibility within the ecosystem.

The current job platforms mainly serve the formal sector and do not pay much attention to low literacy users. These platforms are not user friendly by informal workers due to complex interfaces, language barriers, and personalization. Further, they often lack skill validation mechanisms and career development over the long term; this constrains the overall effect of these systems.

As a solution to these problems, this paper presents a more advanced variant of the Kamgar Connect platform a worker-oriented digital ecosystem that focuses on the informal sector of the labor market. The platform is aimed at reduced user interaction, creation of digital identities based on skills, and smart job matching, so that the workers can easily demonstrate their skills and be exposed to the right opportunities. Moreover, there are verified certifications, employer feedback, and localized content, which are designed to create the sense of trust and enhance interaction between users.

The main aim of the study is to examine how a carefully designed digital environment can fill the gap between skilled laborers and job opportunities as well as overcome real-life issues of digital literacy, access, and trust. Kamgar Connect aims to develop an inclusive, efficient and transparent labor marketplace by combinig technology and user-centric design principles.

II. LITERATURE REVIEW

Fragmentation, lack of formal documentation and little integration with digital employment systems have long been defining features of the informal labor sector. Based on several researches carried out regarding labor economics, informal laborers have to endure hurdles including lack of verifiable documents, unpredictable employment prospects, and reliance on manual recruitment methods. These restrictions not only lead to poor labor force stability but are also detrimental to effective employment of accessible abilities in the labor market.

Digital job platforms that currently exist have been very effective in enhancing the efficiency of hiring in formal sectors but the design assumptions of these platforms are not in line with reality of informal workers. Studies have shown that a majority of these platforms demand organized resumes, daily internet connectivity, and some degree of digital literacy, ruling out much of the daily wage-earning population. In addition, such systems seldom have systems of testing practical skills, which can be more applicable than formal education in the informal sector.

There are a number of researchers who have suggested digital identity systems and skill registries as possible ways of filling this gap. The strategies are aimed at capturing the information of workers in a systematic form so that they can be more visible and recognized. These systems enhance discoverability, but in many instances, they are not integrated with real-time job opportunities, which restricts their usefulness. Moreover, the problems of trust and authenticity are unresolved as there are no credible verification systems.

Over the last couple of years, there is a shift in the focus to building inclusive digital platforms with a more focus on usability and accessibility. Research highlights the need to create interfaces that are friendly to low-literacy users by means of visualization, support of regional languages, and easy navigation. These characteristics have demonstrated encouraging outcomes in spreading to user adoption, though numerous implementations are still singular and they fail to represent the entire employment ecosystem.

Job matching and recommendation systems are another critical area that has been covered in the literature. The conventional methods of classification use the filtering techniques based on the keywords, which do not necessarily represent

the potential of informal workers. New methods propose the adoption of multi-parameter matching models whereby the factors taken into consideration include skill proficiency, location, availability and the preferences of the employers. Even with such developments, little has been done to implement such models in the unorganized sector.

Moreover, available studies reflect the necessity of incorporating career development assistance into job marketplaces. Long-term employability can be greatly improved by offering access to upskilling tools and training advice and insights on market demands. Nevertheless, the majority of existing solutions are aimed at quick job placement and the significance of ongoing skills upkeep is not taken into consideration.

Based on the literature reviewed, it is evident that the literature has been done in individual parts which include digital identity, accessibility, and job matching, but there has been no comprehensive solution that has incorporated these components into a single system. This gap inspires the creation of the improved Kamgar Connect platform that will provide an integrated, user-centric solution specifically designed to meet the needs of the informal workforce.

III. PROPOSED SYSTEM

Kamgar Connect is a worker-focused digital platform that will be proposed as a solution to fill the gap between informal workers and the employment opportunities by means of an accessible and integrated ecosystem. The system prioritizes simplicity, trust, and skills-based connections as opposed to traditional job portals to meet the special needs of the unorganized workforce.

1. **System Overview:** Kamgar Connect is an online platform that is centralized and allows workers and employers to communicate directly without involving any intermediaries. The system allows workers to make digital profiles, display their skills, and match to the relevant job opportunities, whereas employers have the opportunity to search, filter, and hire workers according to certain requirements.

2. **The important parts of the System:**

a) Worker Registration & Digital Profiling: Minimal information is required to get workers to register by simply adding their name, contact number and location. The platform will enable them to have a skill-based profile where they can post their expertise (e.g. electrician, plumber, carpenter), level of experience, and availability. This substitutes the necessity of using traditional resumes with an easy and convenient online identity.

b) Skill Verification & Certification: The system is designed to attain trust in the ecosystem; it should have the following verification mechanisms:

- Demonstration of skill by simple test or check of administration.
- Creation of digital certificates.
- Badges of skills verified.
- This will assist employers to choose workers with confidence based on credentials.

c) Employer Module:

- Employers can: Post job requirements
- Filtered search (skill, location, experience) by search workers.
- See trusted profiles and ratings.
- Directly approach or recruit workers.
- This minimizes reliance on agents and enhances the efficiency of hiring.

d) Smart Job Matching: The system has an intelligent matching system that matches:

- Worker skills
- Job requirements
- Location proximity
- Availability

This will make sure that the workers are notified about the relevant job, saving time and energy in job search.

e) Feedback & Rating System: Feedback can be given by both the workers and the employers after the job is done. This establishes a transparent reputation system, enhancing trust and accountability within the platform.

f) Multilingual/User Interface: In an attempt to overcome low levels of digital literacy, the platform is developed with:

- Simple navigation
- Regional language support
- Icon-based interaction
- This makes it friendly even to first time smartphone users.

g) Upskilling & Market Insights: The system also provides:

- Basic training recommendations
- Knowledge regarding marketable skills. Market trend insights
- This assists employees to gain more skills and boost earning capacity in the long run.

3. System Architecture (Conceptual Flow):

Step 1: Worker/Employer Registration
Step 2: Job Posting / Profile Creation.
Step 3: Skill Verification & Data Storage
Step 4: Processing Algorithms of Matching.
Step 5: Job Recommendation / Worker Selection
Step 6: Hiring & Communication
Step 7: Recap of Feedback and Rating.

4. Advantages of Proposed System:

i) Eliminates middlemen and reduces exploitation
ii) Improves the visibility of informal workers.
iii) Develops trust with confirmation and ratings.
iv) Enhances job matching accuracy.
v) Promotes inclusive digital take-up.
vi) Promotes skills development in the long term.

IV. METHODOLOGY

This research paper follows a conceptual approach to the methodology, which involves modelling the ways in which a digital resource such as Kamgar Connect can enhance access to employment in the informal economy. The system is perceived to be a linkage between workers and employers and it tackles major issues like absence of structured skill representation, lack of trust and ineffective job matching. It is assumed that workers are providers of skills and employers are seekers of opportunities and the lack of fit between the two is described as information incompleteness and poor visibility.

To overcome this, the framework proposes structured digital profiles where worker data including skills, experience, location, and availability is structured into a standardized format. This allows relevant comparison and data processing in the system. The corresponding mechanism is a multi-criteria decision one, in which various parameters are used to define the relevance between the workers and the job opportunities.

$$Score = w_1S + w_2L + w_3A + w_4E$$

In this case, the similarity of the skills, location, availability, and the preferences of the employer are used to compute the matching score so that the system can give a priority to the most appropriate matches. Moreover, there is a trust layer with verification indicators and feedbacks, which contribute to minimizing uncertainty and enhancing trust in the platform.

Conceptualization of system architecture is in the form of a layered model made up of user

interaction, application services, processing logic and data storage. This structure provides the flow of information between the user input and result generation with ease.

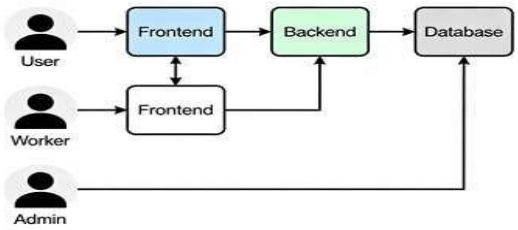

Fig.2:Architecture Diagram.

The running of the system can also be depicted in a sequence diagram, where a worker registers, gets a profile and is matched with job requirements posted by employers. This interaction is processed by the system, it helps to communicate and feedback is updated after job completion.

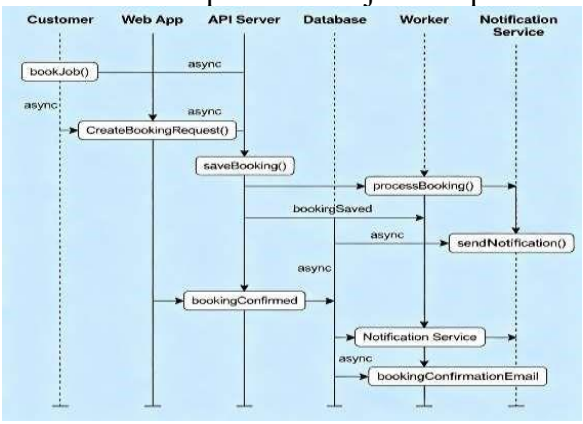

Fig.3:*Sequence Diagram*

All in all, this conceptual framework shows that structured information, smart matching, and mechanisms of trust can all be used to increase transparency, efficiency, and access in informal labor markets.

V. FUTURE SCOPE

By adopting new technologies like artificial intelligence and machine learning, the suggested Kamgar Connect framework can be improved further to enhance job matching and demand prediction accuracy. Future enhancements can be voice-based interaction and chatbot support to serve low-literacy users, and more extensive regional language integration to be more accessible. The platform may also be extended to government schemes, financial service and skill training programs, forming a more holistic ecosystem to empower workers. Moreover, real-time analytics and predictive insights may be added to get to know the labor market trends better and facilitate the policy-making decisions.

VI. CONCLUSIONS

This paper is a theoretical model of Kamgar Connect platform, which would help solve the main issues of the informal labor market, including its invisibility, mistrust, and job matching effectiveness. The proposed system brings a more inclusive and transparent method to the process of matching workers with employment opportunities by introducing the structured representation of skills, a multi-criteria matching model, and a trust-based feedback mechanism. The combination of user-friendly design principles also makes it easy to access by people with low digital literacy. In general, the framework emphasizes the opportunities of digital solutions in changing informal labor markets and facilitating sustainable livelihood opportunities.

ACKNOWLEDGMENT

We would like to extend our heartfelt thankfulness to our institution, faculty members and mentors who have been helping and guiding us all through the course of creating this research work. A special gratitude is given to anyone who gave useful information about the issues informal workers have to overcome, and it allowed directing this research. The support and motivation availed throughout the process of this work has played a

major role in the successful completion of this research.

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