

# Complaint Management System for Migrant Workers in Tamilnadu

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*Abstract- The proposed Complaint Management System for Migrant Workers in Tamil Nadu is a web-based platform designed to empower migrant laborers by offering an easy-to-use, multilingual solution for filing and tracking workplace grievances. Recognizing the diverse linguistic and socio-economic backgrounds of migrant workers, the system includes features such as real-time complaint tracking and automatic translation of both the interface and the complaint content into workers' native languages (e.g., Hindi, Bengali, Odia, Telugu, etc.). The platform allows workers to file complaints related to wage disputes, harassment, substandard living conditions, unsafe working environments, and other labor rights violations. Each complaint is assigned a unique tracking ID, which can be monitored through a user-friendly dashboard, improving transparency and accountability. The multilingual support fosters inclusivity by addressing communication barriers between workers, employers, and government officials. Additional features include document uploads, complaint categorization, prioritytagging, and an escalation management system. The backend integrates with labor department databases to facilitate timely grievance resolution, enhancing governance and policy enforcement. Built using PHP (Laravel), MySQL, JavaScript, HTML, CSS, and Bootstrap, the system focuses on usability, security, and scalability. Ultimately, this platform aims to support the protection, welfare, and dignity of migrant workers.*

Currently, the grievance redressal mechanisms available for migrant workers are either fragmented or inefficient, often relying on manual complaint processes and lacking inclusivity in terms of language and accessibility. This leads to delays in resolving issues and leaves many complaints unattended or unreported.

The Complaint Management System for Migrant Workers in Tamil Nadu is a web-based platform aimed at overcoming these challenges by offering a centralized, multilingual digital solution for lodging and tracking workplace grievances. This system allows workers to file complaints effortlessly in their native language, monitor the progress of their submissions in real-time, and receive prompt responses from the appropriate authorities.

The platform includes dedicated portals for workers, employers, and administrators. It supports features like automatic translation, document uploads, real-time notifications, and role-based access control. By integrating with labor department databases, it ensures transparency, accountability, and swift grievance resolution.

## 1.2 PURPOSE

The main goal of this project is to empower migrant workers by providing a transparent, accessible, and user-friendly platform for grievance resolution. The system seeks to digitize the complaint management process and close communication gaps between workers, employers, and government authorities.

Key purposes of this system include:

- **Accessibility & Inclusivity:** The platform offers multilingual support to ensure that workers from

## I. INTRODUCTION

### 1.1 PROJECT OVERVIEW

Migrant workers form a significant part of the labor force in Tamil Nadu, contributing to various sectors such as construction, manufacturing, textiles, and more. However, these workers often face challenges including language barriers, lack of awareness about their rights, poor living and working conditions, wage disputes, and limited access to support systems.

different linguistic backgrounds can file complaints without difficulty.

- **Transparency & Accountability:** Every complaint is given a unique tracking ID, allowing real-time status updates and ensuring that all grievances are addressed promptly.
- **Efficient Redressal:** The system streamlines the process of grievance submission and resolution, reducing delays and minimizing manual interventions.
- **Data-Driven Governance:** With integrated analytics and reporting tools, the system provides actionable insights into complaint trends and labor law compliance.
- **Security & Role-Based Access:** The platform enforces secure logins and access levels based on user roles (workers, employers, administrators), ensuring data privacy and operational integrity.

By implementing this system, the government and organizations can strengthen the support structure for migrant workers, improve policy implementation, and promote social justice through a transparent and efficient digital grievance management framework.

## II. LITERATURE SURVEY

### 2.1 A DIGITAL FRAMEWORK FOR MIGRANT WORKER WELFARE USING ICT TOOLS

This paper presents a digital framework aimed at enhancing the welfare of migrant laborers by leveraging Information and Communication Technology (ICT). It emphasizes the use of centralized platforms to facilitate grievance redressal, compliance monitoring, and service delivery for unorganized workers.

The authors highlight the significance of multilingual accessibility and user-centric interfaces in overcoming communication barriers faced by migrant workers. The system uses secure login mechanisms and role-based access to ensure data privacy and accountability. One key contribution of this work is the integration of real-time data tracking and analytics, allowing government bodies to monitor labor conditions effectively.

However, it concludes that such systems can improve transparency and empower workers through digital inclusion.

### 2.2 TECHNOLOGY ENABLED GRIEVANCE REDRESSAL SYSTEM FOR MIGRANT LABORERS

This study explores how technology can streamline the grievance redressal process for migrant laborers through mobile-based applications and web platforms. The authored entities ever agapism existing labor welfare mechanisms, such as delayed responses, manual complaint tracking, and language barriers that hinder communication between authorities and workers. The proposed system incorporates automated complaint logging, real-time status tracking, and multilingual support to make grievance registration more inclusive and efficient.

### 2.3 MOBILE-FIRST PLATFORMS FOR SOCIAL SUPPORT DELIVERY TO MIGRANT WORKERS

This paper explores the development of mobile-first platforms aimed at providing social support services to migrant workers in India. It highlights the increasing importance of mobile applications in reaching workers who may lack access to traditional service delivery channels. The authors argue that mobile platforms can offer workers easy access to essential resources such as legal assistance, healthcare, and financial support.

The platform incorporates features like geolocation services, real-time notifications, and document management, which assist workers in navigating complex social support systems. The study concludes that mobile-first strategies significantly enhance accessibility and empowerment for migrant workers, helping them manage their welfare and rights more effectively.

## III. SYSTEM ANALYSIS

### 3.1 EXISTING SYSTEM

Current labor management systems, particularly those used for addressing migrant worker complaints are largely dependent on manual processes or fragmented digital portals. While platforms like e-SHRAM offer basic registration for unorganized workers, they lack real-time grievance tracking, multilingual interfaces, and centralized data handling. These systems often require workers to physically visit labor offices or depend on intermediaries, which delays issue resolution and reduces transparency.

Moreover, existing portals are often only available in regional languages like Tamil or in English, making them inaccessible to non-native speakers. Employers also faced difficulties submitting compliance documentation online due to a lack of integrated systems. Labor officials have limited tools for monitoring real-time complaint statuses, resulting in delays and underreporting of labor law violations.

#### DISADVANTAGES:

- Manual Complaint Handling—Slows down resolution and increases the risk of lost or unattended grievances.
- No Multilingual Support—Migrant workers from different states face language barriers.
- No Real-Time Tracking—Workers are unaware of their complaint status.
- Fragmented Systems—No unified platform for workers, employers, and administrators.
- Lack of Automation—High administrative workload with minimal tech support.
- Limited Transparency—Workers rarely get updates or confirmation about complaint progress.

### 3.2 PROBLEM STATEMENT

Migrant workers in Tamil Nadu face several challenges related to workplace safety, wage disputes, and living conditions. However, the current grievance redressal mechanisms are either inefficient, unresponsive, or inaccessible due to linguistic and technological barriers. There is no centralized platform to facilitate real-time interaction between workers, employers, and labor authorities.

Furthermore, the lack of multilingual support prevents many workers from lodging complaints in their native language. Manual data handling leads to delays, errors, and sometimes total neglect of critical complaints. Employers find it difficult to ensure labor law compliance due to the absence of an integrated digital system, and administrators lack tools for prompt intervention.

These shortcomings collectively result in unresolved grievances, worker exploitation, and inefficient policy enforcement.

### 3.3 PROPOSED SYSTEM

The Complaint Management System for Migrant Workers in Tamil Nadu aims to address these

challenges by providing a secure, web-based, and multilingual platform. It helps bridge the communication and compliance gaps between workers, employers, and government authorities.

#### Key Features:

- Multilingual Interface—Allows workers to submit grievances in Tamil, Hindi, Bengali, Odia, Telugu, and more, ensuring inclusivity.
- Worker Registration Portal—Migrant workers can self-register, update their details, and lodge complaints from any device.
- Employer Dashboard—Enables employers to upload compliance documents and manage employee data.

#### Advantages

- Multilingual Accessibility—Ensures effective communication by allowing migrant workers to lodge complaints in their native languages, reducing language barriers.
- Empowerment Through Self-Service—Workers can register themselves, update personal details, and file complaints without needing intermediaries, promoting self-reliance.
- 24/7 Accessibility—Being a web-based system, it is accessible anytime and from anywhere via mobile phones or computers.
- Improved Transparency—Tracks complaint status in real-time, ensuring accountability from both employers and government authorities.

## IV. SYSTEM SPECIFICATIONS

### 4.1 HARDWARE REQUIREMENT

PROCESSOR: Intel Core i5 or higher

RAM: Minimum 8GB (Recommended: 16GB for better performance)

STORAGE: at least 256GB SSD or 500GB HDD

INTERNET CONNECTION: Stable internet for real-time updates and email notifications

### 4.2 SOFTWARE REQUIREMENT

OPERATING SYSTEM: Windows 10/11, Linux, or macOS

WEB SERVER: Apache Server (XAMPP/WAMP/LAMP)

DATABASE: MySQL

PROGRAMMING LANGUAGE:JS, PHP, HTML, CSS

FRAMEWORKS/LIBRARIES: Bootstrap,Laravel

MAIL SERVICES: SMTP (for email notifications)

#### 4.3 LANGUAGES USED

##### 4.3.1. JS (JAVASCRIPT)

Description:

JavaScript is a client-side scripting language that enhances web pages by adding interactivity and dynamic behavior. In this project, it is utilized for form validation, managing asynchronous tasks, and updating the user interface in real-time without needing to reload the page.

Usage in the Project:

- Handling dynamic updates like complaint status and notifications.
- Enhancing interactivity of dashboards and notification panels

##### 4.3.2. PHP (Hypertext Preprocessor)

Description:

PHP is a popular server-side scripting language used primarily for web development. In this project, PHP is responsible for managing operations, processing results, and sending automated email notifications.

Usage in the Project:

- Backend logic for attendance marking.
- Database connectivity using MySQL.
- User authentication and session management.

##### 4.3.3. SQL (Structured Query Language - MySQL)

Description:

SQL is utilized for managing and retrieving data from relational databases. For this project, MySQL is employed as the database management system, ensuring efficient storage and retrieval of data.

Usage in the Project:

- Storing user credentials and logs.
- Retrieving and updating records.
- Handling authentication and authorization.

##### 4.3.4. HTML (HyperText Markup Language)

Description:

HTML is the standard markup language used to build web pages. It establishes the fundamental structure of the web-based attendance system, defining

components like forms, tables, buttons, and navigation menus.

Usage in the Project:

- Designing the structure of the web pages.
- Creating login and admin dashboard pages.

##### 4.3.5. CSS (Cascading Style Sheets)

Description:

CSS is used to style and improve the visual appeal of web pages. It ensures the system maintains a clean, user-friendly, and responsive interface.

Usage in the Project:

- Styling the frontend elements for better user experience.
- Making the system responsive for different screen sizes.
- Customizing the layout of notification alerts.

## V. SYSTEM STUDY

### 5.1 FEASIBILITY STUDY

A feasibility study is a crucial phase in system development that assesses the viability of a project from technical, economic, and behavioral perspectives. It helps determine the practicality of the proposed system and ensures that the solution meets user requirements while efficiently utilizing available resources.

Conducting a feasibility analysis early in the project lifecycle helps avoid unnecessary time, effort, and costs. For this project, three key areas were analyzed to validate the development and deployment of the Complaint Management System for Migrant Workers in Tamil Nadu:

- Technical Feasibility
- Economic Feasibility
- Behavioral Feasibility

#### 5.1.1 Technical Feasibility

Technical feasibility examines whether the current technological resources (hardware and software) can support the successful implementation of the system. It also ensures that the chosen technology stack aligns with the functional requirements of the project. In this project, the system is developed using open-source technologies such as PHP (Laravel framework) for backend development, MySQL for

database management, and HTML, CSS, and JavaScript for the front end.

This ensures platform independence and broad community support. Laravel provides structured routing and security features, while MySQL offers fast and reliable data handling.

The platform is browser-based, which makes it light weight and device-agnostic. Additionally, multilingual features and real-time complaint tracking ensure that the system is scalable and adaptable for government and NGO usage. Since the technologies used are well-established and widely supported, the project is technically feasible for development and deployment.

### 5.1.2 Economic Feasibility

Economic feasibility involves assessing the cost-benefit ratio of the system, determining whether the benefits outweigh the costs associated with development, deployment, and maintenance. This system is built using free and open-source technologies, reducing the overall cost of development.

Since the project is hosted on a local server or a cloud platform, the infrastructure and maintenance costs are minimized. Automated complaint handling, email notifications, and compliance dashboards reduce manual workloads and administrative efforts, leading to long-term cost savings. In addition, digital data management reduces the need for physical documentation and improves efficiency. Thus, making it economically feasible for both public and private organizations involved in migrant worker support.

### 5.1.3 Behavioral Feasibility

Behavioral feasibility assesses whether users and stakeholders are willing to adapt to the new system and whether the system supports user satisfaction and ease of use.

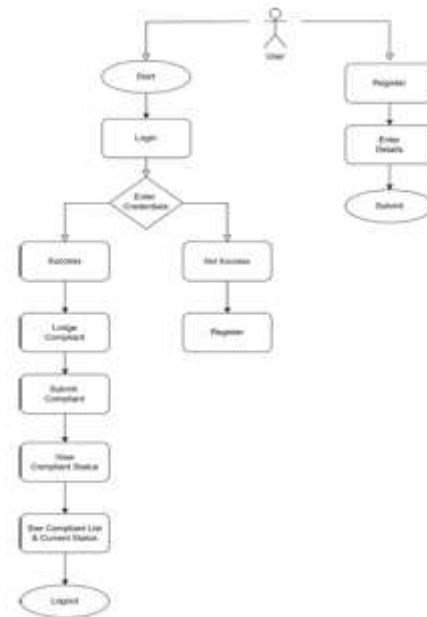
This system is built with a user-centric interface, enabling smooth interactions for all user roles—migrant workers, employers, and government administrators. The multilingual interface ensures that workers from different states can comfortably use the platform without language constraints.

## VI. SYSTEM DESIGN

System design is the process of outlining the architecture, components, and data flow of a system to meet defined requirements. It connects the identification of the problem with the actual implementation of the solution. This phase ensures that the developed system is efficient, scalable, and easy to maintain.

### 6.1 SYSTEM ARCHITECTURE

The architecture of the Complaint Management System for Migrant Workers in Tamil Nadu is designed using a layered approach to promote modularity, scalability, and efficiency.



It includes the following key components:

#### 1. Client Layer (User Interface):

- The system provides a web-based interface built using PHP, Laravel, HTML, CSS, and JavaScript.
- Users, such as migrant workers, government officials, and administrators, can log in and interact with the system.
- The interface allows users to register complaints, view complaint status, submit feedback, and manage user profiles.

2. Application Layer (Backend Processing):

- This layer is developed using PHP and Laravel framework to handle authentication, business logic, and complaint workflows.
- It processes complaint data, validates users, handles role-based access, and manages system functionalities.
- APIs are used for communication between modules and for sending notifications or updates.

- Ensures data security, backup, and high availability for uninterrupted service.

VII. MODULAR DESCRIPTION

A module is a set of source files that define specific functional units within a project. Dividing the system into modules streamlines development, improves maintainability, and facilitates efficient debugging and testing. The Complaint Management System for Migrant Workers in Tamil Nadu is organized into the following core modules:

- User Registration & Authentication
- Complaint Submission & Tracking
- Database Management

SYSTEM ARCHITECTURE:

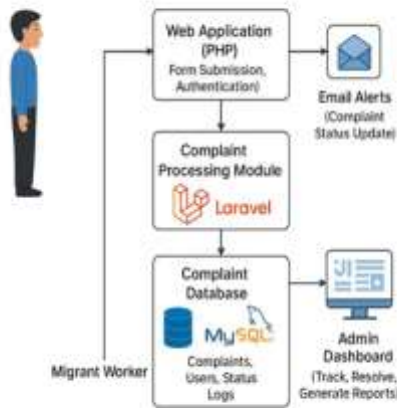


FIG 6.1.2 SYSTEM ARCHITECTURE

3. Database Layer (Storage and Management):

- The MySQL database stores user details, complaint records, timestamps, feedback, and system logs.
- Data is efficiently retrieved and updated through optimized queries for realtime access.
- Proper relationships and indexing are used to maintain data consistency and performance.

7.1. User Registration & Authentication:

The system provides a secure login and registration interface for migrant workers, government officials, and administrators. Users must register with valid personal details before accessing the system's features.

Steps in this process:

- The user enters personal details including name, region, and contact number.
- The system stores this information securely in the database.
- Login is performing educating registered credentials.
- Role-based access is granted (User, Official, Admin) based on login type.
- The system ensures secure access and protects sensitive user data.

4. Communication Layer (Notification System):

- The system uses email or SMS APIs to notify users about complaint status and feedback.
- Automated messages ensure timely communication and improve user engagement.
- Supports multilingual notifications for better accessibility.

7.2. Complaint Submission & Tracking

- The system allows migrant workers to submit complaints easily through a form-based interface.
- Each complaint is assigned a unique ID and can be tracked until resolved.

Steps in this process:

5. Deployment Layer:

- The system is deployed on a local server or cloud platform for scalability.
- Web-based access ensures remote accessibility and ease of use for migrant workers and officials.

- User selects complaint type, enters description, and submits the form.
- The complaint is stored in the database with a timestamp.
- The user can check the current status of their complaint through the dashboard.

- Notifications are sent to keep users informed.
- Technologies Used: PHP, Laravel (for complaint workflow), MySQL (for complaint data).

### 7.3. Database Management:

The MySQL database stores all essential information, including:

- User registration details
- Complaint submissions and updates
- Login credentials and role information
- System logs and notifications

Automated backup mechanisms ensure that data is securely stored and retrievable in case of failure.

Technologies Used: MySQL, PHP/Laravel (for database queries and management).

## VIII. SYSTEM TESTING

System testing is an essential phase in software development, ensuring that the system operates correctly under different conditions. In the Complaint Management System for Migrant Workers in Tamil Nadu, testing is conducted to verify the reliability of complaint submission, tracking, user management, and report generation. The aim is to detect and resolve any issues before the system is deployed for real-world use.

### 8.1 Types of Testing Performed

#### 8.1.1 Unit Testing

- Each module of the system, such as user registration, complaint submission, and report generation, is tested independently to ensure correct functionality.
- Example: The complaint submission form is tested separately to verify that all input fields store data correctly in the database.

Tools Used: PHP Unit (for Laravel-based testing), Laravel Tinker (for Laravel unit tests), Laravel Tinker (for testing data operations)

#### 8.1.2 Integration Testing

- This testing ensures that the various modules integrate and function together smoothly.
- Example: After logging in, a migrant worker should be able to submit a complaint, and the system should route it to the appropriate official for review.

Tested Scenarios:

- Authentication module interacts correctly with complaint submission and dashboard.
- Complaint records are updated and tracked by officials without data mismatch.

Tools Used: Postman (coaptating), Selenium (for end-to-end web interfacetesting)

### 8.1.3 Functional Testing

- Ensures the system performs according to the functional requirements specified during development.

Key Functional Tests:

- Migrant workers should be able to submit complaints with all required information.
- Officials should be able to view, update, and resolve complaints.

Tools Used: Laravel Dusk (for browser automation), Manual Testing.

## IX. SYSTEM IMPLEMENTATION

The implementation of the Complaint Management System for Migrant Workers in Tamil Nadu involves transforming the system architecture into functional software components, resulting in a fully operational platform. This phase includes tasks such as coding, testing, integration, optimization, and deployment. The implementation utilizes PHP with the Laravel framework for both frontend and backend development.

This ensures smooth handling of complaint submissions, user authentication, status tracking, and role-based access for different types of users such as migrant workers, admin officers, and support staff. A central part of the implementation is the integration of MySQL for data storage. The system stores complaint records, user profiles, timestamps, and resolution logs in a structured manner. Optimized SQL queries are used to ensure fast retrieval and secure manipulation of data.

To enhance communication, the system integrates SMTP-based email notification services, sending automated updates when complaint statuses are changed (e.g., accepted, in progress, resolved).

The project is hosted at <https://applifiles.com/cmsproject/> an deployed on a secure server to ensure high availability and remote accessibility.

By combining robust backend processing, a responsive frontend, real-time complaint tracking, and email notifications, the system offers a reliable, scalable, and impactful solution for addressing the grievances of migrant workers.

## X. CONCLUSION

The Complaint Management System for Migrant Workers in Tamil Nadu marks a major advancement in tackling the challenges faced by migrant workers in the region. By leveraging modern web technologies such as PHP with Laravel and MySQL, the system enables real-time complaint registration and tracking, minimizing the need for manual paperwork and streamlining the grievance redressal process. This technological shift empowers migrant workers by offering them an accessible and transparent platform to express their concerns, ensuring that every complaint is addressed promptly and effectively.

Moreover, the system's secure and centralized nature enhances both data privacy and administrative efficiency. With a robust backend and an intuitive dashboard, administrators and support teams can manage, prioritize, and resolve complaints effectively. Real-time tracking and updates allow migrant workers to stay informed on the progress of their grievances, fostering a sense of trust and transparency in the system. The platform's design is tailored to be user-friendly, ensuring that even individuals with minimal digital literacy can navigate and interact with it without difficulty.

Ultimately, the Complaint Management System has the potential to create a safer and more just environment for migrant workers by bridging the gap between them and the authorities responsible for addressing their issues. By offering a streamlined, efficient, and transparent platform for complaint management, the system contributes to enhancing the overall welfare of migrant workers, improving their quality of life and working conditions in Tamil Nadu.

## 10.2 FUTURE ENHANCEMENTS:

1. Integration with Government Welfare Systems:
  - Link the system with other government platforms (e.g., housing, healthcare) to offer a comprehensive support framework for migrant workers.
2. AI-Powered Grievance Prioritization:
  - Implement AI algorithms to automatically categorize and prioritize complaints based on urgency, streamlining the resolution process.
3. Mobile Application Development:
  - Create mobile applications for both Android and iOS, enabling users to conveniently submit complaints and track their progress from anywhere.
4. Multilingual Support and Voice-Based Submission:
  - Introduce multilingual support and voice-based complaint registration to enhance accessibility for workers from diverse linguistic backgrounds.
5. Advanced Reporting and Predictive Analytics:
  - Implement dashboards with advanced analytics to monitor complaint trends, response times, and predict potential issues for proactive management.

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