

Research Article

Empowering Women through a User-Friendly Self-Help Group Website for Record Management

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A B S T R A C T

The Women's Self-Help Group (WSHG) for Record Maintaining is a platform designed to empower women by facilitating efficient record-keeping and loan management. In response to the evolving needs of these groups, we have developed a comprehensive website dedicated to the facilitation of WSHG activities, addressing the shortcomings of existing mobile applications and emphasizing inclusivity. This initiative aims to address the limitations of existing systems, providing a secure, user-friendly, and accessible solution for women engaged in self-help groups. The journey towards empowering women through technology is an ongoing one, and the commitment to continuous improvement, reflected in the future plans of language expansion, ensures that the benefits of this initiative reach an even wider audience. The proposed website ensures automation, security, and ease of use, overcoming challenges observed in current mobile applications.

Keywords: Empowering Women, India, Security, Mobile Applications, Language Expansion, Technology

Introduction

Women's Self-Help Groups (WSHGs) play a crucial role in empowering women in India, particularly in improving livelihoods and addressing gender-based discrimination.¹ To enhance the effectiveness of these groups, we have developed a user-friendly website, acknowledging the limitations of mobile applications, security issues, and the need for a simplified user interface (UI).² The website ensures accessibility for women without smartphones, implements robust security measures, and incorporates a notification system for timely updates.³ The formation of Women's Self-Help Groups (WSHGs) has emerged as a transformative strategy in India, fostering women's empowerment and elevating their socio-economic status.⁴ Particularly significant in the context of gender-based

discrimination, these groups have become instrumental in providing women, especially those in rural areas, with opportunities to enhance their livelihoods.⁵ In response to the evolving needs of these groups, we have developed a comprehensive website dedicated to the facilitation of WSHG activities, addressing the shortcomings of existing mobile applications and emphasizing inclusivity.⁶ In India, the socio-economic landscape is marked by challenges that disproportionately affect women, including limited access to agricultural credit, inputs, and markets. WSHGs have become a powerful means to counter these challenges, supplementing the incomes of women smallholder farmers who often find themselves marginalized.⁷ However, the efficacy of existing systems, primarily mobile applications, has been hindered by several factors, such as limited device accessibility and security concerns.

Recognizing these challenges, our initiative focuses on providing a user-friendly alternative in the form of a website tailored to the specific needs of WSHGs. The existing mobile application, while technologically advanced, faces barriers due to its exclusive reliance on smartphones.⁸ As a considerable portion of the target demographic may not possess smartphones, the website ensures that all women, irrespective of their technological resources, can benefit from the self-help group platform. Moreover, security concerns inherent in the current system have prompted a reevaluation of the technology infrastructure. The proposed website introduces robust authentication mechanisms, ensuring that only authorized users can access and manage group-related activities.⁹ Additionally, the user interface has been redesigned with simplicity in mind, acknowledging the diverse age groups within the user base. This intuitive design approach aims to empower even those in their early 30s, ensuring they can navigate and utilize the platform effortlessly. The website not only seeks to address existing challenges but also to propel the self-help group movement forward by incorporating innovative features. The integration of a notification system, utilizing email alerts, ensures that users stay informed about crucial updates related to their self-help groups.¹⁰ This real-time communication mechanism enhances the overall efficiency and responsiveness of the platform, aligning with the dynamic nature of self-help group activities. In summary, the introduction of this user-friendly website for Women's Self-Help Groups represents a concerted effort to enhance the accessibility, security, and functionality of platforms dedicated to women's empowerment. By bridging technological gaps and implementing advanced features, our initiative aims to fortify the impact of self-help groups in fostering financial independence and social mobility among women across diverse socio-economic landscapes.

Objectives of Assessment

A field assessment conducted between November 2019 and January 2020 aimed to identify patterns and challenges faced by WSHGs and women smallholder farmers in Odisha. The assessment focused on improving market linkages, enhancing production and sale capacities, and assessing traditional rural markets known as "Gramin Haats."

Mobile Features

Data Accuracy and Validation: The website employs robust algorithms to ensure the accuracy and validation of data, minimizing errors and enhancing the reliability of information captured by users in the field.

Adaptive Offline Capabilities: Recognizing that internet connectivity may be limited in certain program areas, the WSHG mobile website seamlessly transitions between offline and online modes. The intelligent algorithms

synchronize offline and mobile website data without compromising data integrity, ensuring a smooth experience for users, even in areas with intermittent connectivity.

Historical Data Tracking: The website maintains a comprehensive history of data transactions, allowing users to track changes, additions, or modifications over time. This feature aids in auditing and historical analysis, providing a transparent record of group activities and decisions.

Real-Time Collaboration: Facilitating real-time collaboration among WSHG members, the website allows simultaneous data input from multiple users. This feature encourages teamwork and ensures that all members can contribute to the group's records, promoting inclusivity and shared responsibility.

Accessibility Standards: The mobile website adheres to accessibility standards, making it inclusive for users with diverse abilities. Features such as screen reader compatibility and intuitive navigation contribute to a universally accessible platform, empowering women of all abilities to actively participate in WSHG activities.

GPS Integration: Geographical information is captured seamlessly through GPS integration. This functionality enables the mapping of WSHG activities, helping visualize and analyze the spatial distribution of group initiatives, facilitating better decision-making and resource allocation.

Feedback Mechanism: The website incorporates a feedback mechanism allowing users to provide comments, suggestions, or report issues. This two-way communication ensures that the platform is continually improved based on user experiences and evolving needs.

Training Resources: Recognizing the importance of ongoing training, the mobile website provides access to educational resources and tutorials. This feature empowers users with the knowledge needed to maximize the benefits of the platform, contributing to the long-term sustainability and effectiveness of WSHGs.

Multi-Platform Compatibility: The mobile website is designed to be compatible with various devices and operating systems, ensuring flexibility and usability across a range of smartphones and tablets. This feature accommodates diverse technological preferences among WSHG members, enhancing the overall accessibility of the platform.

Encrypted Communication: All communication between the mobile website and the cloud server is encrypted, ensuring the confidentiality and integrity of sensitive information. This security measure protects against potential threats, providing users with confidence in the safety of their data within the system.

User-Friendly Design: The website prioritizes a simple and user-friendly design to cater to users with varying literacy levels.

Number of Users: The system allows coordination for multiple WSHGs, enabling both website coordinators and individual WSHGs to input data.

Security and Privacy Compliance: Each WSHG receives a separate login ID and password, adhering to government guidelines for data safety and security.

Integration with Other Applications: The architecture supports data interoperability, facilitating analysis, reporting, and mapping.

Offline Data Collection: The website functions in offline-online mode, ensuring data synchronization without loss during intermittent internet connectivity.

Instant Alerts: Push notifications and timely alerts keep users informed about updates to the cloud.

Authentication and User Roles: Built-in device authentication and user roles prevent unauthorized access to the website and data.

Multimedia Features: The website supports capturing photos, audio, and videos during field activities for analysis and decision-making.

Ease of Setup and Use: The user-friendly design minimizes the learning curve, reducing re-training efforts and costs.

Support: Dedicated software engineers are available to respond to queries during WSHG website hours.

Modules Description

The website consists of admin and user parts, integrated with a notification system. The block diagram illustrates the flow of information.

Admin Part: Before starting this part, the basic frontend of the website will be completed, and admin account creation and other operation features will be added using HTML, CSS, and JavaScript. The database used is MongoDB.

User Part: In this part, user account creation and user functionalities will be created using analytical logic, and the backend will also be completed.

Integration and Notification System: Everything is integrated, and a notification system is added to notify through emails, and deployment will also be done.

District-Wise Women Self-Help Group

Capacity building is crucial for WSHGs, involving training from various government departments and private sources to enhance livelihood activities.

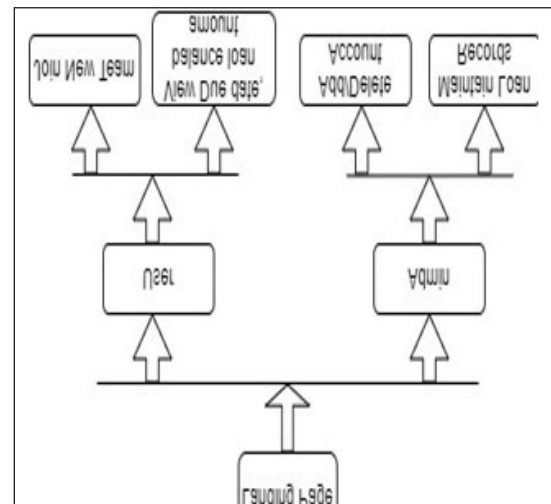


Figure 1. Flow of Information

Outcome and Pathways for Improved Livelihoods

The assessment results reaffirm the significance of WSHGs in enhancing financial and social mobility. Future work involves introducing multiple language options to cater to diverse regional preferences.

Sl. No.	District	No. of New Groups to be formed	No. of New Groups formed	% of Achievement
1	KANCHEEPURAM	600	1297	216%
2	THIRUVALLUR	325	804	247%
3	VELLORE	550	384	70%
4	THIRUVANNAMALAI	250	260	104%
5	DHARMAPURI	250	341	136%
6	KRISHNAGIRI	175	174	99%
7	SALEM	825	889	108%
8	NAMAKKAL	475	585	123%
9	ERODE	1325	2032	153%
10	COIMBATORE	1300	1599	123%
11	THE NILGIRIS	275	536	195%
12	CUDALORE	400	605	151%
13	VILLUPURAM	375	704	188%
14	THANJAVUR	550	966	176%
15	NAGAPATTINAM	200	522	261%
16	THIRUVARUR	175	409	234%
17	THIRUCHIRAPALLI	425	418	98%
18	PERAMBALUR	150	180	120%
19	PUDUKKOTTAI	200	175	88%
20	DINDIGUL	600	1318	220%
21	KARUR	275	364	132%
22	MADURAI	300	172	57%
23	THENI	550	316	57%
24	RAMANATHAPURAM	175	92	53%
25	VIRUDHUNAGAR	225	257	114%
26	SIVAGANGA	300	136	45%
27	TIRUNELVELI	900	1340	149%
28	TUTICORIN	475	1230	259%
29	KANYAKUMARI	1400	3349	239%
	Total	14025	21454	153%

Figure 2. District-Wise Women Self-Help Group

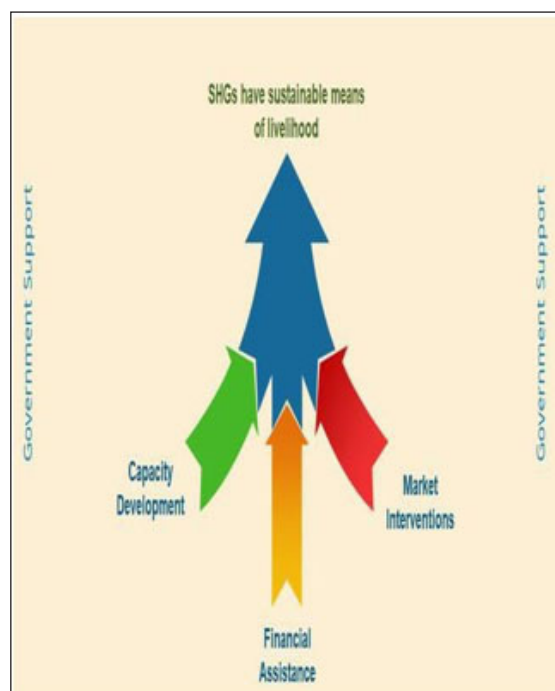


Figure 3. Outcome and Pathways for Improved Livelihoods

Conclusion

The user-friendly website addresses the financial needs of women seeking loans, streamlining record-keeping and alleviating challenges associated with manual processes. The project's future development includes incorporating multiple language options for broader accessibility. In conclusion, the Women's Self-Help Group (WSHG) for Record Maintaining is a pivotal step towards empowering women by addressing the specific needs of those engaged in self-help groups. The user-friendly website not only streamlines loan-related record-keeping but also serves as a catalyst for financial inclusion, benefiting women facing challenges in managing their financial activities manually. The assessment results underscore the critical role of Women's Self-Help Groups in fostering financial and social mobility among citizens. By providing a platform that transcends the limitations of existing mobile applications, the website promotes accessibility for all women, including those without smartphones. The emphasis on a clear and simple user interface ensures that women in their early thirties, the primary user demographic, can navigate the platform effortlessly. Furthermore, the incorporation of robust security measures, such as separate login IDs and passwords for each WSHG, aligns with government guidelines and instills confidence in users regarding the safety and privacy of their data. The offline-online functionality mitigates connectivity challenges, allowing seamless data synchronization and minimizing disruptions in data flow. The envisioned future work, which involves

introducing multiple language options, is a commendable initiative. This expansion will enhance inclusivity, enabling women to use the website in their regional languages and furthering the project's reach and impact. As we move forward, it is crucial to acknowledge the collaborative efforts of government departments, private sources, and individuals who contribute to the capacity building of WSHGs. The convergence program involving 18 government departments, including fisheries, horticulture, and animal husbandry, highlights the comprehensive approach to training, empowering WSHG members in various livelihood activities. In essence, the Women's Self-Help Group for Record Maintaining stands as a testament to the transformative power of technology in fostering financial independence and empowerment among women. By combining user-friendly design, robust security, and comprehensive training, this initiative has the potential to uplift communities and contribute significantly to the socio-economic fabric of the region. The journey towards empowering women through technology is an ongoing one, and the commitment to continuous improvement, reflected in the future plans of language expansion, ensures that the benefits of this initiative reach an even wider audience. Through the convergence of technology and empowerment initiatives, the Women's Self-Help Group for Record Maintaining is poised to make lasting contributions to the lives of women, their families, and the communities they serve.

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