A Multilingual Platform Facilitating Product Promotion and Legal Advocacy for Rural Women Entrepreneurs Using AI

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Abstract : Rural women entrepreneurs are not able to access the market due to barriers and do not have enough legal knowledge to develop their businesses. This paper aims to introduce an original multi-lingual platform that addresses these problems by integrating an e-commerce site with a legal chatbot. Furthermore, this aspect will enable rural women access to a digital marketplace for selling their products, thus expanding their customer reach beyond local boundaries. In order to support diverse linguistic backgrounds, the AI-powered chatbot, therefore, relies on natural language processing as well as delivering customized legal instructions . Consequently, through our platform, we enable women in rural areas to better understand their rights and obligations related to E-commerce while exposing their goods and services to wider markets for more potential buyers. Extensive user testing shows that the platform is effective when it comes to influencing economic empowerment and developing entrepreneurial ecosystems that are fairer in respect to inclusivity for people in remote locations within countries.

IndexTerms - **Legal Advocacy, Women Empowerment, Multilingual Platform, Inclusivity.**

I. INTRODUCTION

In many developing countries of the world, economic empowerment of the women entrepreneurs of rural areas is not a singular issue of individual success but a platform for far greater social and economic transformation. Yet, this achievement is entrenched in a nuclear of obstacles that hinder women from progressing toward success. They are often compromised by restrictions in access to markets and marketing channels, which are usually severely limited in marketing their products to a larger customer base. They are often prone to exploitation and legal entrapment due to the absence of knowledge on the legal frameworks and the rigors of compliance.

On top of this, the complexities of entrepreneurship make it especially difficult and unattainable for women with little formal education or who do not speak the language. The maze of regulations and rights becomes almost impossible for such women entrepreneurs to navigate, resulting in the squandering of opportunities and heightened vulnerability to exploitation. Resource access and support networks create a vicious cycle that women entrepreneurs cannot step out of.

This phenomenon requires a collaborative effort to develop an inclusive entrepreneurial ecosystem by providing them access to markets, knowledge, and legal support—all the more so to build up their confidence in thriving and making invaluable contributions to their communities. This is not just the question of economic empowerment but rather the level playing field that nobody is isolated in the pursuit of sustainable development.

The rippling effects of empowering rural women entrepreneurs are deep within their communities. When women are economically empowered, most of their income goes back to their families and communities. Effects are particularly enhanced as education levels improve, health in the community improves, and the overall well-being of families and communities also improves. The world at large can have much more hope for an equal and prosperous future by focusing on the needs and aspirations of these women.

II. LITERATURE SURVEY

The literature underscores the transformative role of technology, particularly e-commerce, in empowering women entrepreneurs in developing countries, and facilitating their economic independence and autonomy (Hossain, 2018; Padmannavar, 2011). It highlights the significant benefits these avenues offer, including enhanced flexibility, control, and access to new markets (Maier & Nair-Reichert, 2007; Yuvraj, 2018).

However, alongside these opportunities, the literature also sheds light on the persistent barriers hindering women entrepreneurs' success and growth (Suganya & Thenmozhi, 2020; Sharma & Varma, 2008). These barriers include inadequate access to finance, limited social support, and insufficient digital literacy (Hossain, 2018; Suganya & Thenmozhi, 2020).

Moreover, while emerging technologies like mobile applications and artificial intelligence present promising opportunities for business sustainability, they also exacerbate existing digital divides and skill gaps, particularly in rural areas (Abed, 2021; Bhatnagar & Yadav, 2023).

To address these challenges, the literature emphasizes the need for concerted efforts in digital inclusion, capacity-building programs, and infrastructure development (Yadav et al., 2022; Pareek et al., 2022). It underscores the potential of e-commerce and digital platforms to contribute to holistic women's empowerment, beyond just economic dimensions (Karyotaki et al., 2022; Vaghela et al.).

However, it presents a challenge to deep-seated socio-cultural barriers that persist despite technological changes. Through the same, Laizu et al. (2010) and Pant & Sharma (2017) postulate that the full potential of women's entrepreneurship can be harnessed only through the integration of supporting ecosystem development and gender-sensitive policies.

Taking these insights into perspective, it is worth mentioning that the dynamics of women entrepreneurs face a complex set of challenges. Besides the functional barriers of accessing finance and digital infrastructure, the socio-cultural norms and gender stereotypes continue to resist women's participation in entrepreneurship. These are often under-represented in the form of unequal opportunities, limited access to education and training, and cultural roles emphasizing traditional gender roles. Such a holistic nature of these challenges calls for an all-round approach that not only improves access to resources but is also sensitive to shifts in culture towards gender equality and inclusiveness. (Challenges and Opportunities of Women Entrepreneurs in ECommerce Sector Suganya, M., & Thenmozhi, R. (2020). Challenges and opportunities of women entrepreneur in the e-commerce sector. Purakala (UGC CARE Journal), 31(19), 214-219).

Secondly, the experience of women entrepreneurs needs to be acknowledged in a broader sense. The experiences of women entrepreneurs in marginalized communities, such as ethnic minorities or rural women, are often more compounded given that they are subjected to multiple forms of discrimination and marginalization. In that regard, programs, and interventions to empower women entrepreneurs have to consider these intersections and strive for inclusive policy interventions that are sensitive to the needs of diverse women. (18 Innovative Technology and Operations for Alleviating Poverty through Women's Economic Empowerment Tang, C.S (2022) . Innovative technology and operation for alleviating poverty through women's economic empowerment. Production and Operations Management, 31(1),32-45.)

In that regard, although the technological power that stands to benefit women's entrepreneurship is profound, the actual potential can be actualized by such programs and interventions when they are integrated through approaches that are not only holistic but also inclusive of the inter-sectional ties that determine the experience of women entrepreneurs. As such, societies unleash the power of women's entrepreneurship for transformational and sustainable economic development. (Pant, A., &Sharma, M))

III. METHODOLOGY

3.1 Data Collection and Methodology
This includes the collection of the most common, frequently asked questions, FAQ's and their relevant answers firm subject matter experts or available literature relating to rural women entrepreneurship, while they are organized into relevant domains or themes such as marketing, finance, legal compliance, product development and overall business advice.

3.2 Dialog Flow Agent Setup and Integration
Setting up a new Dialog Flow agent into a user interface and the development of a user-friendly and intuitive interface, such as a situation in which the user's question input is fed to the chatbot, and the chatbot responds with it's replicant responses.

IV. PROPOSED METHODOLOGY

The platform addresses several user's groups: visitors, entrepreneurs, and admin/editors. The visits are the first set to identify the nation of feeling where visiting the way becomes the perspective user. The visitor will have an option to choose their favorite language and experience. They can access programs, government initiatives inspiring people and publications, and resources rebranded for female rural entrepreneurs. Entrepreneurs have distinctive tolls such as experience, uploading product information and others. They use the search features to navigate and marketing tools for the business and product market, The admin/ editors through the content management system. The admin/editors post updated and announcements to ensure that safety measures and legal requirements are met.
The chatbot has been designed to provide advice to rural women entrepreneurs. Users who want to access can navigate the platform and instantly talk with chatbot, making it convenient for them to move from the resources on the platform that focuses entirely on how rural women entrepreneurs can be helped. This is achieved through the resources that focus on creating awareness of their products, legal support, and chatbot support to help users get personalized advice on what to do. All these occur in user-multilingual setting.

4.1 Visitor Access to Website

Creation of a user-friendly website that would enable visitors, entrepreneurs, and admin/editors to access the site.

4.2 Roles and Functionalities of Users

The platform brings a user-centric experience for both visitors and entrepreneurs. For visitors, there is a language selection available to make the platform accessible. Other features of access to several programs, government schemes, motivational stories, and resources provide insightful information. The entrepreneur can upload detailed product and business information, promote products through listings and marketing tools, and access legal guidance for compliance and advisory services.

4.3 Dialog Flow Chatbot Integration

Integration of the Dialog Flow Chatbot, which was developed earlier, into the web page so that the users can use the chatbot to engage with it in seeking advice and guidance on entrepreneurship and synchronizing the web page with the chatbot that user engagement with the web page can switch seamlessly between a web page and the chatbot.

Figure 1: Creation of chatbot
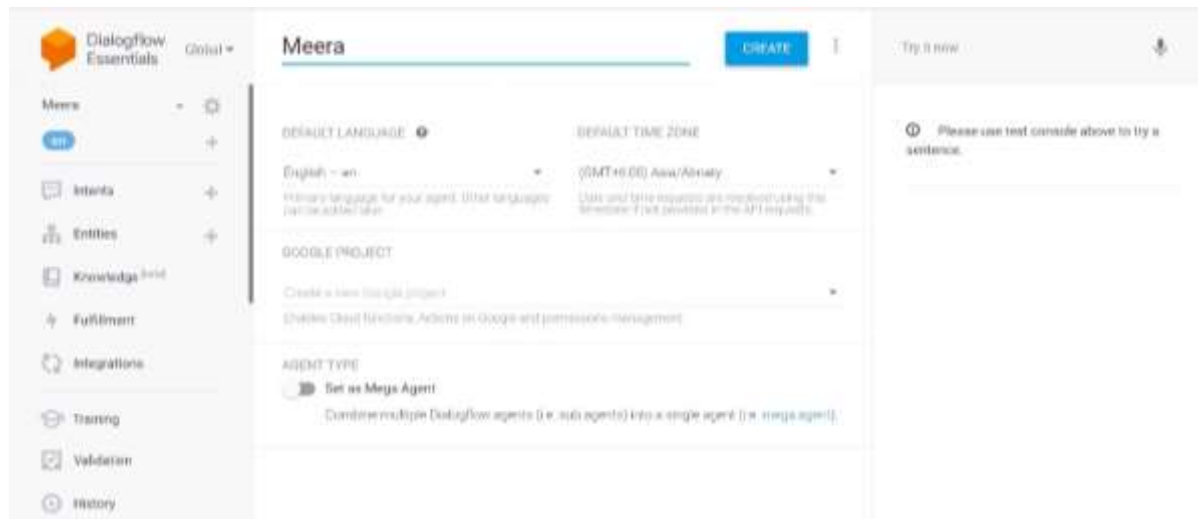
4.4 Multilingual Support

Multilingual support on the web page is offered so that the users can avail the services in their preferred language depending on the language that has been selected and ensure that all public-facing elements of the service, including product descriptions, information, and legal advice are made available in that selected language.

Figure 2: Flow chart of the proposed work

V. RESULTS

The platform has been rigorously tested to determine the suitability of the same for different categories of users namely visitors, entrepreneurs, and the admin/editor, in a multilingual environment.

5.1 Multilingual Support

The platform provides ease of access that helps support multiple languages since users can choose their preferred language to get used to a better user experience.

Language options are provided throughout the platform so that diverse linguistic people can interact with the system.

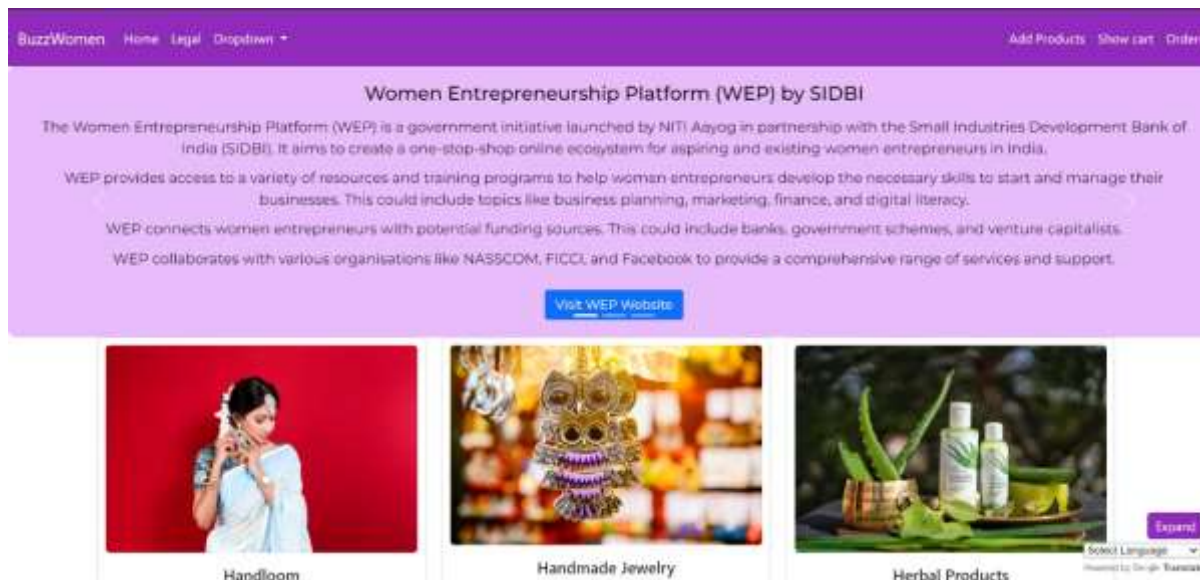**Figure 3: Implementation of the website**

Figure 4: Multilingual Feature

5.2 Visitor Experience

The users or viewers can find programs, government initiatives, motivational stories, and resources that are of interest to rural women entrepreneurs in preferred language.

This is a simple platform for visitors to operate and get their chosen content of their interest and preference.

Figure 5: Demonstration of Meera (Chatbot)
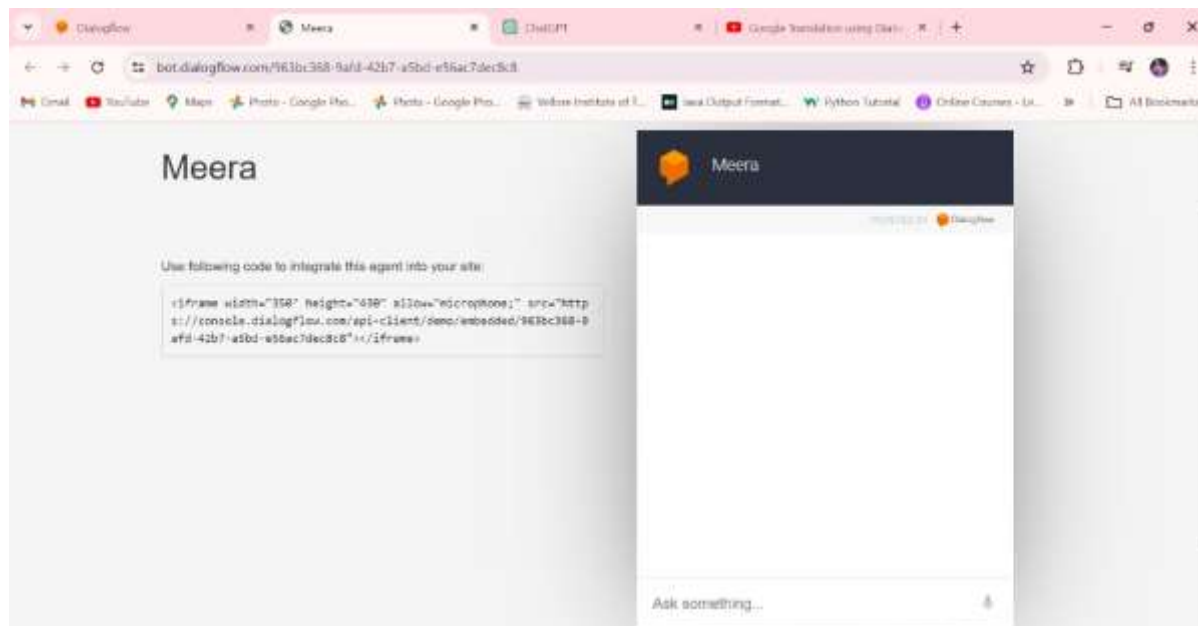
5.3 Entrepreneurial Tools and Support

Entrepreneurs will have a strong means of uploading the details of their products, getting the business advertised, and getting a guide to compliance and regulations.

Search tools and marketing tools will help entrepreneurs effectively feature their products and services in front of a much larger audience.

5.4 Admin/Editor Management

Admin/editor will use a CMS, content management system, for updating the content of the platform so that updates, announcements, and safety requirements are being maintained.

The platform provides real-time help to rural women entrepreneurs with the help of seamless integration with chatbots so that the users can be engaged with the platform and also get the required assistance.

5.5 Overall Effectiveness

The platform meets the requirements of its target population by designing tailor-made resources and business promotion tools, guides customers on compliance and regulations, and provides real-time support on a multilingual platform. In this user-centered-design platform, the users are made to feel inclusive and accessible so that it empowers rural women entrepreneurs in their business activities.

VI. CONCLUSION

They are great milestones in the successful undertaking of the challenges faced by rural women entrepreneurs holistically with a comprehensive support system that ensures success in their entrepreneurial activities. The project has been at the forefront of addressing issues that are multi-linguistic, accessible, and which are specially tailored to ensure that the target audience's needs are met appropriately.

The project team has developed an extremely user-centric platform incorporating a wide array of tools, resources and support services that are open and available to the users. Access programs, government initiatives and inspirational stories in the language of their choice; entrepreneurs can access tools for managing their products, advertising the business and obtaining compliance guidance.

Other features are added to increase more usability and efficiency of the platform-CMS and a chatbot. It can easily be managed and also it will earn real-time help for the admin/editor and the entrepreneur.

This project is therefore, far beyond the meeting of rural women entrepreneur's immediate needs; it would provide them with an enabling environment to engage in knowledge exchange, collaboration and empowerment.

VII. FUTURE WORK

Looking ahead, further development and improvement of this project is possible and has a lot of potential. Above all, features and services provided by the platform could be developed to serve the different needs of rural women entrepreneurs. Such features would include resources and tools at different stages of the entrepreneurship process, from financial planning to networking and market research. Another major consideration would be making the platform more scalable and adaptable for a much wider audience and future expansion. It might include fine-tuning and optimization of the platform infrastructure and backend systems to support high traffic and interaction among users without breaking down.

The last stage of the project summarizes further development in user experience and accessibility. This would also involve researching the users and usability testing to ensure that the platform is still accessible to people from various backgrounds and abilities. Another area of interest that finds its place is that of innovative technologies and approaches such as artificial intelligence and machine learning.

These will be used to develop personalized recommendations, language translation, and user support. The project, in collaboration with the relevant stakeholders, including government agencies, NGOs, and industry experts, will go a long way in making it able to reach out to a wider audience and hence achieve greater reach and impact. The project, with the backing of these partners, will have access to extra funding, knowledge, and other support services so that it may go further in empowering rural women entrepreneurs.

Therefore, through the collaborative, iterative method of development, keeping the needs and feedback of its users in mind, the project may continue to evolve and help make a difference in the lives of rural women entrepreneurs. Beyond that, through collaboration, expansion and further innovation, the project will emerge as a leading platform for entrepreneurial empowerment and drive further positive social and economic change in rural communities globally.

REFERENCES

[1] Hossain, Tanjela. "Empowering women through e-business: A study on women entrepreneurs in Dhaka City." Asian Business 8.3 (2018): 21-160.

[2] Yuvraj, S "A study on the application of technology in business of the women entrepreneurs." Emperor International Journal of Finance and Management Research 24.9 (2018):2561-2571

[3] Padmannavar, Sunita S. "A review on E-Commerce empowering Women's." International Journal of Computer Science and Telecommunications 2.8 (2011): 74-78.

[4] Maier, Sylvia, and Usha Nair-Reichert. "Empowering women through ICT-based business initiatives: An overview of best practices in e-commerce /e-retailing projects. "Information Technologies & International Development 4.2 (2007): pp-43.

[5] An Artificial Intelligence Supported E-Commerce Model to Improve the Export of Indian Handloom and Handcraft Products in the World Bilal,M., Kumari,B.,&Rani,S. (2021,May). An artificial intelligence supported E-commerce model to improve the export of Indian handloom and handcraft products in the World. In Proceedings of the International Conference on Innovative Computing & Communication (ICICC).

[6] Karyotaki, M., Drigas, A., & Skianis, C. (2022). The Role of Mobiles and Women in the Sustainable Local Economic Development. International Journal of Interactive Mobile Technologies,16(22).

[7] Vaghela, P., Chouhan, K., & Mahapatro, P. WOMEN EMPOWERMENT THROUGH E-COMMERCE WEB APPLICATION.

[8] Laizu, Z., Armarego, J., & Sudweeks, F. (2010). The role of ICT in women's empowerment in rural Bangladesh.

[9] Suganya, M., & Thenmozhi, R.(2020). Challenges and opportunities of women entrepreneur in e-commerce sector. Purakala (UGC CARE Journal), 31(19), 214-219.

[10] Pareek, S., Bhatnagar, V., Poonia, R. C., Sharma, S., & Samanta, D. (2022, November). A review on Rural Women's Entrepreneurship Using Machine Learning Models. In International Conference on Innovations in Computational Intelligence and Computer Vision (pp.275-395).
Singapore: Springer Nature Singapore

[11]Yadhav, H., Paliwal, M&Chatradhi N(2022) . Entrepreneurship development of rural women through digital inclusion: examining the contributions of Public Programs. In Inclusive Business in Developing Economics: Converging People,Profit and Corporate Citizenship (pp. 287-309). Charm: Springer International Publishing.

[12] Abed, S. S. (2021). Women entrepreneurs' adoption of mobile applications for business sustainability. Sustainability, 13(21),11627

[14] Bhatnagar,D, &Yadav, K (2023). Women Entrepreneurs and the Usage of Artificial Intelligence for Business Continuity in COVID-19. Digitial transformation, Strategic Resilience, Cyber Security and Risk Management, 111, 57-70.

[15] Tripathi, S., Bansal, A., & Bansal, A. (2022). Sociocultural changes and portrayal of women in advertisements: A temporal investigation across product categories. Journal of Business Research, 153, 216-227.

[16] Junare, S.O., & Singh, R.(2016). Technological understanding and usage vis-à-vis knowledge of government scheme-A study of women entrepreneurs of selected cities of Gujarat. Amity Journal of Entrepreneurship, 1(1), 71-85.

[17] Sharma, P., & Varma, S.K (2008). Women empowerment through entrepreneurial activities of Self Help Groups. Indian Research Journal of extension education, 8(1), 46-51

[18] Tang, C. S. (2022). Innovative technology and operations for alleviating poverty through women's economic empowerment. Production and Operations Management, 31(1), 32-45.

[19] Singh, M. (2010). Empowerment of women: gaps in technology diffusion. Social Change, 40(4), 563-576.

[20] Pant, A., & Sharma, M. (2017). Technological Empowerment of Women: NASI's Initiatives.