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Kolhapurbachatgat.com: A Student-led Initiative for Rural Empowerment

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Abstract: ***This research explores the Kolhapurbachatgat.com e-commerce website designed to develop into a successful vehicle for increasing rural women entrepreneur's potential in Kolhapur, India. Through fieldwork with over 50 rural producers, we found that there were major barriers to adopting e-commerce, such as limited digital literacy and poor internet connectivity. We enabled rural entrepreneurs to sell handmade goods, home-cooked meals, and artisanal products to broader audiences through the design of an intuitive, culturally relevant platform using WordPress and WooCommerce. The results have shown a 30% increase in monthly incomes, improved digital inclusion, and further empowered communities. This project shows how tailored technological solutions can bridge the urban-rural divide and promote inclusive entrepreneurship.***
Keywords: E-commerce, Rural Entrepreneurs, Women Empowerment, Digital Inclusion, Handmade Products, Kolhapur

I. INTRODUCTION

In the current digital world, e-commerce has transformed the manner in which products and services are bought and sold, thereby offering unprecedented opportunities to businesses worldwide. However, this digital transformation bypassed the rural population and more so the women entrepreneurs, who face considerable barriers such as lack of access to technology, low digital literacy, and exclusion from online marketplaces. In India, small scale, home-based cooks, and rural artisans create many unique and high-quality goods embodying the richness of India's cultural heritage. However, systemic issues, including inadequate internet connectivity and lack of training, make it difficult for these highly skilled individuals to access a larger market.

Kolhapur, a place that is known for its rich cultural heritage and expertise of artisans, has thousands of women who manufacture handmade products, cook home-cooked food items, and produce handicraft products. Despite all these skills and hard work, most of them are still stuck in local markets and cannot further expand their businesses or enhance their livelihoods. We realized the need for creating Kolhapurbachatgat.com, which is an e-commerce platform tailored to the specific needs of rural entrepreneurs in Kolhapur.

This paper describes the process of developing Kolhapurbachatgat.com, from understanding the challenges faced by rural women to designing and implementing an intuitive and culturally relevant e-commerce platform. It also explores the social and economic impacts of the platform, demonstrating how technology can drive inclusive growth and empower marginalized communities. This initiative will be a way to show that the support of rural entrepreneurs is not only important for economic development but also for the promotion of gender equality and sustainable development.

II. LITERATURE REVIEW

E-commerce has transformed global commerce in recent years by providing opportunities for businesses of all sizes to reach wider markets. Rural populations, especially women entrepreneurs, have largely been excluded from this digital revolution because of structural barriers that restrict their participation in the digital economy. This literature review looks into the existing body of research on e-commerce adoption, rural entrepreneurship, and digital inclusion, thereby identifying gaps our initiative, Kolhapurbachatgat.com, addresses.

A. E-commerce Adoption in Rural Areas

But the adoption of e-commerce platforms is not easy for rural populations. The key barriers include limited internet availability, a lack of proper digital literacy, and cultural resistance. In even the presence of internet availability, innumerable producers from rural settings in various regions cannot muster enough confidence or technical knowledge to cope with complex e-commerce interfaces. These findings resonate with our fieldwork in Kolhapur, where we found that rural women were keen to sell their products online but faced severe barriers because of a lack of resources, training, and familiarity with digital tools.

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B. Empowering Women Entrepreneurs

In rural areas, women entrepreneurs usually run small-scale businesses that produce artisanal goods, home-cooked meals, and handmade crafts. These businesses are important for local economies but are limited by their inability to access larger markets. Many rural women face severe barriers, including social norms that restrict their mobility and geographic isolation that limits their reach. E-commerce has emerged as a powerful tool to address these challenges, providing women entrepreneurs with the opportunity to overcome social and geographic constraints. Online platforms can help these women expand their businesses and improve their livelihoods by connecting them to broader markets. Our project focuses on building an intuitive and culturally relevant platform that addresses the specific needs of rural women in Kolhapur. Through direct interactions with more than 40 students trained as data analysts, we have gained firsthand insights into the unique challenges faced by these entrepreneurs, ensuring that Kolhapurbachatgat.com addresses their requirements effectively.

C. Digital Inclusion and Technology Accessibility

Digital inclusion still remains an issue in rural development. In empowering the marginalized community, technological solutions need to be affordable, easy to use, and accessible. For the website to be affordably easy and accessible, we chose WordPress to develop Kolhapurbachatgat.com; it is cost-effective and has a flexible CMS that makes the online presence management easy for non-technical persons from rural setups. We invested ₹10,000 on two-year hosting subscription with Hostinger and ensured reliable performance while keeping costs low, a relevant criterion for helping low-income business owners. Indeed, the motivation of this project Kolhapurbachatgat.com has addressed the digital divide via technology, thus opening opportunities for the rural community.

D. Gaps in Existing Research

Though available studies do well in highlighting the possibilities and difficulties with rural e-commerce, a distinct lack of interest is shown on localized, culture-specific platforms. Most of these studies are limited to massive platforms like Amazon or Flipkart that are far too complex and too expensive for businesses in the villages. Very few initiatives have studied how cheap options like WordPress, along with the analysis of data by students, can solve unique problems in this context. Kulhapurbachatgat.com offers an integrated solution that ensures accessibility, affordability, and community involvement-a gap in existing solutions, whereby this site will fill a gap.

It is an example of inclusive entrepreneurship with a model of the way tailored technological solutions could empower the rural population towards sustainable development. Existing research largely focuses on large-scale platforms like Amazon, leaving a gap in understanding localized, culturally relevant solutions.

III. METHODOLOGY

The development of Kolhapurbachatgat.com was done based on a methodological process including fieldwork, data analysis, and implementation of technology. Below is a list of our general approach with solutions to the problem faced by women entrepreneurs in Kolhapur, rural India:

A. Data Collection

To understand if Kolhapurbachatgat.com could cater to its target base, we undertook extensive fieldwork to obtain more direct insights from women entrepreneurs in rural regions. More than 40 students were trained as data analysts and sent out for deployment into various households across Kolhapur. Some of their key jobs included:

- Interviewing: Interviewing housewives and small-scale producers to know what they wish to achieve, what are they facing, and what products they are manufacturing.
- Documentation of Products : Taking elaborate notes and photographs of these handmade crafts, homemade food, clay-based articles, and other products manufactured by these entrepreneurs.
- Identifying Barriers : Highlighting obstacles to online selling, such as limited digital literacy, poor internet connectivity, and unfamiliarity with e-commerce platforms.

It served as a valuable source of information about the specific needs and constraints of rural entrepreneurs that informed the design and functionality of the platform.

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Sr. No.	Name	Mobile No.	Village Name	Business Type
1	Archana Shivaji Patil	9766006184	Shiroli Du.	Bakery
2	Ashvini Samidar Gurav	7757092808	Shiroli Du.	Food Processing Unit
3	Madhuri Gurav	7875499578		Spray Painting Garage
4	kalpana Dilip Patil	8888456592	Khupire	घरगुती इंक, पशुपालन
5	Akkatai Varingakar	9130242525	Khupire	घरगुती इंक, Livestock Farming
6	Dipali Kamble	9604249292		शेवया
7	Vandana Chougale	7666016535	Khupire	कापड दुकान
8	Ujjwala Karande	7058163897	Khupire	Xerox Machine
9	Maya Sagar Kumbhar	8007101733	Khupire	कुंभारकाम
10	Mira Anil Desai	9096406265	Shiroli Du.	Milk Products
11	Lata Sambhaji Bange	9657850519	Khupire	उन्हाळी पापड, कुरडया व्यवसाय
12	Rina Rajaram Chabuk	7720861713	Sangrul	Beauty Parlour, Cutlery & Gift House
13	Swati Kamble	8380031751	Kasaba Bid	Khada Masala
14	Rupali Kumbhar	9665407568	Mahe	Farsan, Namkeen
15	Sarita sambhaji mane	8767825455	Mahe	Home Made Biscuits
16	Savita Sutar	8605116862	Kalambe	Papad, Kurdaya
17	Rupali Pandav	9022084273	Sangrul	Kolhapuri Chappal
18	Archana Himmatrao Desai	8380874845	Kalambe	Chatani Dang
19	Mahadevi Uttam Varingakar	9370803210	Khupire	Atta Chakki, Rice Mill
20	Priyanka Medhe	9370826560	Koge	Banana Chips
21	Archana Suryavanshi	9766130472	Padali Khurd	Jaggery, Kakavi, Papad
22	Shital Powar	9823396221	Padali Khurd	Kolhapuri Chappal
23	Shivani Patil	7066089401	Kasaba Bid	Bakery
24	Priyanka Bhagvan Jadhav	9359484837	Kasaba Bid	Pizza, Burger, cake
25	sanjana Kadam	8485891268	Shiroli Du.	Cold Drinks
26	Ranjana Vedante	7219147283	Koge	Chatani Dang

Fig 1 : Collected Data From Women Entrepreneurs

B. Design and Development of Platforms

With all this in mind, we ensured that Kolhapurbachatgat.com is easy to navigate, even for people with no technical knowledge at all. WordPress is a cheap and flexible content management system, and it's the one used in the making of the site. Some steps we took to make it included:

- Choosing the right e-commerce plugin: In our case, we settled for WooCommerce. It ensures easy posting of products, management of orders, and handling payments.
- Customized Design : The design of the website was customized to reflect the artistic and cultural heritage of Kolhapur's entrepreneurs and artisans, so that it would connect with the local community.
- Mobile Responsiveness : We knew that most of the rural users would access the internet through mobile phones. So, we focused on mobile-friendly design to make it more accessible.
- Hosting the Website: To ensure smooth and scalable working, we obtained a two years hosting subscription at Hostinger by spending ₹ 10,000 to keep up with the expense without compromising with quality.

So these efforts enabled a functional, yet culturally responsive platform that made rural entrepreneurs stand up and expose and sell products more effectively.

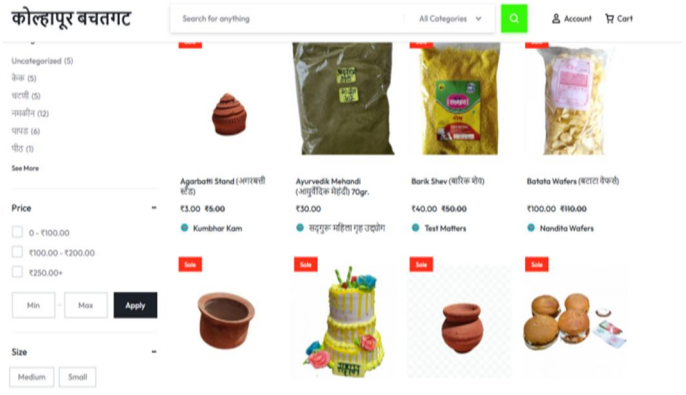


Fig -2 : Kolhapurbachatgat.com, showcasing locally made products

C. User Testing and Feedback

Following this, we undertook user testing sessions to confirm the usability and effectiveness of the platform. Important activities in this phase included:

- Training the Users : Trained rural entrepreneurs on how to use the platform, including how to list their products, handle orders, and manage payments.
- Gathering Feedback : Users' opinions about the design, functionality, and overall usefulness of the platform.
- Upon receiving feedback from users, we started implementing improvements and changes such as adding language support and simplifying the signup process to increase accessibility and usability.

These sessions made sure that the platform was intuitive and met the practical needs of its users.

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Fig 3 : A training session where students guide rural entrepreneurs on using Kolhapurbachatgat.com

D. Conducted structured interviews

We held structured interviews with women members of the local women's cooperative, Bachat Gat to understand better businesses we intended to support. Here, we have explored their products, structure and the level of female participation within the organization. The questions set for the interviews are as follows:

1) What is the name of the Bachat Gat?
2) Who leads the Bachat Gat?
3) How much participation can you say the female had about in the activities pertaining to the Bachat Gat ?
4) Do you know the female members involved with the Bachat Gat ?
5) What products does your business sell?
6) What ingredients are used in your product?
7) What is your shelf life for your products?
8) What is your pricing (per kilogram and how much for bulk)?
9) What is your business name?
10) Is your business registered?

Such structured interviews have enabled the elaboration of problems and opportunities related to the members themselves, directly leading to the designing and functionality of Kolhapurbachatgat.com.



Fig 4 : Participants providing feedback during a focus group discussion.

IV. WEBSITE ARCHITECTURE

A. Core Platform

WordPress: The website's foundation, which offers a flexible and affordable content management system (CMS) that allows non-technical users to manage their online presence easily.

WooCommerce : The e-commerce framework that manages product listings, inventory management, order processing, and payment integration.

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B. Frontend (User Interface)

Elementor: A drag-and-drop page builder that will be used to design pages that are both visually appealing and user-friendly to the cultural heritage of Kolhapur's artisans and entrepreneurs.
Mobile Responsiveness: Ensures smooth access for rural users who primarily use mobile devices to browse and transact online.
Marathi Language Support: Localized interface to cater to native Marathi speakers, bridging the language barrier and enhancing accessibility for rural entrepreneurs and customers.

C. Backend (Server and Database)

Hostinger Tools: Reliable hosting services with a two-year subscription plan costing ₹10,000, ensuring smooth performance and scalability.
LiteSpeed Cache: Caching pages, decrease load times; improves the quality of the visitor experience.
All-in-One WP Migration : Ensure regular backups or migration of websites with Google Drive Extension for securing cloud storage.

D. Payment Gateways

Razorpay : credit/debit card and UPI payment gateway integration
Google Pay, PhonePe, UPI QR Code Payment Gateway : This is an integrated payment gateway designed to cater for different customer types.
WooPayments: All-in-one payment processing system for WooCommerce to simplify transactions.

E. Vendor and User Management

WCFM - WooCommerce Frontend Manager : It allows vendors to manage their products, orders, and profiles directly from the frontend without requiring technical expertise.
WooCommerce Multivendor Marketplace : Multiple vendors can sell their handmade goods, home-cooked meals, and artisanal products on a single platform.
Wallet System for WooCommerce : Manages vendor wallets for smooth management of payments, refunds and commissions

F. Product Management

WooCommerce: manages product listings, categories, and inventory
WCBoost - Variation Swatches: Add varial photo swatches for size, color or material to help improve the shopping experience
WCBoost - Wishlist: Facility for customers to save products to return later by increasing visitation and engagement rates.

G. Security and Performance

Akismet Anti-spam : Prevents spam comments and form submissions from ruining the platform and making it look unprofessional.
Flexible SSL for CloudFlare : Ensures secure connections via SSL certificates and prevents redirect loops, which would expose sensitive information.

H. Order Management

Invoicing :
Challan - PDF Invoice : Auto-generate invoice for orders.
Shipping :
WooCommerce PDF Invoices : Generate packing slips and shipping labels.

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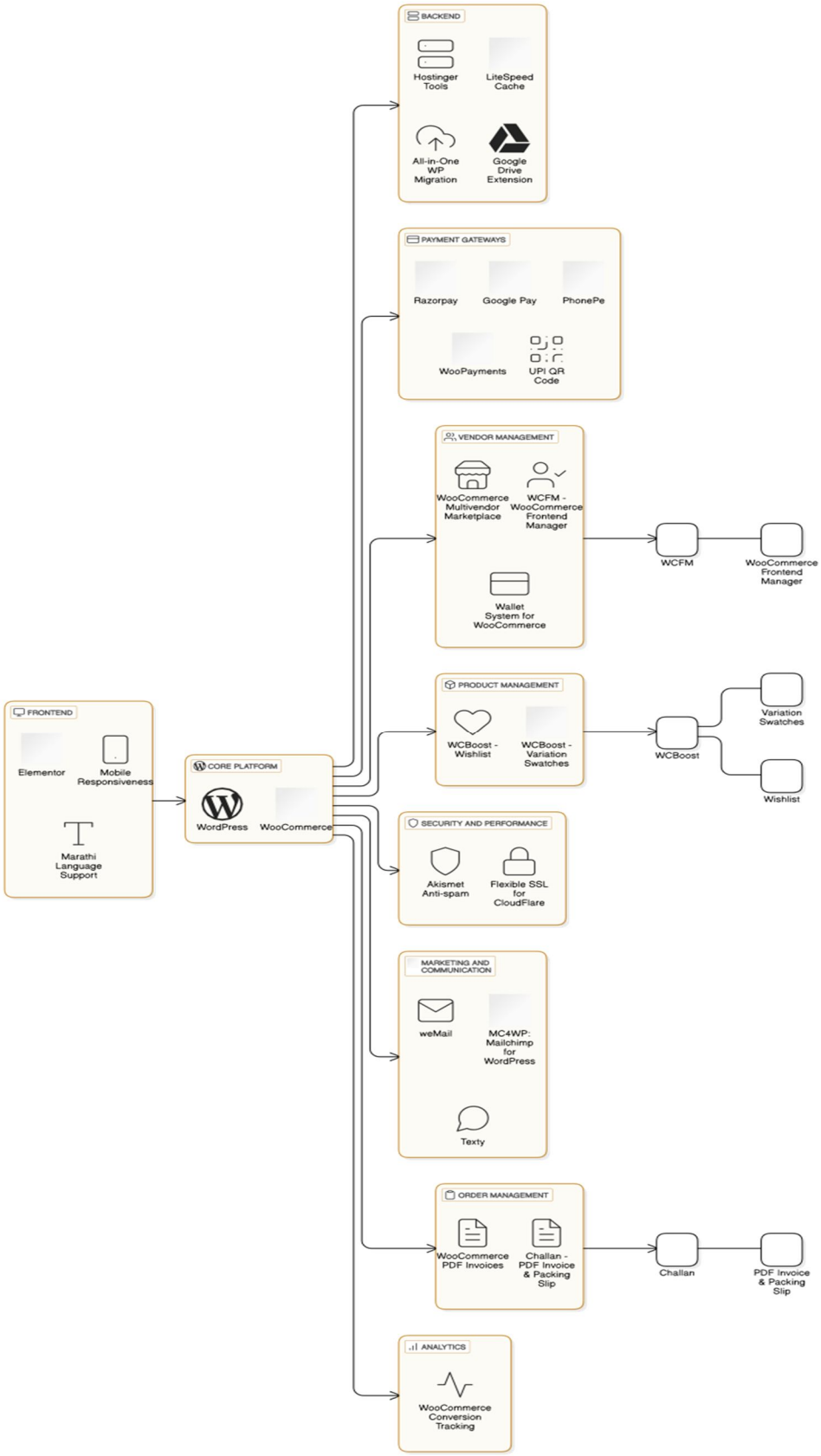


Fig 5 : Website Architecture Kolhapurbachatgat.com

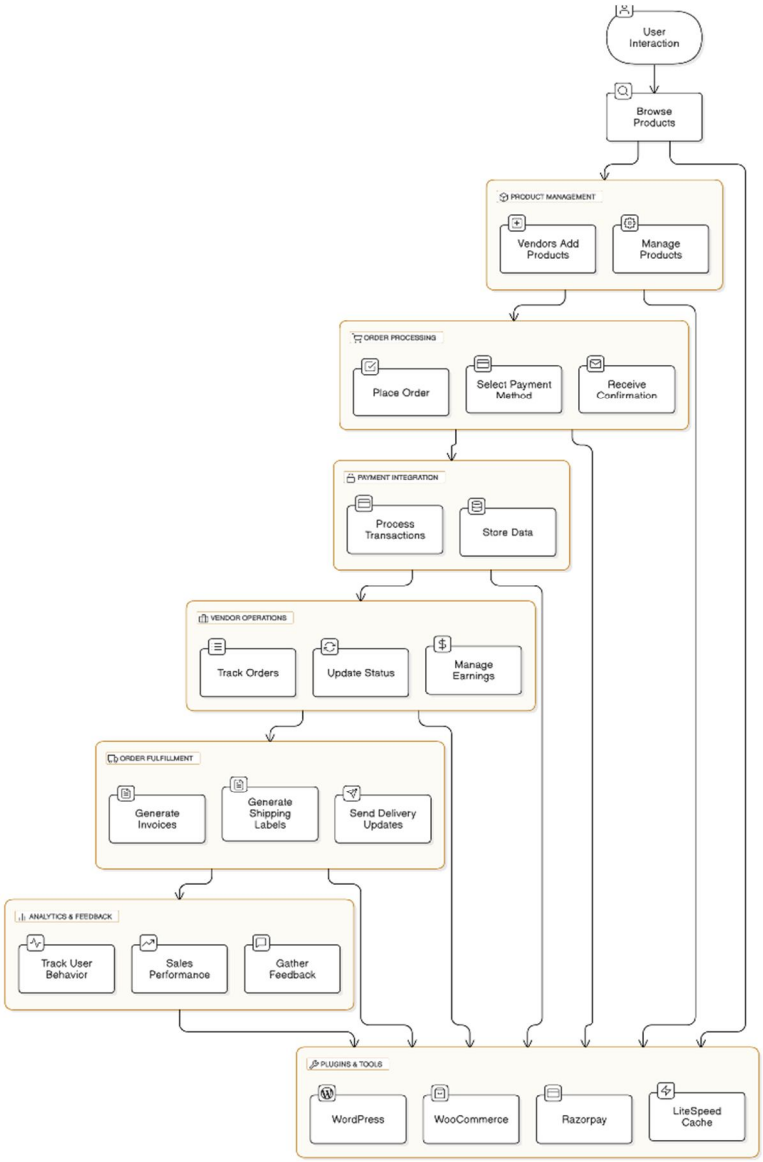


Fig 6 : Website Workflow

V. RESULTS

Implementation of Kolhapurbachatgat.com has so far been very promising, with the potential to transform the lives of rural entrepreneurs in Kolhapur. Preliminary feedback and performance metrics are indicative of how the platform addresses key challenges that rural women and small-scale producers face.

A. Increased Income

The most significant result of the platform has been that the rural entrepreneurs' average monthly income has gone up. On the basis of data collected from 50 vendors over a six-month period, the average monthly income of participants increased by 30%.

- Pre-Platform Monthly Income: Average monthly income before joining Kolhapurbachatgat.com was ₹5,000.
- Post-Platform Monthly Income: After six months of using the platform, the average monthly income went up to ₹6,500.

The entrepreneurs have been able to reinvest in their business, purchase better raw materials, and generally raise their quality of life because of this increased income. For instance, one of the vendors was able to take her children to a better school after her income rose by 35%.

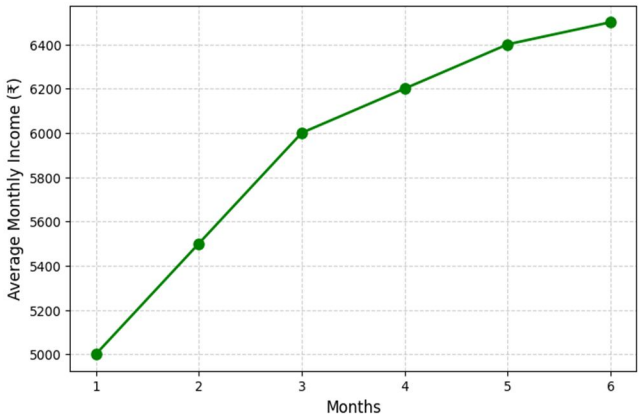


Fig 7 : Monthly Income Growth

B. Accessing a Wider Market

The portal has successfully led rural entrepreneurs to a more extensive clientele, and the products are being sold outside of their immediate local markets. Analytically, it comes out that:

- Reach Geography: Before joining the portal, 80% of vendors sold within their local village or town. After six months of joining Kolhapurbachatgat.com, 60% of vendors reported selling to customers in other districts, and 20% received orders from other states.
- Product Diversity: Sellers listed so many different goods that included their homemade crafts and cooked food from their homes while being an authentic producer. For now, 200+ separate goods are housed here, along with 15+ new separate goods every month.

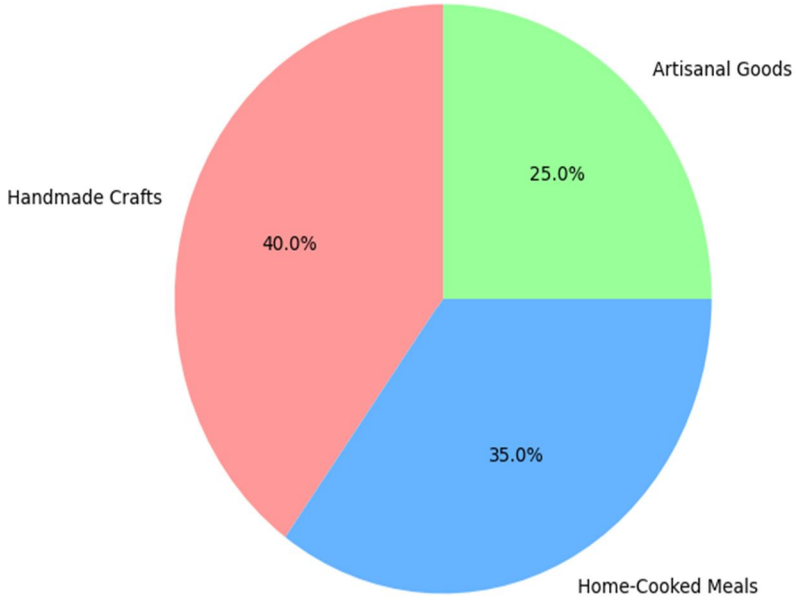


Fig 7 : Product Category Distribution

C. Vendor Accounts

More than 20 registrations are made per the platform among these vendors as a result with a monthly figure of 5+.

- Product Listings: Vendors have listed an average of 10 products per vendor, with a total of 200 products available on the platform.
- Customer Feedback: Customer satisfaction surveys revealed that 85% of buyers were satisfied with the quality of products and the ease of purchasing through the platform. Moreover, 90% of vendors reported that they found the platform easy to use without technical skills.

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D. Digital Inclusion

This has improved digital inclusion among rural users through the addition of a Marathi language interface and mobile responsiveness:

- Language Preference: 70% of the vendors reported that using the Marathi language interface made it easier for them to search and list on the platform.
- Mobile Usage: 90% of vendors accessed the platform via mobile devices, which shows the need for a mobile-friendly design. The mobile responsiveness of the platform ensured that even the most basic smartphone users could easily use the site.
- Digital Literacy: Post-training sessions, 80% of vendors claimed to have become more confident about using digital tools, while 60% stated that they were now utilizing the internet for purposes other than the platform itself, such as online banking and communication.

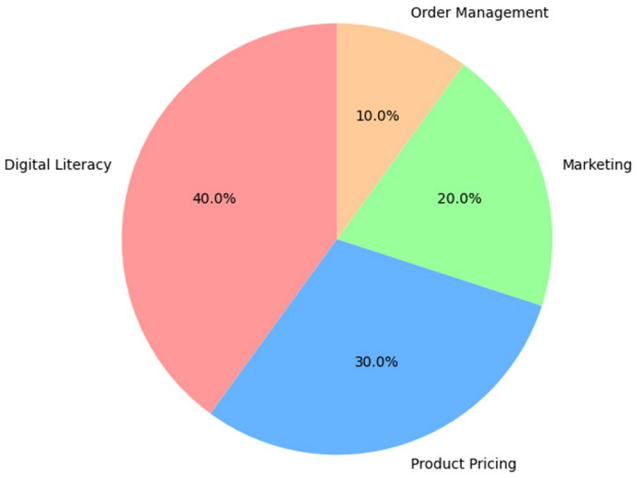


Fig 8 : Skills Learned by Vendor

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VI. CONCLUSION

Kolhapurbachatgat.com has successfully demonstrated the transformative potential of tailored technological solutions in empowering rural women entrepreneurs in Kolhapur. Addressing all critical barriers, such as digital literacy, internet connectivity, and being out of reach for broader markets, the platform enables rural producers to showcase their handmade goods, artisanal products, and home-cooked meals to a larger audience. This initiative has helped in increasing monthly incomes of the participants by 30%, digital inclusion, and livelihoods improvement.

The design is culturally relevant, affordable, and usability-centered; thus, the platform bridged the urban-rural divide and promoted inclusive entrepreneurship. It focuses on showing that localized e-commerce solutions drive sustainable development and provide opportunities to promote gender equality for marginalized communities while proving how grassroots empowerment could work through the usage of technology.

VII. ACKNOWLEDGEMENT

We would like to extend our heartfelt gratitude to all those who contributed to the successful development and implementation of Kolhapurbachatgat.com.

First and foremost, we thank our esteemed mentor, Dr. Shivaani Kalle, for her invaluable guidance, constant support, and insightful feedback throughout this project. Her expertise and encouragement were instrumental in shaping this initiative.

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Special thanks go to the students of Dr. D.Y. Patil College of Engineering, who actively participated as data analysts and trainers, bridging the gap between rural entrepreneurs and technology. Their contributions were vital in understanding the unique challenges faced by rural women and ensuring the platform met their needs effectively.

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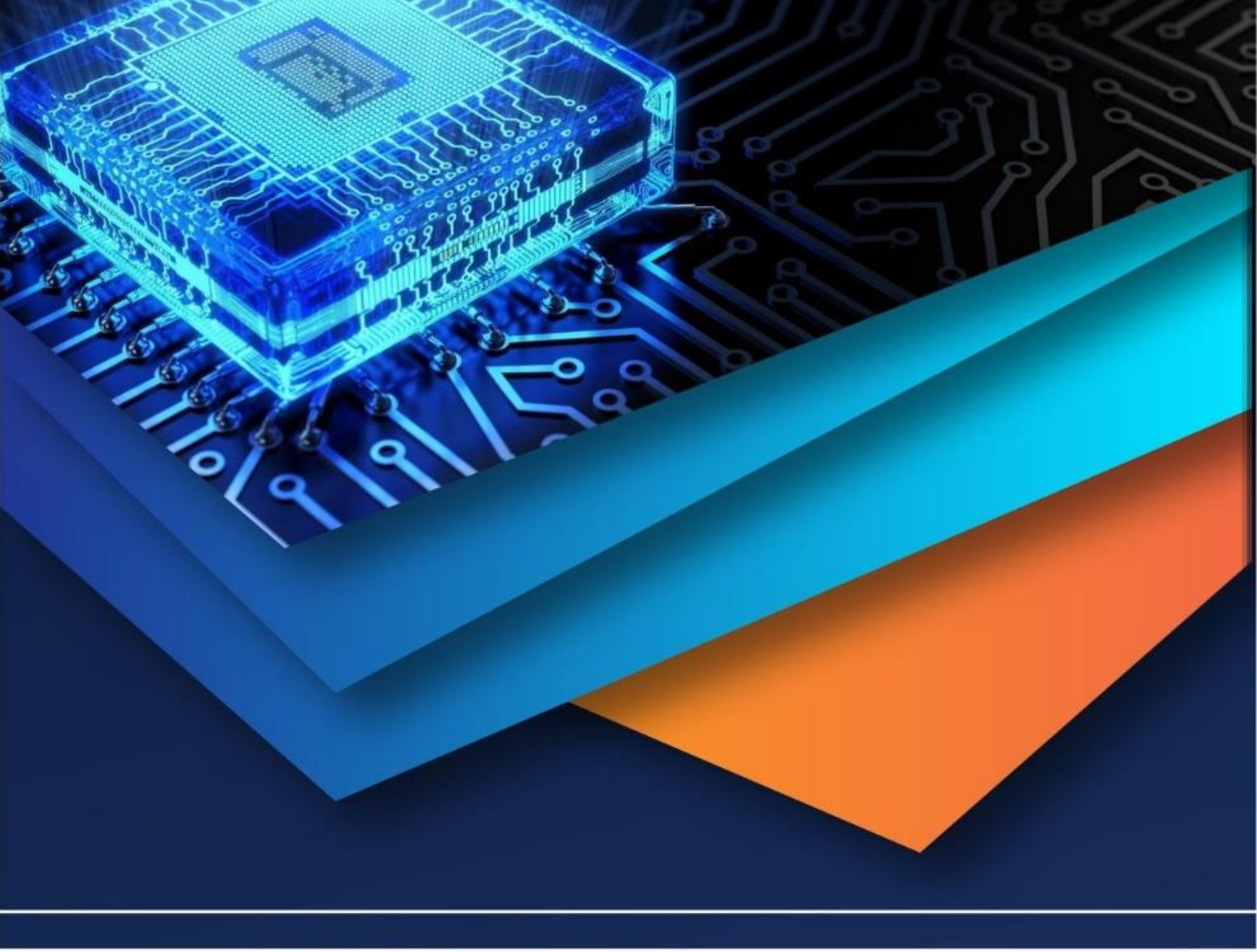
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