

Digitalization of Local Enterprises: Empowering Sewing Groups through a Modern Management System

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Abstract. This community engagement program was initiated to address the managerial limitations, low competitiveness, and dependence on conventional practices experienced by the Izzalia sewing group in Maibit Village, Tuban. The group was selected as the object of service because it represents one of the largest local sewing businesses with high potential but was hindered by limited knowledge in marketing, financial management, and supply chain organization. These conditions created an urgent need for systematic interventions to enhance their sustainability and competitiveness.

The program introduced a technology-based business management system to facilitate concrete transitions: from manual bookkeeping to digital accounting applications, and from offline promotion to online marketing platforms. The main objective was to strengthen the group's capacity and economic independence through structured training and mentoring in modern marketing, financial management, and supply chain operations.

Using the Participatory Action Research (PAR) approach, the program was implemented through stages of assessment, program design, implementation, monitoring, and evaluation. Evaluation with the CIPP model (Context, Input, Process, Product) demonstrated effectiveness in the first three aspects, while refinement is still required in the product dimension, particularly the development of a raw material database. Overall, the training not only increased participants' knowledge but also accelerated their adoption of digital accounting systems and e-commerce platforms. This transition significantly improved efficiency, expanded market reach, and reflected the group's readiness to sustain technology-based practices.

Katakunci: Pemberdayaan Masyarakat, Manajemen Usaha Berbasis Teknologi, Literasi Digital, Kelompok Menjahit.

Abstrak. Program pengabdian masyarakat ini dilaksanakan untuk menjawab keterbatasan manajerial, rendahnya daya saing, serta ketergantungan pada praktik konvensional yang dihadapi Kelompok Menjahit Izzalia di Desa Maibit, Tuban. Kelompok ini dipilih sebagai mitra karena merupakan salah satu usaha menjahit lokal terbesar dengan potensi pengembangan tinggi, namun terhambat oleh keterbatasan pengetahuan dalam pemasaran, manajemen keuangan, dan pengelolaan rantai pasok. Kondisi

tersebut menegaskan urgensi perlunya intervensi sistematis guna meningkatkan keberlanjutan dan daya saing usaha.

Program ini memperkenalkan sistem manajemen usaha berbasis teknologi untuk memfasilitasi transisi nyata: dari pembukuan manual menuju aplikasi akuntansi digital, serta dari promosi luring menuju pemasaran daring. Tujuan utama program adalah memperkuat kapasitas dan kemandirian ekonomi kelompok melalui pelatihan terstruktur dan pendampingan dalam bidang pemasaran modern, manajemen keuangan, dan pengelolaan rantai pasok.

Dengan menggunakan pendekatan Participatory Action Research (PAR), program dilaksanakan melalui tahapan asesmen, perancangan, implementasi, monitoring, dan evaluasi. Evaluasi dengan model CIPP (Context, Input, Process, Product) menunjukkan keberhasilan pada aspek konteks, input, dan proses, sementara pada aspek produk masih diperlukan penyempurnaan, khususnya dalam pengembangan basis data bahan baku. Secara keseluruhan, pelatihan ini tidak hanya meningkatkan pengetahuan peserta, tetapi juga mempercepat adopsi sistem akuntansi digital dan platform e-commerce. Transisi ini terbukti meningkatkan efisiensi, memperluas jangkauan pasar, serta mencerminkan kesiapan kelompok Izzalia untuk mempertahankan praktik berbasis teknologi secara berkelanjutan..

1 Introduction

The term “elderly village” is often associated with settlements in Tuban Regency, East Java, due to the predominance of elderly residents as younger generations migrate to industrial cities. One example is Maibit Village, located in Rengel Subdistrict, where the majority of residents work as farmers or livestock breeders, mostly above 40 years old. Younger, productive-age residents tend to migrate to nearby industrial centers such as Gresik, Pasuruan, or Surabaya in search of better employment opportunities. According to the Central Bureau of Statistics (BPS, 2023), Tuban Regency still records a high poverty rate of 16.3% with a per capita income of IDR 371,465 per month, making it one of the most vulnerable areas in East Java. The closure of garment factories in Rengel since 2014 has further aggravated this condition, leaving many vocational graduates with sewing skills underutilized. Instead of applying their expertise locally, most prefer to seek jobs outside the village. This context illustrates the importance of community empowerment programs tailored to Maibit Village, especially for groups

like Izzalia Sewing Business Group, to optimize local human resources and strengthen rural entrepreneurship.

Table 1. Izzalia Business Group Products



Source: Badan Pusat Statistik (BPS)

According to BPS East Java data, Tuban Regency has one of the highest poverty rates compared to other districts in the province, averaging 16.3%, with a monthly per capita income of IDR 371,465, making it the fifth-highest in terms of poverty rate across East Java.

Table 2. Poverty Rate in Tuban Regency

Tabel Persentase Kemiskinan Kabupaten Bojonegoro, Ngawi, Tuban dan Lamongan Tahun 2015 - 2022				
Tahun	Bojonegoro	Ngawi	Tuban	Lamongan
2015	15,71	15,61	17,08	15,38
2016	14,6	15,27	17,14	14,89
2017	14,34	14,91	16,87	14,42
2018	13,16	14,83	15,31	13,8
2019	12,38	14,39	14,58	13,21
2020	12,87	15,44	15,91	13,85
2021	13,27	15,57	16,31	13,86
2022	12,21	14,15	15,02	12,53

Sumber : BPS Jawa Timur

Maibit Village in Rengel Subdistrict is one such example, where the majority of residents work as farmers or livestock breeders. These occupations are mainly undertaken by individuals over 40 years old, while younger generations continue to seek jobs elsewhere. According to the Tuban Regency in Figures report (BPS, 2023), more than 52% of

the working population in Rengel Subdistrict is concentrated in the agricultural sector, with only a small fraction employed in manufacturing. This statistical evidence reflects the lack of local industrial absorption. As emphasized by the village head, H. Ahmad Ali:

“There used to be several garment and tailoring factories in the village. Many locals worked there, but since around 2014, most of them closed due to competition with cheaper Chinese products and the rise of online platforms. Many of our youth, who studied fashion at SMKN Rengel, chose to use their skills to work in cities like Gresik rather than staying in the village.”

This statement reflects a significant skill–utilization gap: despite possessing relevant vocational skills, local youth This combination of statistical data and community testimony highlights the economic gap in Maibit Village, particularly the underutilization of sewing and tailoring skills among local youth, lack the infrastructure, digital literacy, and motivation to pursue entrepreneurship within their own community. This gap represents a form of underutilized human capital that can be addressed through targeted empowerment strategies.



Figure 1. Izzalia Business Group Products

One promising local enterprise that reflects both the challenges and opportunities of rural entrepreneurship is Izzalia, a home-based sewing business group located in Maibit Village. Founded in 2014 by Mrs. Lutfi, a sewing instructor at SMKN 1 Rengel, Izzalia emerged as a response to the diminishing garment industry presence in the region and

the increasing number of skilled youth who lacked employment opportunities within their own community. The group specializes in producing handmade eco-printed bags, a niche product with potential appeal to environmentally conscious consumers. The group specializes in producing handmade eco-printed bags, a niche product that currently targets environmentally conscious consumers, particularly young urban women and students in Tuban, Gresik, and Surabaya. On average, the group produces 40–50 bags per month with sales ranging from IDR 50,000 to 150,000 per piece, generating an additional monthly income of around IDR 2–3 million for its members. Beyond production, Izzalia also functions as a collaborative space. This aligns with the findings of Farida & Ramli (2023), who emphasize that empowering women through digital platforms enhances both household income and community resilience.

Despite its potential, Izzalia continues to face significant structural and operational limitations common to many rural microenterprises. The group still relies heavily on conventional management practices. Marketing efforts are limited to word-of-mouth and occasional social media activity, which constrains visibility and customer acquisition. Financial records are manually kept, increasing the risk of data loss and making financial analysis difficult. Furthermore, the absence of an integrated inventory, customer, and supplier management system hampers scalability and reduces operational efficiency. These challenges not only limit the group's growth but also threaten its sustainability in the long term, especially in a competitive and increasingly digital marketplace.

Similar findings have also been reported in other rural SMEs. Rahayu & Day (2015) noted that Indonesian MSMEs often face barriers in adopting e-commerce due to limited digital literacy and inadequate infrastructure. Likewise, Tambunan (2024) emphasized that microenterprises in East Java tend to rely on informal financial records and traditional marketing, leading to inefficiencies and low competitiveness. In line with these studies, Izzalia's limitations reflect broader structural challenges experienced by many rural-based SMEs,

particularly in transitioning from conventional to technology-enabled business systems.

These limitations reflect broader systemic issues that align with recent empowerment literature, which emphasizes that successful community development depends on enhancing psychological empowerment, fostering participatory competence, and ensuring access to institutional resources (Perkins & Zimmerman, 2019; Sulaiman & Ishak, 2021; Farida & Ramli, 2023). The case of Izzalia demonstrates the importance of equipping community groups not only with technical skills but also with the structural tools to support sustainable operations.

According to Vial (2019), it is not only about digitizing workflows but redesigning how value is created and sustained. For *Izzalia*, innovation lies in shifting from manual bookkeeping and offline sales to digital accounting, e-commerce, and supply chain coordination. Maibit Village was chosen because it reflects a typical “elderly village” with underutilized sewing skills and the decline of local garment factories, making it a strategic site to apply technology-oriented management as a model for rural empowerment.

This theoretical foundation informed the initiative to design and implement a technology-based business management system tailored to Izzalia’s context. Drawing upon prior research by Rahayu & Day (2015), which emphasized the importance of digital literacy and organizational readiness in SME digital adoption, and building on findings by Sukmasetya et al., (2021), who highlighted the positive effects of structured digital marketing training, the project addressed key capability gaps. However, unlike many programs that focus solely on marketing, this project employed a holistic model that integrated digital training across marketing, finance, and supply chain domains.

This study applied the Participatory Action Research (PAR) methodology, which emphasizes collaboration between researchers and community members in planning, action, observation, and reflection. The PAR cycle was carried out through assessment, program design, implementation, monitoring, and evaluation stages to ensure active participation and long-term ownership by the sewing group. For the evaluation stage, the project employed the CIPP model (Context, Input,

Process, Product), which allowed the team to measure not only technical outcomes but also the extent of community participation, capacity building, and sustainability of the program. This supports the university's role in community-based economic development Azwar & Hidayat (2021).

2 Method

This study adopts the Participatory Action Research (PAR), a collaborative research approach that involves community members as active participants in all stages—from problem identification to action and reflection (Chevalier & Buckles, 2019) (Afandi, 2019). PAR is widely used in community development due to its participatory and context-sensitive characteristics (Siregar & Wahyuni, 2022). The implementation followed a structured process adapted from Setiawati & Ardyanfirtiri (2023), consisting of three main stages: preparation, implementation, and evaluation. Evaluation was conducted using the CIPP model (Context, Input, Process, Product) to ensure that the program outcomes were relevant, efficient, and sustainable.

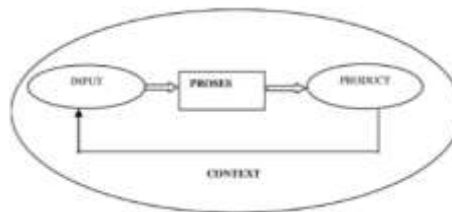


Diagram 1. CIPP Evaluation Model

The diagram above shows the CIPP Evaluation Model (Context, Input, Process, Product), which helps assess a program's effectiveness in a structured way. Context explains the background and needs that make the program relevant to the community. Input includes the resources used, such as funds, people, facilities, and methods, which are evaluated to see if the program is ready to run. Process describes how the program is carried out, including strategies and community participation, while Product refers to the results or outcomes achieved. These four components are connected and influenced by the overall context. The feedback loop from product to input shows that evaluation results are used to improve future programs.

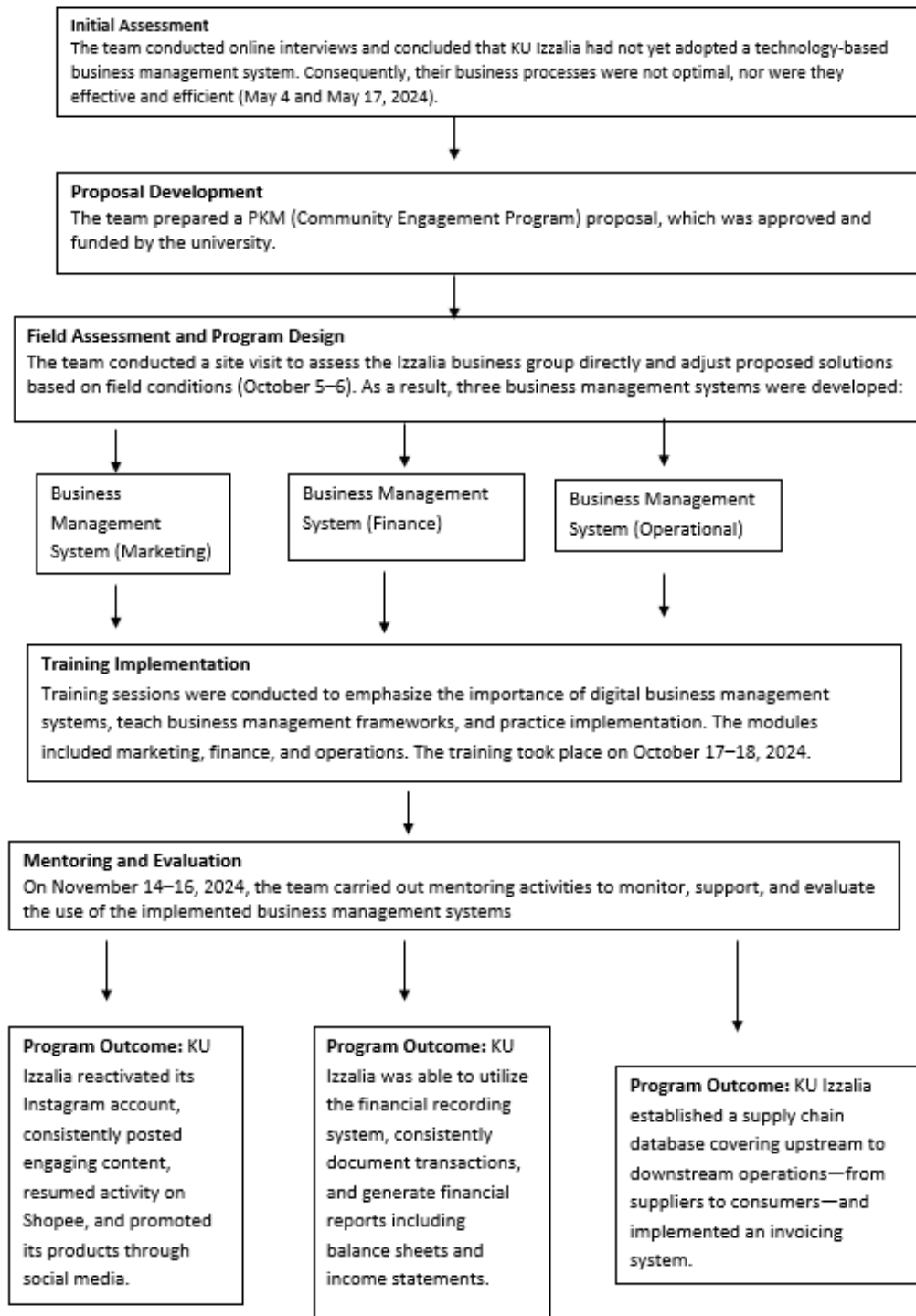


Diagram 2. Community Engagement Framework

3 Results

a. Preparation

A thorough needs analysis allowed the team to design appropriate and targeted interventions for KU Izzalia. Through interviews and direct observation, the team identified several key challenges hindering the group's growth. These included limited knowledge and use of digital marketing tools, reliance on manual financial recordkeeping, and the absence of structured inventory or supply chain documentation. These findings shaped the design of customized training modules that addressed each issue in depth. The needs assessment ensured that the content delivered during the program was highly relevant, practical, and aligned with the actual capabilities and priorities of the participants.

b. Implementation

The training sessions were well received and conducted in a structured and participatory manner. Each module was carefully designed to align with the specific needs and capacities of the Izzalia business group, ensuring that the learning process was both relevant and practical.

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On the first day, the focus was on digital marketing, which generated strong enthusiasm due to its direct relevance to participants' needs. Facilitators introduced tools such as Instagram Business and Shopee, while participants practiced creating product content, uploading posts, and optimizing engagement through captions and hashtags.

On the second day, the training centered on financial literacy and digital bookkeeping. Participants learned to shift from manual notebooks to Excel-based templates, which enabled them to record income, expenses, and profits more accurately and transparently.

On the third day, the program addressed supply chain management. The facilitators guided the group in building a simple vendor database, designing inventory sheets, and preparing customer invoices, which improved professionalism in transactions.

Finally, on the fourth day, the emphasis was on integration and sustainability. The group was encouraged to review all digital tools introduced, evaluate their usability, and design an action plan to embed these practices into daily operations. Collectively, these sessions not only equipped participants with new technical skills but also fostered confidence in adopting modern, technology-based management practices.



Figure 2. Training Session Activities

c. Evaluation

Evaluation results showed notable improvements in marketing, financial management, and operations. The training provided Izzalia with practical tools and digital systems that enhanced efficiency. Participants adopted new habits and demonstrated strong engagement. Overall, the program laid a strong foundation for transitioning to modern, technology-driven business practices that are scalable and sustainable, and also reinforces the importance of digital literacy for long-term sustainability. (Kurniawati & Prasetyo, 2023)

Table 3. Evaluation Process and Product Outcomes

No	Model	Description
1	Context	The program was founded on clearly stated objectives established by the university, including promoting digital

		empowerment, modernizing business practices, and supporting rural economic resilience. These goals were supported by institutional funding and formal planning documents, ensuring the intervention was well-aligned with KU Izzalia's needs. The contextual relevance of this initiative reflects what Afandi (2019) highlighted as crucial in ensuring effective engagement—programs must be both administratively strong and locally meaningful.
2	Input	Adequate human resources were provided through the involvement of experienced facilitators and vocational school partners, each formally assigned specific roles. Coordination was maintained effectively using WhatsApp and Google Meet. Materials such as Excel-based tools were uploaded to Google Drive to ensure broad accessibility and version control. Al-Ali (2020) emphasizes that resource readiness—especially technological preparedness—is a key factor in determining the success of SME digital transformation efforts.
3	Process	Training sessions were conducted smoothly and in line with the planned schedule. While all participants showed enthusiasm and punctuality, some modules—particularly financial reporting—required more time due to participants' limited prior exposure to spreadsheet tools. The facilitators adapted in real time, allowing slower learners to catch up. This kind of adaptive instruction aligns with Hidayati et al. (2020), who state that responsive facilitation significantly improves learning retention and participant satisfaction in empowerment programs.
4	Product	The program resulted in multiple concrete

outputs. KU Izzalia reactivated its Instagram and Shopee accounts and began publishing consistent, engaging product content. Members adopted Excel-based financial tracking, documented daily transactions, and generated summary financial reports. Additionally, they built a supplier-customer-materials database and implemented an invoicing system. These results indicate that the digital tools introduced were successfully integrated into everyday business practices (Stufflebeam & Zhang, 2017).

4 Discussion

This program successfully contributed to improvements in digital marketing, financial management, and supply chain operations at Izzalia.

a. Enhancing Digital Marketing

Prior to the implementation of the training program, KU Izzalia relied heavily on traditional promotional methods—primarily word-of-mouth and occasional participation in offline community bazaars. While this strategy had previously sufficed for small-scale operations, it significantly limited the business group's ability to expand its customer base beyond the immediate village community. Their official Instagram account (@izzalia.id) existed but had been inactive for several months, and the Shopee marketplace account, once created in 2016, had not been used effectively since then. As a result, the business had very little digital presence, which translated into low visibility and stagnant sales.

According to Apriliyanti et al. (2020), social media platforms such as Instagram and Shopee offer cost-effective promotional tools that are especially suitable for micro and small enterprises in rural areas, enabling them to reach wider markets with minimal resources. The digital marketing training module was designed to address this critical gap. It introduced participants to the fundamentals of digital branding, content creation, and customer engagement strategies

through social media platforms. The sessions began with basic platform navigation—setting up Instagram Business accounts, learning the difference between personal and commercial features, and understanding follower engagement metrics. Practical exercises included taking high-quality product photos using mobile phones, writing clear and persuasive product descriptions, and scheduling posts for consistent visibility.

One key aspect of the training was the introduction of Instagram Ads and the use of hashtags and geotagging to target specific customer demographics. Participants learned how to allocate small promotional budgets to test the effectiveness of paid advertisements and how to read basic ad analytics to assess performance. Additionally, they were encouraged to interact with similar small businesses to build networks and increase organic reach. Another focus area was Shopee, one of the largest e-commerce platforms in Southeast Asia. The team guided participants through the process of reviving the dormant Shopee account, uploading product listings, setting prices, managing stock, and processing orders. Particular attention was given to building trust through buyer communication, managing product reviews, and utilizing Shopee's promotional tools such as flash sales and free shipping vouchers.

The outcome of this intervention was immediately visible. Within a few weeks post-training, KU Izzalia began consistently uploading content to Instagram, including behind-the-scenes production videos, customer testimonials, and thematic product showcases. The follower count increased steadily, and engagement through comments and direct messages indicated rising interest. More importantly, orders from outside Tuban started to materialize—some through direct Instagram inquiries, others via the revived Shopee account.

Beyond technical skills, the training fostered a change in mindset. Izzalia members began to understand the importance of maintaining an active and professional digital presence. They also developed the confidence to explore other platforms like Facebook Marketplace and TikTok for business. This shift is consistent with findings from Supriadi

et al. (2021), who argue that digital marketing training for rural entrepreneurs not only increases market access but also instills entrepreneurial agility.

Overall, enhancing digital marketing capacity empowered KU Izzalia to shift from passive promotion to proactive market engagement. It allowed the group to extend their reach, build brand identity, and compete more effectively in today's increasingly digital economy. Nugroho and Andriani (2022) emphasize that the post-pandemic era has accelerated the urgency for rural microenterprises to adopt digital tools, not only to recover but also to remain competitive in an increasingly technology-driven economy.



Figure 3. Digital Marketing Session by Mrs. Nisa



Figure 4. Reactivated Instagram Page with New Content

b. Integrated and Efficient Financial Management

Previously, KU Izzalia relied on fully manual methods for recording financial transactions. Income and expenses were noted in physical notebooks or on loose paper sheets. While this approach offered

simplicity, it posed several risks, including the possibility of data loss, calculation errors, and difficulty in generating summaries or tracking business performance over time. The absence of structured financial documentation also made it difficult for the group to make informed decisions, monitor profitability, or prepare reports for external stakeholders or funding applications. To address this limitation, the training program introduced a digital financial management system using Microsoft Excel, integrated with cloud storage via Google Drive. Fitriyani and Azis (2020) found that introducing cloud-based financial recording tools to microenterprises significantly improves the accuracy, security, and traceability of business transactions, making them better prepared for external reporting and funding opportunities.

The training began with a foundational session on understanding basic financial principles such as cash flow, income versus expenses, and balance sheets. Participants were then guided through Excel's functions for simple bookkeeping, including how to input transactions, calculate totals using formulas, and create monthly summary tables.

One significant feature emphasized during the training was the use of templates designed specifically for micro-enterprises. These templates allowed users to easily categorize income and expenses, set monthly targets, and visually track progress through charts. Storing the files in Google Drive provided the additional benefit of secure backup, accessibility from multiple devices, and the ability to share data among team members for collaboration. Although some participants initially struggled—particularly those unfamiliar with spreadsheets—the facilitators provided step-by-step guidance, peer-to-peer assistance, and practice assignments to ensure mastery. By the end of the training, all participants were able to document daily transactions digitally, organize receipts and financial evidence, and generate simple profit-and-loss reports.

Beyond skill development, the transition to a structured financial system improved transparency, enhanced accountability, and prepared KU Izzalia to meet the administrative standards often

required by formal institutions and potential investors. Similarly, Maulidiyah, Fatimah, and Ramadhani (2022) emphasized that cloud-integrated systems enhance accessibility and facilitate team collaboration, which is particularly beneficial for rural enterprises with shared responsibilities among members.

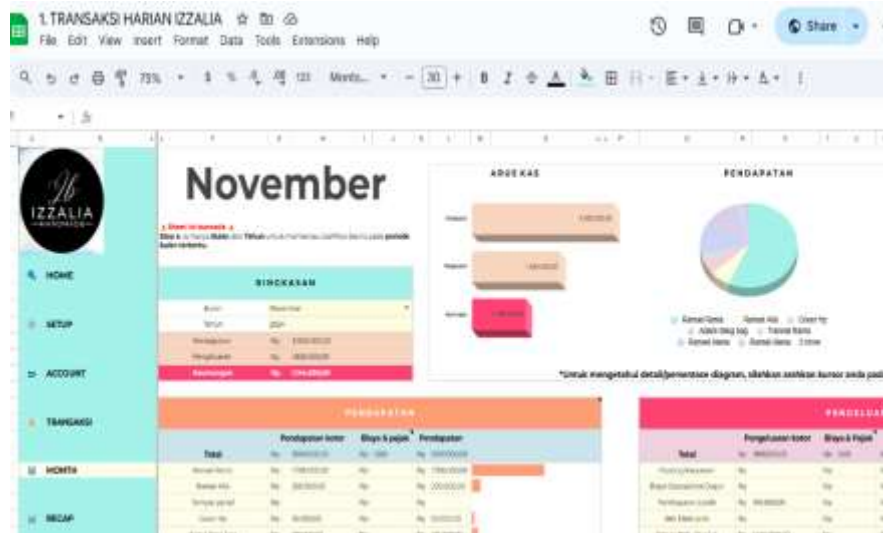


Figure 5. Participant Completing Daily Transaction Records

c. Supply Chain Management Integration

Prior to the intervention, KU Izzalia did not have a systematic approach to managing its supply chain. Information regarding suppliers, raw materials, inventory levels, and customers was scattered, often held individually by members or recorded informally on paper. This fragmented system made it difficult to track procurement patterns, anticipate shortages, or analyze the costs and frequency of purchases. Furthermore, the lack of an invoicing system posed challenges in maintaining transparency and professionalism when interacting with customers and suppliers.

Recognizing the importance of structured operations, the training team introduced a digital supply chain management system tailored for micro-enterprises. The system included modules for vendor tracking, inventory control, customer databases, and invoicing—organized within an accessible Google Sheets interface. This structure allowed participants to easily input and update data while collaborating in real time.

One of the core features developed was a vendor database, as shown in the "Daftar Vendor" screenshot. It contains columns such as List Vendor, Jenis Produk atau Layanan, and Nama Kontak. Through this system, KU Izzalia categorized suppliers by the type of material or service they provided (e.g., fabric, buttons, thread, accessories), and included names and contact details for easy follow-up. By digitizing this information, the group reduced its reliance on memory or informal WhatsApp chats and created a foundation for supplier evaluation, price comparison, and repeat ordering. As noted by Wahyuni and Yuliana (2021), implementing digital supply chain systems allows SMEs to manage supplier relationships, material flow, and customer data more efficiently, leading to improved responsiveness and business continuity.

In addition to vendor data, the training emphasized the importance of maintaining up-to-date inventory records. Participants learned to monitor stock levels of fabrics, accessories, packaging, and finished goods. This helped prevent over-ordering or running out of essential materials, especially during large orders or seasonal peaks. The team also introduced techniques for coding and categorizing inventory items, enabling better reporting and forecasting.

Despite facing initial challenges—especially in quantifying irregular or small-volume raw materials—participants committed to consistently updating the system. Several members were assigned to oversee specific areas such as fabric tracking or finished goods documentation. This delegation helped distribute responsibility and improve accountability. The invoicing component of the system was also a major upgrade. Prior to the program, sales were often handled informally, without receipts or structured billing. With the new system, KU Izzalia began issuing basic invoices for customer orders. This not only enhanced professionalism but also made it easier to track revenue and resolve disputes. Participants were trained on invoice formatting, tax labeling (when applicable), and numbering systems.

The transition to a structured supply chain management approach brought several benefits: reduced miscommunication, better stock

visibility, improved coordination with vendors, and a more professional image to customers. Furthermore, the system can be scaled or integrated with future digital tools such as barcode scanning or mobile inventory apps.

This experience aligns with Fajri et al. (2021), who found that SMEs adopting even simple digital inventory systems experienced increases in operational efficiency and customer satisfaction. This finding is consistent with Sari and Nurhaliza (2023), who concluded that digitalization of production and inventory tracking increases operational efficiency and reduces errors caused by manual oversight, especially in resource-limited small business settings. This initiative reflects a localized form of social entrepreneurship, echoing Setiawati and Tantriana's (2024) findings on institutional independence through structured management in pesantren context. By investing in foundational supply chain tools, Izzalia is now better positioned to handle larger orders, maintain service quality, and grow sustainably.

5 Conclusion

This community service program has empowered the Izzalia business group in Maibit Village by guiding their transition from conventional to digital systems. Improvements were made in marketing, financial documentation, and supply chain operations. Members showed strong engagement and adaptability throughout the training. Their active participation indicates good potential for sustainability and further digital adoption. Continued mentoring and follow-up assistance are recommended to strengthen their newly acquired skills. The success of this program demonstrates a scalable and replicable model that can be adopted in other rural communities aiming to modernize their micro-enterprises through digital empowerment.

6 Acknowledgment

We would like to thank Universitas Islam Negeri Sunan Ampel Surabaya for the funding and institutional support provided throughout this program. Special appreciation goes to KU Izzalia and the people of

Maibit Village for their hospitality, cooperation, and enthusiasm. Their openness to learning and willingness to adopt change made the program impactful. Gratitude is also extended to students from SMKN 1 Rengel who actively participated in the sessions and provided valuable peer support. Their presence helped bridge generational learning and fostered a collaborative training environment that supported knowledge transfer and long-term community empowerment.

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