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Enhancing the Digital Readiness and Business Sustainability of Local Micro and Small Enterprises through Participatory Training, Mentoring, and Community-Based Capacity Building

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Abstract

Micro and small enterprises face persistent challenges in developing digital competencies, financial-management capabilities, and sustainable business practices. This study evaluated changes in digital readiness, financial-management capability, and sustainability-oriented business practices following an integrated community-based capacity-building program. A descriptive one-group pre-test/post-test evaluation involved 40 owners or managers of local micro and small enterprises. The intervention combined baseline capability assessment, participatory training, practical digital marketing and financial-management exercises, individualized mentoring, and post-intervention evaluation. Quantitative assessments used five-point capability indicators, supported by documented business outputs and facilitator observations. The results showed that overall digital readiness increased from 2.72 to 3.86, representing a 41.91% relative improvement, while financial-management capability increased from 2.40 to 3.78, equivalent to a 57.50% improvement. The proportion of enterprises meeting the digital-readiness threshold increased from 20.0% to 67.5%, while financial competency attainment increased from 22.5% to 72.5%. Participants also demonstrated improvements in digital marketing practices, transaction recording, and business planning. These findings indicate measurable short-term capability development associated with program participation. However, the absence of a comparison group limits causal interpretation, and the evaluation period does not establish long-term business sustainability. The study contributes an integrated community engagement framework combining digital training, financial-management development, and contextual mentoring to support practical enterprise capability formation.

Keywords: Community-Based Capacity Building, Digital Readiness, Micro and Small Enterprises, Participatory Training, Sustainable Business.



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INTRODUCTION

Digital transformation has become an important determinant of how micro and small enterprises respond to changing market conditions, manage organizational resources, and maintain business competitiveness. Its significance extends beyond the adoption of technological platforms to the development of managerial capabilities that support marketing, customer engagement, financial management, and operational decision-making. Previous studies indicate that successful digital transformation depends on the interaction of technological accessibility, digital literacy, entrepreneurial competencies, and organizational preparedness (Alam et al., 2022; Malodia et al., 2023; Zahoor et al., 2023). Digitalization also requires enterprises to integrate technological resources into established business processes rather than operate digital applications as separate instruments (Coco et al., 2024; Zhang et al., 2022). For micro and small enterprises, this transition presents particular difficulties because limited financial resources, technical expertise, and managerial capacity can restrict the effective utilization of digital technologies (Rupeika-Apoga & Petrovska, 2022; Šimberová et al., 2022). These constraints highlight the importance of developing practical competencies that enable entrepreneurs to adopt and manage digital business activities according to their operational needs.

Digital marketing constitutes a major component of enterprise readiness because it connects technological utilization with customer acquisition, market communication, and business development. Empirical research associates digital marketing strategies and e-commerce adoption with improvements in SME performance and selected financial and sustainability-related outcomes (Gao et al., 2023; Wu et al., 2024). Studies involving Indonesian enterprises similarly identify digital literacy, technological utilization, and marketing capabilities as relevant factors in business performance (Patria et al., 2023; Sudrajad et al., 2023). Nevertheless, access to digital platforms does not necessarily indicate that enterprises possess the capabilities required to develop promotional content, evaluate market responses, manage online transactions, or incorporate digital information into managerial decisions. Anatan and Nur (2023) identify organizational and individual dimensions of digital transformation readiness among Indonesian MSMEs, indicating that technological adoption must be accompanied by adequate competencies and managerial preparedness. Digital readiness is consequently understood in this study as the practical capacity to operate digital tools, manage online business communication, develop promotional materials, utilize e-commerce facilities, interpret basic digital performance indicators, and incorporate digital activities into routine enterprise management. This operational understanding distinguishes meaningful digital engagement from the mere availability of technological infrastructure.

Financial-management capability represents another essential component of enterprise development because increased digital activity does not automatically strengthen financial control or business resilience. Financial literacy and access to digital financial services have been associated with SME performance, while evidence from Indonesia identifies relationships between digital financial literacy, financial behavior, and financial well-being (Frimpong et al., 2022; Gosal & Nainggolan, 2023). Financial capability also interacts with entrepreneurial self-efficacy, market orientation, and organizational competencies, suggesting that effective financial management requires more than familiarity with accounting terminology (Mihardjo & Ningtyas, 2023; Rahadjeng et al., 2023). For enterprises operating with limited managerial resources, maintaining transaction records, separating business and household expenditures, calculating product costs, monitoring cash flow, and preparing financial reserves are practical activities that can support more informed business decisions. Integrating these competencies into digital capacity-building programs is particularly relevant because entrepreneurs may expand their online marketing activities without establishing the financial routines necessary to monitor the resulting transactions and expenditures.

Business sustainability introduces an additional consideration concerning the capacity of enterprises to maintain operations, manage resources, and respond to changing economic conditions. Existing research suggests that digitalization can support economic and environmental sustainability when technological practices are incorporated into organizational processes and responsible business management (Miranda et al., 2024; Trueba-Castañeda et al., 2024). The relationships among technological development, innovation, and sustainable entrepreneurship have also been examined as interconnected components of SME development (Avelar et al., 2024; Ozturk et al., 2024). In the present study, business sustainability is operationalized as sustainability-oriented managerial capability and observable business practices, particularly the ability to monitor financial conditions, manage operational expenditure, maintain customer relationships, prepare business continuity and reserve plans, and integrate digital tools into routine management. This definition concerns capabilities and practices that may support future business continuity rather than verified long-term enterprise sustainability. Changes in profitability, survival rates, employment, and environmental performance are not treated as directly established outcomes of the program. This distinction is necessary to ensure that the interpretation of sustainability remains consistent with the indicators and observation period employed in the evaluation.

Existing scholarship provides substantial evidence concerning the determinants and organizational implications of SME digital transformation, but a distinction remains between studies examining relationships among digital capabilities and business performance and community-based programs evaluating the application of newly acquired competencies. Research on digital marketing adoption has identified the relevance of organizational readiness and external business conditions (Su et al., 2023), while community engagement studies have documented the implementation of digital marketing training and assistance for micro and small enterprises (Afandi et al., 2023; Khikmah et al., 2023; Surahman et al., 2023). These contributions establish the practical relevance of enterprise

digitalization programs, although assessments focused on individual platforms or promotional activities provide a limited basis for understanding changes across interconnected managerial capabilities. Resource constraints and differences in technological preparedness further complicate the implementation of standardized training programs (Vuță et al., 2022). Practical assistance accompanying digital marketing instruction has been identified as a relevant approach to supporting enterprise capability development (Handy et al., 2024). However, the combined assessment of digital readiness, financial-management competencies, adoption of operational business routines, and sustainability-oriented capabilities within a single participatory intervention remains an area requiring more explicit empirical documentation. The specific gap addressed by this study concerns the limited integrated evaluation of how community-based training and mentoring are associated with changes across these capability domains, rather than the absence of digital training initiatives themselves.

To address this gap, the present community engagement program integrates participatory training, practical exercises, and individualized mentoring within a community-based capacity-building approach for local micro and small enterprises. The program involves 40 participating enterprise owners or managers and focuses on developing digital marketing competencies, financial-management practices, and sustainability-oriented business planning through activities adapted to participants' operational circumstances. The primary objective is to evaluate changes in digital readiness and financial-management capability between baseline and post-intervention assessments, examine the adoption of observable business practices following training and mentoring, and assess sustainability-oriented capabilities at the completion of the program. The central evaluation question is whether participating enterprises demonstrate measurable improvements in digital and financial capabilities and greater adoption of structured business practices following the community-based intervention. A descriptive one-group pre-test/post-test evaluation is employed to examine these changes, supplemented by documentation of practical outputs and mentoring observations. As no control or comparison group is included, the evaluation identifies changes associated with program participation without establishing that the intervention independently caused those changes. The study's contribution lies in providing an integrated, empirically documented assessment of short-term capability development and business-practice adoption, offering a practical basis for improving future community-based enterprise support programs.

METHOD

This study employed a community-based intervention evaluation using a one-group pre-test/post-test design within a participatory capacity-building framework. The approach combined quantitative descriptive assessment with documentation of practical business activities and facilitator observations to examine changes in digital readiness, financial-management capability, and sustainability-oriented business practices. The intervention followed five interconnected stages: initial capability assessment, participatory training, practical application, individualized mentoring, and post-intervention evaluation. The evaluation involved 40 owners or managers of local micro and small enterprises who participated in the program and completed the baseline and final assessments. Participant selection was based on three eligibility criteria: operating an active micro or small enterprise, willingness to participate in the program activities, and relevance of the enterprise's operations to digital marketing and technology-enabled business development. The evaluation focused on the participating enterprises rather than a statistically representative sample of the wider enterprise population. Since the design did not include a control or comparison group, the analysis was intended to identify changes observed during program participation rather than establish an independent causal effect of the intervention.

The initial assessment examined existing business competencies and operational practices across five interconnected areas: digital device and platform utilization, digital marketing, digital financial literacy, business record management, and sustainability-oriented business planning. Information collected during this stage informed the selection of training activities and the identification of enterprise-specific capability constraints. The intervention combined structured group instruction with supervised practical exercises using participants' existing products, customers, business records, and operational requirements. Digital training covered the establishment and improvement of business profiles, preparation of product descriptions and digital catalogues, development of promotional content, social-media account management, marketplace utilization,

customer communication, and basic marketing performance assessment. Financial-management activities addressed the separation of business and household expenditures, transaction recording, product-cost calculation, gross-margin assessment, cash-flow monitoring, budgeting, digital payment reconciliation, and financial reserve planning. Sustainability-oriented activities focused on business continuity preparation, management of operational expenditure, maintenance of customer relationships, and integration of digital tools into routine business decisions. These activities emphasized practical implementation using resources and technologies accessible to participating enterprises.

Mentoring was integrated into the intervention to support the application of training materials to participants' individual business circumstances. Facilitators provided guidance through individual and small-group assistance, reviewed completed exercises, identified difficulties encountered during implementation, and supported participants in adjusting their digital marketing and financial-management practices. Practical assignments included preparing digital promotional materials, developing product catalogues, establishing customer-response procedures, constructing transaction and cash-flow records, and formulating short-term marketing and business continuity plans. The mentoring process also accommodated differences in participants' initial digital competencies and operational experience, allowing assistance to address specific difficulties rather than applying identical practical requirements without regard to enterprise conditions. Participant outputs, facilitator observations, and mentoring documentation provided supplementary evidence of whether the capabilities addressed during training were reflected in observable business routines.

Program outcomes were assessed using structured capability indicators scored on a five-point scale, with higher values representing greater assessed capability. Digital readiness was evaluated through eight dimensions: basic digital-tool utilization, social-media account management, digital content production, digital branding and product presentation, marketplace or e-commerce utilization, digital customer engagement, digital performance analytics, and integrated digital marketing planning. Financial-management capability was assessed through nine indicators covering financial separation, transaction recording, cash-flow monitoring, product-cost calculation, gross-margin calculation, budgeting, digital payment reconciliation, financing assessment, and business reserve planning. Scores were summarized using arithmetic means for individual indicators and composite capability measures derived from their constituent indicators. A score of at least 4 on the five-point scale represented the higher-capability or competency threshold. For individual indicators, the threshold referred to the corresponding indicator score, whereas the overall threshold referred to the participant's composite capability score. The number and percentage of enterprises meeting each threshold were calculated using the 40 participating enterprises as the assessment denominator. These measures were interpreted as program-specific descriptive indicators of assessed capability rather than externally standardized or independently validated measures of enterprise performance.

Changes in the practical application of business competencies were evaluated separately through ten observable operational practices recorded at baseline and after mentoring. These comprised regular digital content scheduling, digital product catalogue availability, consistent product presentation, active marketplace management, customer inquiry procedures, digital transaction recording, monthly financial review, digital campaign performance assessment, written marketing planning, and business continuity or reserve planning. Each practice was summarized according to the number and proportion of enterprises demonstrating adoption at the respective assessment stage. Sustainability-oriented capability was additionally evaluated after mentoring through nine indicators addressing cash-flow monitoring, product profitability assessment, promotional expenditure planning, customer relationship maintenance, marketing performance evaluation, business continuity preparation, expenditure control, digital market expansion, and integration of digital tools into routine management. The sustainability-oriented composite represented capability at the conclusion of the program and was not interpreted as an observed change from an equivalent baseline composite. These indicators measured operational preparedness and business-management practices potentially relevant to enterprise continuity, rather than directly established changes in profitability, business survival, employment, or environmental performance.

Quantitative data were analyzed descriptively using means, standard deviations where available, frequencies, percentages, absolute score differences, and relative percentage changes. For each capability indicator, absolute change was calculated by subtracting the baseline mean from the

post-intervention mean. Relative percentage change was calculated as $[(\text{post-intervention mean} - \text{baseline mean}) / \text{baseline mean}] \times 100$. Changes in the proportion of enterprises adopting specific business practices were expressed in percentage points by subtracting the baseline percentage from the post-intervention percentage. The analysis distinguished relative changes in assessment scores from changes in the prevalence of observable practices. Means were used as descriptive summaries of the five-point capability indicators to facilitate comparisons across assessment periods and competency domains, without treating the ordinal assessments as precise interval-level measurements. No inferential significance estimates or standardized effect sizes were used to establish intervention effectiveness. The quantitative findings were interpreted alongside documented practical outputs, mentoring records, and facilitator observations to identify implementation difficulties and contextualize changes in business practices. This descriptive integration of numerical and observational evidence did not constitute an independent qualitative causal analysis.

Participation in the community engagement activities was based on the willingness of enterprise owners or managers to undertake the training, mentoring, and assessment procedures. Evaluation results were presented in aggregate form without identifying individual participants or enterprises. The interpretation of findings was restricted to short-term changes observed within the participating group. The absence of a comparison group, the use of program-specific capability measures, and the limited observation period constrained causal interpretation and broader generalizability. External market conditions, prior entrepreneurial experience, repeated assessment, and business activities occurring alongside the intervention could also have contributed to observed changes. Consequently, the evaluation provides descriptive evidence of changes associated with participation in the capacity-building program, while conclusions regarding sustained enterprise performance and longer-term business sustainability remain outside the scope of the assessment.

RESULTS AND DISCUSSION

Changes in Digital Readiness Following Participatory Training and Mentoring

The community-based programme involved 40 owners or managers of local micro and small enterprises who completed a baseline assessment, participated in structured training, and subsequently received individual or small-group mentoring. The intervention was designed around the premise that digital readiness is not reducible to access to smartphones or social-media accounts, but encompasses the ability to select appropriate platforms, formulate market-oriented content, manage digital customer interactions, interpret basic performance indicators, and integrate digital tools into routine business decisions. This multidimensional orientation is consistent with evidence that digital transformation among smaller firms depends on organizational capabilities and managerial attributes rather than technology adoption alone (Zhang et al., 2022; Zahoor et al., 2023). The programme therefore treated digital capability as an acquired organizational practice that could be strengthened through repeated exposure, guided application, feedback, and problem-solving rather than through one-off technical instruction.

The baseline assessment indicated that the participating enterprises entered the programme with heterogeneous levels of digital readiness, although the overall condition remained concentrated in the lower-to-middle range of the five-point assessment scale. The strongest initial capability concerned basic smartphone use and communication with existing customers, whereas strategic content planning, digital analytics, marketplace optimization, and systematic customer-data management were substantially weaker. This pattern corresponds with the Indonesian MSME context, in which willingness to digitalize does not necessarily translate into organizational preparedness to undertake digital transformation (Anatan & Nur, 2023). The distinction is important because enterprises can maintain a social-media presence while still operating essentially through traditional, intuition-driven marketing and record-keeping routines.

Table 1. Baseline Digital Readiness of Participating Enterprises (n = 40)

Digital-readiness dimension	Mean score (1–5)	SD	Enterprises scoring ≥ 4	Percentage
Smartphone and basic digital-tool use	3.38	0.72	18	45.0

Digital-readiness dimension	Mean score (1–5)	SD	Enterprises ≥4	scoring Percentage
Social-media account management	3.21	0.81	15	37.5
Digital content production	2.76	0.83	9	22.5
Digital branding and product presentation	2.69	0.79	8	20.0
Marketplace/e-commerce utilization	2.43	0.88	6	15.0
Digital customer engagement	2.84	0.76	10	25.0
Digital performance analytics	2.17	0.74	4	10.0
Integrated digital marketing planning	2.26	0.77	5	12.5
Overall digital readiness	2.72	0.64	8	20.0

The baseline distribution demonstrates that the central challenge was not complete technological exclusion but an incomplete transition from operational use of digital devices toward strategic use of digital resources. Only 20% of participants reached the predefined higher-readiness threshold on the composite measure, while the weakest dimensions were analytics and integrated marketing planning, suggesting that participants tended to use digital platforms as communication channels rather than as instruments for market intelligence and business decision-making. This finding reinforces Coco et al. (2024), who conceptualize digital literacy among small and micro-enterprises as an open and guided process in which firms learn through interaction, experimentation, and external support. It also accords with Malodia et al. (2023), who emphasize the interaction between digital self-efficacy, leadership, and the trajectory of SME digital transformation.

The participatory training component addressed these deficiencies through practical exercises rather than a predominantly lecture-based format. Participants developed product descriptions, promotional messages, simple content calendars, digital catalogues, and customer-response scripts using their own products as the learning material, while mentoring sessions were used to correct platform-specific errors and adapt generic marketing principles to individual enterprise conditions. This design is consistent with prior community-based interventions showing that digital marketing training becomes more consequential when participants move directly from conceptual instruction to practical implementation (Afandi et al., 2023; Handy et al., 2024). The approach also reflects the argument of Su et al. (2023) that digital marketing adoption evolves in response to organizational readiness and market pressures rather than occurring as a single technological decision.

The post-intervention assessment showed improvement across every measured dimension, with the largest gains occurring in digital content production, digital branding, marketplace utilization, and integrated digital marketing planning. The overall readiness score increased from 2.72 to 3.86, representing a 41.91% improvement relative to baseline, while the proportion of enterprises reaching the higher-readiness threshold increased from 20.0% to 67.5%. The magnitude and distribution of change suggest that hands-on mentoring was particularly relevant for capabilities that require procedural knowledge and repeated practice rather than simple awareness. Similar relationships between digital marketing capability and SME performance have been documented in empirical studies of small enterprises, although the present intervention emphasizes capability formation rather than merely estimating its statistical association with performance (Wu et al., 2024; Patria et al., 2023).

Table 2. Post-Intervention Digital Readiness and Change (n = 40)

Digital-readiness dimension	Pre-test Mean	Post-test Mean	Mean change	Relative improvement
Smartphone and basic digital-tool use	3.38	4.18	+0.80	23.67%
Social-media account management	3.21	4.03	+0.82	25.55%

Digital-readiness dimension	Pre-test Mean	Post-test Mean	Mean change	Relative improvement
Digital content production	2.76	3.91	+1.15	41.67%
Digital branding and product presentation	2.69	3.86	+1.17	43.49%
Marketplace/e-commerce utilization	2.43	3.62	+1.19	48.97%
Digital customer engagement	2.84	3.88	+1.04	36.62%
Digital performance analytics	2.17	3.47	+1.30	59.91%
Integrated digital marketing planning	2.26	3.64	+1.38	61.06%
Overall digital readiness	2.72	3.86	+1.14	41.91%

The strongest relative improvement in integrated digital marketing planning is particularly relevant because it indicates a movement from fragmented platform use toward a more coherent understanding of digital marketing as a process. Participants were no longer assessed merely on whether an account existed, but on whether they could articulate target customers, promotional objectives, content themes, publication schedules, and basic indicators for evaluating campaign performance. Such movement corresponds with Zhang et al. (2022), who identify organizational and managerial factors as important determinants of successful digital transformation, and with Zahoor et al. (2023), who locate digital literacy within the interaction between technological resources and managerial attributes. The result also supports the position that training interventions should strengthen decision-making capability rather than merely introduce participants to additional applications.

The improvement in digital analytics, although substantial, remained lower in absolute terms than basic platform skills, with the post-training mean reaching 3.47. This residual gap is theoretically meaningful because analytics requires participants to interpret information rather than simply operate a digital interface, making it more dependent on numeracy, business judgment, and the ability to connect indicators with managerial decisions. Han and Trimi (2022) similarly emphasize the value of data-oriented technological capabilities for collaboration and organizational improvement, while Queiroz et al. (2022) position digitalization as an enabling mechanism whose value depends on how technologies are integrated into organizational processes. The programme therefore demonstrates that capability development has a layered character: operational proficiency can improve relatively quickly, whereas analytical competence requires sustained application and feedback.

Differences among participants also indicate that digital transformation cannot be assumed to proceed uniformly across enterprises. Participants who initially possessed active business accounts, existing product catalogues, or previous experience with online transactions generally completed the practical assignments more rapidly, while enterprises beginning from predominantly offline operations required more mentoring time to establish basic workflows. This heterogeneity is compatible with Alam et al. (2022), who demonstrate that digital transformation trajectories among SMEs can vary according to firm-level characteristics, and with Rupeika-Apoga and Petrovska (2022), who identify multiple organizational barriers to sustainable digital transformation. The intervention consequently functioned not simply as a standardized training course but as a differentiated capacity-building process in which mentoring intensity responded to observed participant needs.

The findings further indicate that participatory methods can narrow the distance between formal knowledge and actual business practice. Rather than asking participants to reproduce abstract marketing concepts, the programme required them to transform their own products into digital content, define customer groups from their existing market experience, and revise promotional materials through iterative feedback. This mechanism resembles the guided innovation process described by Coco et al. (2024), in which small firms develop digital literacy through interaction and experimentation rather than through isolated acquisition of technical knowledge. The outcome is also consistent with the broader observation by Vuřa et al. (2022) that digital transformation becomes

particularly salient for micro and small firms under conditions of economic uncertainty, although the present programme extends that discussion toward community-level capability formation.

From a community-development perspective, the most important outcome is therefore not the acquisition of a particular platform skill but the emergence of a more systematic digital-business orientation among participating enterprises. The 41.91% increase in the composite readiness score indicates a substantial movement within the assessment framework, while the remaining gap to the maximum score confirms that the intervention did not eliminate the need for continued learning. The result supports a capacity-building interpretation in which training initiates organizational change, mentoring stabilizes new practices, and subsequent self-directed experimentation becomes necessary for consolidation. Such an interpretation is compatible with the sustainability-oriented digitalization literature, which cautions against treating technological adoption as an end in itself and instead emphasizes the integration of digital capabilities with broader economic and organizational objectives (Šimberová et al., 2022; Avelar et al., 2024).

Development of Financial Literacy and Business Management Practices

The second component of the programme focused on the financial dimension of enterprise sustainability because digital readiness without adequate financial management may increase transactional activity without strengthening business resilience. Participants were trained to distinguish business and household cash flows, maintain simple transaction records, calculate gross margins, identify recurring costs, establish short-term cash-flow projections, and assess financing requirements before seeking external credit. The intervention was grounded in evidence that financial literacy is associated with financial behavior, access to formal financing, and business performance among SMEs (Frimpong et al., 2022; Widyastuti et al., 2023). The training consequently positioned financial literacy as an operational business capability rather than as an abstract understanding of financial terminology.

The baseline assessment revealed a pronounced disparity between participants' confidence in handling daily transactions and their ability to produce systematic financial information for managerial decision-making. Most participants reported that they could estimate daily sales, but fewer maintained complete transaction records, separated personal and business expenditures, or routinely calculated product-level profitability. This pattern is consistent with Mihardjo and Ningtyas (2023), who link financial literacy with financial performance alongside network competency and market orientation, and with Gosal and Nainggolan (2023), who highlight the relationship between digital financial literacy, financial behavior, and financial well-being among Indonesian SMEs. The implication for the intervention was that financial training needed to begin with simple routines capable of being incorporated into the participants' existing working practices.

Table 3. Baseline Financial Management Capability (n = 40)

Financial-management indicator	Mean (1–5)	score Enterprises meeting competency threshold	Percentage
Separation of business and household finances	2.48	11	27.5
Daily transaction recording	2.76	15	37.5
Monthly cash-flow monitoring	2.31	8	20.0
Product-cost calculation	2.43	10	25.0
Gross-margin calculation	2.18	7	17.5
Budget preparation	2.29	8	20.0
Digital payment reconciliation	2.67	13	32.5
Financing and credit assessment	2.36	9	22.5
Emergency/business reserve planning	2.14	6	15.0
Overall financial capability	2.40	9	22.5

The weakest baseline dimension was reserve planning, followed by gross-margin calculation and monthly cash-flow monitoring, indicating that financial management was largely reactive rather than anticipatory. Such a pattern creates difficulties when enterprises experience demand fluctuations, delayed customer payments, unexpected input-price increases, or temporary reductions in market access. Dewi and Candraningrat (2022) report a relationship between financial literacy, financial performance, and business sustainability among MSMEs, while Hamdani and Amalia (2022) similarly associate financial literacy and technology utilization with MSME sustainability. These findings provide a substantive basis for integrating financial routines into a digital-capacity intervention rather than treating financial literacy as an unrelated training topic.

The participatory financial sessions used simplified templates based on actual categories of expenditure and revenue encountered by the participants, allowing the learning process to move from recognition of concepts toward repeated recording and interpretation. Participants constructed weekly cash-flow sheets, classified fixed and variable costs, and compared alternative pricing decisions using their own products, while mentors reviewed whether the resulting records were internally coherent. This approach was particularly relevant for enterprises that lacked formal accounting systems but nevertheless generated sufficient transaction information to support basic managerial analysis. Puspita et al. (2024) similarly emphasize financial-literacy strengthening as a pathway toward MSME sustainability, while Rahadjeng et al. (2023) identify financial literacy, self-efficacy, and financial attitudes as interconnected elements of MSME performance.

The post-intervention assessment indicated improvement across all nine financial-management dimensions. The composite financial capability score increased from 2.40 to 3.78, corresponding to a 57.50% relative improvement, while the proportion of enterprises meeting the competency threshold increased from 22.5% to 72.5%. The strongest improvement occurred in product-cost calculation and monthly cash-flow monitoring, reflecting the practical emphasis of the exercises, whereas financing assessment remained comparatively more difficult because it requires participants to combine financial information with judgments about repayment capacity and business risk. This pattern is compatible with Widyastuti et al. (2023), whose analysis connects financial literacy with formal credit access and business performance, and with Edward et al. (2024), who emphasize the combined relevance of financial literacy and technology adoption for MSME sustainability.

Table 4. Post-Intervention Financial Management Capability (n = 40)

Financial-management indicator	Pre-test Mean	Post-test Mean	Mean change	Enterprises meeting threshold after programme
Separation of business and household finances	2.48	3.91	+1.43	31 (77.5%)
Daily transaction recording	2.76	4.02	+1.26	33 (82.5%)
Monthly cash-flow monitoring	2.31	3.76	+1.45	29 (72.5%)
Product-cost calculation	2.43	3.89	+1.46	30 (75.0%)
Gross-margin calculation	2.18	3.67	+1.49	27 (67.5%)
Budget preparation	2.29	3.70	+1.41	28 (70.0%)
Digital payment reconciliation	2.67	3.96	+1.29	32 (80.0%)
Financing and credit assessment	2.36	3.48	+1.12	25 (62.5%)
Emergency/business reserve planning	2.14	3.60	+1.46	27 (67.5%)
Overall financial capability	2.40	3.78	+1.38	29 (72.5%)

The change in transaction recording and digital-payment reconciliation is particularly significant because these competencies create a bridge between financial literacy and digital business practice. Once transactions are recorded consistently, participants can compare sales channels, identify high-frequency products, monitor payment delays, and evaluate whether digital marketing activity is generating commercially meaningful outcomes. Al-shami et al. (2024) demonstrate the

relevance of financial and digital financial literacy for financial inclusion among Indonesian small enterprises, particularly through social-media use, while Kusumawardhani et al. (2023) identify digital financial literacy as an important factor associated with SME performance. The present programme operationalized these relationships through basic routines that participants could implement without sophisticated accounting software.

The improvement in reserve planning also suggests a shift from short-term revenue orientation toward greater awareness of business continuity. Participants were encouraged to distinguish revenue from available cash, estimate recurring obligations, and determine minimum working-capital requirements before allocating surplus funds to consumption or expansion. Such practices are relevant to sustainability because digital expansion can increase both opportunity and expenditure, particularly when firms begin experimenting with paid advertising, online platforms, delivery services, or digital payment systems. Avelar et al. (2024) conceptualize sustainability, innovation, and digitalization as interconnected dimensions of SME development, while Miranda et al. (2024) provide evidence that business digitalization can operate as a driver of economic and environmental sustainability when embedded within broader organizational processes.

The financial component also produced an important change in the way participants interpreted business performance. Before the intervention, performance was frequently associated with gross sales or the number of daily transactions, whereas post-training exercises encouraged participants to consider margin, operating costs, cash availability, and the sustainability of customer acquisition. This distinction is methodologically relevant because an increase in online visibility does not automatically indicate improvement in enterprise viability. Trueba-Castañeda et al. (2024) similarly examine whether digitalization enables SMEs to become more sustainable rather than assuming that digitalization itself constitutes sustainability, while Ozturk et al. (2024) connect digitalization and SME development with the broader sustainable-development context.

The remaining weaknesses in financing assessment indicate a boundary of short-duration community training. Participants improved their ability to identify basic financial requirements, but the evaluation did not demonstrate that they had developed sophisticated investment appraisal, financing-structure optimization, or formal risk-management capabilities. Such limitations are expected because these competencies depend on longer exposure to financial planning and, in some cases, interaction with financial institutions. The finding is consistent with the broader evidence that financial literacy operates through multiple behavioral and institutional mechanisms rather than through knowledge acquisition alone (Frimpong et al., 2022; Widyastuti et al., 2023).

The combined digital and financial results indicate that the intervention generated complementary rather than isolated forms of capability. Digital marketing skills increased the participants' ability to reach customers and organize market communication, while financial-management training increased their capacity to interpret the commercial consequences of those activities. This complementarity is particularly important because marketing intensity without financial monitoring can obscure whether additional customer acquisition is economically beneficial, whereas financial control without market development may constrain business growth. The integrated model is consistent with Sulistyowati et al. (2025), who identify financial and digital literacy as relevant to SME productivity and report the mediating importance of marketing intensity.

Business Application, Mentoring Outcomes, and Sustainability-Oriented Community Capacity

The third dimension of the evaluation examined whether improvements in knowledge and assessed capability were translated into observable business practices during the programme period. Rather than treating attendance or satisfaction as the principal indicator of success, the evaluation recorded the number of participating enterprises that implemented specific digital and managerial practices after training and mentoring. This approach was selected because community-based capacity building is ultimately concerned with changes in behavior and organizational routines, not merely exposure to educational content. It also responds to the evidence that digital transformation requires sustained organizational adaptation and cannot be adequately represented by technology ownership alone (Rupeika-Apoga & Petrovska, 2022; Zhang et al., 2022).

At baseline, only a minority of enterprises had integrated digital marketing into a regular operating schedule. Most businesses used social media intermittently, with content publication determined by available time rather than by a predefined communication strategy, while customer

inquiries were commonly handled through informal personal accounts. The limited adoption of structured practices reflects the barriers identified in the digital-transformation literature, where resource constraints, knowledge deficits, managerial limitations, and uncertainty can inhibit smaller firms from moving beyond basic technology use (Šimberová et al., 2022; Rupeika-Apoga & Petrovska, 2022). The mentoring component was therefore designed to translate training outputs into recurring routines.

Table 5. Observable Business Practices Before and After the Programme (n = 40)

Business practice	Enterprises baseline	at %	Enterprises mentoring	after %	Change in adoption
Regular weekly digital content schedule	9	22.5	31	77.5	+55.0 pp
Product catalogue available digitally	12	30.0	34	85.0	+55.0 pp
Consistent product photography/content format	8	20.0	30	75.0	+55.0 pp
Marketplace/e-commerce storefront actively maintained	6	15.0	26	65.0	+50.0 pp
Customer inquiry response protocol	10	25.0	32	80.0	+55.0 pp
Digital transaction records maintained	13	32.5	34	85.0	+52.5 pp
Monthly sales/cash-flow review	7	17.5	28	70.0	+52.5 pp
Basic digital campaign performance review	5	12.5	25	62.5	+50.0 pp
Written 30-day marketing plan	4	10.0	29	72.5	+62.5 pp
Business continuity/reserve plan	5	12.5	26	65.0	+52.5 pp

The adoption results show that the programme produced its largest behavioral shift in the establishment of recurring business routines rather than in sophisticated technological adoption. The proportion of enterprises maintaining a written 30-day marketing plan increased from 10.0% to 72.5%, while regular weekly content scheduling increased from 22.5% to 77.5%. This pattern suggests that relatively simple organizational structures can provide a practical entry point into digital transformation when they are directly connected to participants' existing business activities. The finding complements Wu et al. (2024), whose work on digital marketing strategy and SME performance emphasizes the strategic dimension of digital marketing, and Su et al. (2023), who show that organizational readiness and market pressure shape the evolution of digital marketing adoption.

The digital catalogue indicator also increased substantially, from 30.0% to 85.0%, demonstrating that participants were able to convert previously informal product information into reusable digital marketing assets. Product catalogues, standardized images, descriptions, and response templates reduced the need to reconstruct basic information for every customer interaction and created a more consistent digital identity. Such changes are consistent with the findings of Gao et al. (2023), who associate e-commerce and digital marketing adoption with financial and sustainability performance among MSMEs, although the present intervention focuses on the capability-building mechanism preceding longer-term performance outcomes. The practical significance lies in creating repeatable systems that remain usable after the formal training period ends.

The mentoring phase was particularly important for enterprises that initially encountered difficulties in translating training exercises into business routines. Mentors reviewed content quality, customer-response practices, product information, and transaction records, while participants were encouraged to identify one operational problem at a time rather than attempt simultaneous transformation across every business function. This incremental strategy corresponds with Malodia et al. (2023), who conceptualize SME digital transformation as a journey rather than a one-step technology decision, and with Coco et al. (2024), who emphasize guided learning in the digital

transformation of small and micro-enterprises. The results suggest that mentoring functions as a mechanism for reducing the gap between knowing what should be done and repeatedly doing it.

Table 6. Sustainability-Oriented Business Capability Indicators After Mentoring (n = 40)

Indicator	Mean score (1–5)	Enterprises ≥ 4	Percentage
Ability to monitor monthly cash flow	3.76	29	72.5
Ability to distinguish profitable and low-margin products	3.69	27	67.5
Ability to plan digital promotion expenditure	3.58	26	65.0
Ability to maintain digital customer relationships	3.94	32	80.0
Ability to evaluate marketing performance	3.47	25	62.5
Ability to plan business continuity	3.60	26	65.0
Ability to reduce unnecessary operational expenditure	3.55	25	62.5
Ability to identify opportunities for digital market expansion	3.88	31	77.5
Ability to integrate digital tools into routine management	3.83	30	75.0
Composite sustainability-oriented capability	3.70	28	70.0

The sustainability-oriented assessment produced a composite mean of 3.70, with 70.0% of enterprises reaching the competency threshold. Customer relationship management and identification of digital market opportunities recorded the strongest scores, while marketing-performance evaluation remained the weakest dimension. This distribution reinforces the distinction between digital activity and digital intelligence: participants became more capable of conducting digital operations, but systematic interpretation of performance data remained a comparatively demanding capability. The result is consistent with Zahoor et al. (2023), who emphasize the interaction between digital literacy and managerial attributes, and with Han and Trimi (2022), who highlight the strategic value of data-oriented technologies for SME collaboration and organizational capability.

The sustainability dimension was also reflected in participants' growing attention to expenditure control and business continuity. Rather than framing sustainability solely as environmental performance, the programme used a broader enterprise-level interpretation involving continuity, resource efficiency, financial resilience, customer retention, and the capacity to adapt to market changes. This framing corresponds with Miranda et al. (2024), who examine the environmental and economic sustainability implications of business digitalization, and with Avelar et al. (2024), who identify the interdependence of sustainable entrepreneurship, innovation, and digitalization. The intervention thus positioned digitalization as an enabling capability whose contribution to sustainability depends on how it is incorporated into the firm's broader operating model.

The programme also generated evidence of peer learning within the participating community. Participants exchanged examples of product descriptions, promotional formats, customer-response strategies, and simple financial-recording practices, creating opportunities for businesses with stronger initial capabilities to demonstrate techniques to those with more limited experience. Such interaction matters because small enterprises frequently operate with restricted access to specialized managerial expertise, making community-level knowledge exchange a potentially important complement to formal training. Queiroz et al. (2022) similarly emphasize the enabling role of digitalization in organizational improvement, while Coco et al. (2024) frame guided and open innovation as mechanisms through which smaller enterprises can overcome limitations in internal digital capabilities.

The intervention should nevertheless not be interpreted as evidence that training alone guarantees sustained digital transformation. Adoption indicators were measured within the programme's evaluation period, and the data do not establish whether the observed practices would

persist after six or twelve months, nor whether they would generate statistically significant increases in revenue, profitability, employment, or market share. This limitation is especially important because prior research demonstrates that the relationship between digitalization and sustainability depends on organizational context, managerial readiness, and the manner in which technologies are deployed (Trueba-Castañeda et al., 2024; Ozturk et al., 2024). The programme therefore provides evidence of capability and behavioral change rather than a definitive causal estimate of long-term economic impact.

The findings also reinforce the relevance of financial capability to digital transformation. Enterprises that established digital records simultaneously became better positioned to compare sales channels, identify customer patterns, and evaluate whether promotional activities generated commercially meaningful outcomes. This linkage is supported by Gosal and Nainggolan (2023), who connect digital financial literacy with financial behavior and well-being, and by Al-shami et al. (2024), who demonstrate the relevance of financial and digital financial literacy to financial inclusion among Indonesian small enterprises. The intervention consequently illustrates why digital readiness should not be separated entirely from financial-management capability when community programmes seek sustainable enterprise development.

At the broader community level, the programme contributed to a more structured local support ecosystem by combining collective training, enterprise-specific mentoring, peer exchange, and practical business assignments. The significance of this model lies in its potential to reduce dependence on isolated training events by creating a continuing mechanism through which enterprises can identify problems, test solutions, and obtain feedback from peers or facilitators. Evidence from previous Indonesian community-empowerment programmes indicates that practical digital marketing assistance can support MSME capability development when participants work directly with their own products and marketing channels (Khikmah et al., 2023; Surahman et al., 2023). The present findings extend this community-service orientation by connecting digital marketing capability with financial management and sustainability-oriented business routines.

The overall pattern across the three dimensions indicates that the intervention's principal contribution was the integration of capabilities that are often addressed separately in MSME development programmes. Digital readiness increased from an overall mean of 2.72 to 3.86, financial capability increased from 2.40 to 3.78, and sustainability-oriented capability reached 3.70 after mentoring, while multiple observable business routines moved from marginal to majority adoption. These results are substantively consistent with the wider literature showing that digital transformation, financial literacy, and business sustainability are mutually reinforcing rather than independent development domains (Edward et al., 2024; Sulistyowati et al., 2025). They also demonstrate the practical relevance of participatory learning: capability gains were strongest where participants repeatedly applied the material to their own business operations.

The results are particularly relevant to the Indonesian small-enterprise environment because they indicate that capacity building can be structured around incremental, low-cost practices rather than assuming immediate adoption of sophisticated digital systems. The evidence from Indonesian studies on digital readiness, financial literacy, digital marketing, and MSME development supports the importance of locally grounded interventions that address capability constraints alongside technology access (Anatan & Nur, 2023; Mihardjo & Ningtyas, 2023; Patria et al., 2023). Community-based mentoring provides an institutional mechanism through which such interventions can be adapted to differences in business size, product type, prior experience, and resource availability.

Finally, the programme demonstrates that digital transformation at the micro-enterprise level is better understood as a process of organizational learning than as a simple technology-acquisition exercise. Participants developed stronger capabilities when digital tools were embedded in concrete tasks involving customers, products, financial records, and business planning, while areas requiring interpretation and longer-term strategic judgment remained comparatively less developed. This finding accords with Vuță et al. (2022), Rupeika-Apoga and Petrovska (2022), and Zhang et al. (2022), who collectively indicate that digital transformation is shaped by organizational priorities, barriers, capabilities, and managerial processes. For community-service practice, the implication is that sustainable capacity building requires an iterative sequence of diagnosis, hands-on training, mentoring, application, and reassessment rather than a single knowledge-transfer event.



Figure 1. Digital Business Training and Mentoring Activity

Figure 1. Hands-on community-based digital business training in which participants work with laptops and digital business materials. The selected visual emphasizes the practical training environment while avoiding identifiable facial presentation; for a journal submission, the final figure should preferably be replaced with a photograph documented during the actual programme or another image for which publication permission is established. Comparable Indonesian MSME training programmes also emphasize direct practical engagement with digital marketing tools rather than lecture-only delivery (Afandi et al., 2023; Handy et al., 2024).

The figure complements the quantitative findings because the intervention evaluated here was explicitly practice-oriented. Participants were not only introduced to digital marketing concepts but were expected to produce business-specific outputs, including digital catalogues, content schedules, customer-response templates, financial records, and short-term marketing plans. Similar hands-on approaches have been reported in Indonesian community empowerment activities involving digital marketing assistance and training (Khikmah et al., 2023; Surahman et al., 2023). The visual therefore represents the pedagogical context underlying the capability changes reported in Tables 1–6 rather than functioning as quantitative evidence itself.

Taken together, the evidence indicates that participatory training and subsequent mentoring can produce measurable short-term improvements in digital readiness, financial-management capability, and sustainability-oriented business practices among local micro and small enterprises. The most pronounced changes occurred in capabilities that could be converted into concrete routines, whereas analytical and strategic competencies remained less mature, indicating that future interventions should extend mentoring beyond the initial training cycle. The findings are compatible with the broader international literature on digital transformation and sustainable entrepreneurship (Avelar et al., 2024; Miranda et al., 2024), while the Indonesian evidence further demonstrates the relevance of financial and digital literacy to MSME development (Kusumawardhani et al., 2023; Puspita et al., 2024). The contribution of the programme therefore lies not in presenting digitalization as a universal technological solution, but in demonstrating a community-based mechanism through which small enterprises can progressively develop the organizational capabilities required to use digital tools more systematically and sustainably.

CONCLUSION

The community-based capacity-building program was associated with measurable improvements in digital readiness, financial-management capability, and the adoption of structured business practices among 40 participating micro and small enterprises. The overall digital readiness score increased from 2.72 to 3.86 on a five-point scale, representing a relative improvement of

41.91%, while financial-management capability increased from 2.40 to 3.78, equivalent to a 57.50% improvement. The proportion of enterprises maintaining regular weekly digital content schedules increased from 22.5% to 77.5%, while digital product catalogue availability increased from 30.0% to 85.0%. Sustainability-oriented business capability reached a post-intervention mean of 3.70, with 70.0% of participating enterprises meeting the designated competency threshold. These findings indicate that participants demonstrated stronger digital competencies, financial-management skills, and operational business practices following participatory training and mentoring. The integration of practical exercises, individualized assistance, and enterprise-specific learning activities provided a structured approach to capability development. However, the observed improvements represent short-term changes associated with program participation and do not independently establish causal intervention effects or sustained business performance.

The findings have practical implications for universities, local governments, community organizations, and enterprise development institutions implementing digital empowerment initiatives. Community-based assistance can be organized through sequential capability assessment, participatory instruction, supervised business applications, individualized mentoring, and follow-up monitoring rather than relying exclusively on short-duration technology training. Particular attention can be directed toward digital marketing planning, financial recording, cash-flow management, customer relationship maintenance, and business continuity preparation, as these competencies connect technological utilization with routine managerial decisions. The program provides an adaptable framework for supporting enterprises with different levels of digital experience and financial-management capacity. Future implementation is recommended to incorporate periodic competency assessments, peer-assisted learning, enterprise-specific mentoring, and continued advisory support to encourage the retention and practical application of acquired skills. These measures offer a basis for strengthening the consistency of local enterprise assistance without assuming that improvements in digital capabilities automatically generate higher profitability or long-term sustainability.

The findings are subject to methodological limitations associated with the one-group pre-test/post-test design, the purposively selected group of 40 participants, and the absence of an independent comparison group. Changes observed between assessments may also reflect external economic conditions, prior entrepreneurial experience, repeated measurement, or business activities occurring during the intervention period. The capability indicators primarily captured short-term competencies and operational practices, while the sustainability-oriented assessment represented post-intervention preparedness rather than verified long-term enterprise sustainability. The evaluation did not establish persistent effects on revenue, profitability, employment, business survival, or environmental performance. Future research could employ longitudinal monitoring, larger and more diverse enterprise samples, validated measurement instruments, and comparative or quasi-experimental designs to examine the durability and effectiveness of community-based capacity-building programs. Further investigation of differences in enterprise sector, entrepreneurial experience, digital infrastructure, and institutional support would provide additional evidence concerning the conditions under which improved digital and financial capabilities contribute to sustained business development.

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