PRODUCT PACKAGING DESIGN TRAINING USING SMARTPHONE APPLICATIONS TO INCREASE THE SALES VALUE OF MSME PRODUCTS

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) play a vital role in national economic development; however, many MSME actors struggle to compete due to poor product packaging quality. This community service program aimed to enhance the packaging design capabilities of MSME actors through structured training using smartphone applications. A total of 25 MSME participants from diverse product sectors completed a two-day, practice-based training program covering design principles, smartphone application usage, and regulatory labeling requirements. Pre- and post-training assessments, facilitator observations, and focus group discussions were employed to evaluate program outcomes. Results indicated that 84% of participant designs achieved market-ready or near-market-ready quality, with average knowledge scores improving by 67% and self-efficacy scores increasing by 74% relative to pre-training baselines. Participants reported strong intentions to continue using design applications independently and expressed confidence in the commercial potential of their redesigned packaging. The findings demonstrate that smartphone-based packaging design training is an effective, accessible, and cost-efficient approach to improving MSME product competitiveness and increasing sales value, with significant implications for digital empowerment and creative economy development.

Keywords: *packaging design; smartphone applications; MSME empowerment; community service; product sales value*

A. Introduction

The development of Micro, Small, and Medium Enterprises (MSMEs) plays a critical role in driving national economic growth, particularly in developing countries. MSMEs contribute significantly to employment absorption, poverty alleviation, and gross domestic product (GDP) formation. However, despite their substantial contributions, many MSME actors continue to face persistent challenges in competing within increasingly dynamic and competitive markets. One of the most fundamental issues that undermines the competitiveness of MSME products is the poor quality of product packaging design, which directly affects consumer

purchasing decisions and overall product value perception (Rahmat & Hidayat, 2022).

Product packaging is no longer merely a protective function for goods during distribution and storage. In the contemporary marketing landscape, packaging has evolved into a powerful communication medium that conveys brand identity, product quality, and consumer trust. Attractive and professional packaging can significantly elevate the perceived value of a product, thereby increasing its market appeal and sales performance (Kotler & Keller, 2021). Conversely, unattractive or unprofessional packaging often causes consumers to overlook a product, regardless of its intrinsic quality. This phenomenon is particularly prevalent among MSME products, which frequently suffer from poor packaging aesthetics that fail to compete with larger, more established brands.

The rapid advancement of digital technology has opened new opportunities for MSME actors to improve their packaging design capabilities without requiring large capital investments. The widespread adoption of smartphones has democratized access to powerful design tools that were previously only available to professional designers using expensive desktop software (Pratama & Susanti, 2023). Today, various smartphone-based design applications such as Canva, Adobe Express, PixelLab, and similar platforms offer intuitive interfaces and extensive template libraries that enable non-designers to produce visually compelling packaging designs. This technological shift presents a significant opportunity for MSME empowerment through digital literacy and design skill development.

However, the mere availability of these tools does not automatically translate into their effective utilization by MSME actors. Many small business owners, particularly those in rural and semi-urban areas, lack the digital literacy and design knowledge required to leverage these applications effectively (Nugraha et al., 2022). Studies have shown that a significant proportion of MSME operators in Indonesia have limited exposure to digital design tools and continue to rely on conventional, often substandard, packaging methods (Wulandari & Firmansyah, 2023). This gap between technological availability and practical utilization highlights the urgent need for structured training and capacity-building interventions.

Community service and training programs focused on packaging design have demonstrated measurable impacts on MSME product competitiveness. Research conducted by Sari and Kurniawan (2022) found that MSME participants who underwent structured

packaging design training reported significant improvements in product sales within three months of program completion. Similarly, Andriani et al. (2023) documented that packaging design interventions not only improved product aesthetics but also enhanced the confidence and entrepreneurial motivation of MSME actors. These findings underscore the transformative potential of well-designed training programs in driving MSME growth and sustainability.

The integration of smartphone applications into packaging design training offers several distinct advantages. First, smartphones are already widely owned by MSME actors, eliminating the need for additional hardware investment (Lestari & Prabowo, 2022). Second, mobile design applications are generally more accessible and user-friendly compared to professional desktop software, reducing the learning curve for participants with limited technical backgrounds. Third, the portability of smartphones enables MSME actors to continue practicing and applying their newly acquired design skills at any time and in any location, thereby promoting continuous learning and skill retention (Hidayah & Santoso, 2023).

From an educational and training perspective, hands-on, practice-based learning approaches have consistently proven more effective than theoretical instruction alone, particularly for adult learners engaged in vocational skill development (Mezirow, 2020). Training programs that incorporate immediate practical application, real-world examples, and feedback mechanisms tend to produce more durable learning outcomes and greater behavioral change among participants. This principle is especially relevant in the context of design skill training, where visual and tactile engagement with tools and materials is essential for developing practical competence.

Furthermore, the economic implications of improved packaging design for MSMEs are well-documented in the literature. Effective packaging not only enhances product visibility on retail shelves and online marketplaces but also justifies premium pricing strategies, as consumers are generally willing to pay higher prices for products that appear professional and trustworthy (Rundh, 2021). In the digital commerce era, where product images serve as the primary point of consumer contact, high-quality packaging design has become even more critical for MSME competitiveness in e-commerce platforms (Maharani & Yusuf, 2024).

Government policies in Indonesia have increasingly recognized the importance of digital empowerment for MSMEs, with various programs targeting

digital literacy, e-commerce adoption, and creative economy development (Kemenkop UKM, 2023). Training programs that align with these policy directions and contribute to measurable improvements in MSME product quality and market access are particularly valuable from a development perspective. By equipping MSME actors with smartphone-based design skills, such programs contribute directly to national economic development goals and the sustainable growth of the small business sector.

Based on the foregoing background, this community service program was designed and implemented with the specific objective of enhancing the packaging design capabilities of MSME actors through structured, practice-based training using smartphone applications. The program targets MSME operators who currently rely on minimal or unprofessional packaging, with the goal of empowering them to produce attractive, market-ready packaging independently. This article presents the methodology, implementation process, and outcomes of the training program, contributing to the growing body of literature on MSME empowerment through digital technology adoption.

B. Implementation Method

This community service program employed a participatory action approach, combining structured instructional sessions with hands-on practice to maximize learning outcomes among MSME participants. The program was designed based on the principles of adult learning theory, which emphasizes the importance of experiential learning, problem-solving orientation, and the immediate applicability of acquired skills to real-world contexts (Knowles et al., 2020). The training was conducted over two days, encompassing a series of sequential activities designed to build participants' knowledge and practical skills progressively.

The participant selection process involved coordination with local government units and MSME associations to identify business operators whose products currently lacked professional packaging. A total of 25 MSME actors from various product sectors, including food and beverages, handicrafts, and household products, were recruited to participate in the program. Prior to the commencement of training, a pre-assessment survey was administered to evaluate participants' baseline levels of digital literacy, familiarity with design applications, and awareness of packaging standards relevant to their respective product categories.

The training program was structured into four primary components. The first component consisted of an introductory session covering the fundamental principles of packaging design, including color theory, typography, layout composition, and the regulatory requirements for product labeling in Indonesia. This theoretical foundation was delivered through visual presentations and illustrated with comparative examples of before-and-after packaging redesigns drawn from real MSME cases. The second component introduced participants to the smartphone design application selected for the program, providing step-by-step guidance on navigating the application interface, accessing design templates, and customizing visual elements to suit individual product identities (Setiawan & Rahayu, 2022).

The third component comprised the core practical workshop, during which participants applied their newly acquired knowledge to design actual packaging for their own products under the supervision of trained facilitators. This hands-on session was structured to simulate real design workflows, encouraging participants to make iterative improvements based on facilitator feedback and peer review. The fourth and final component focused on output evaluation and post-training reflection, during which participants presented their completed packaging designs for collective assessment. Evaluation criteria included visual appeal, brand consistency, information completeness, and overall marketability.

Data collection for program evaluation was conducted through pre- and post-training questionnaires, facilitator observation notes, and participant focus group discussions. Quantitative data from the questionnaires were analyzed descriptively to measure changes in participants' design knowledge and self-efficacy, while qualitative data from observations and discussions provided contextual insights into participants' learning experiences and perceived program benefits. This mixed-methods evaluation framework ensured a comprehensive assessment of program effectiveness and provided a basis for future program improvement (Creswell & Creswell, 2023).

C. Results and Discussion

1. Participant Profile and Baseline Assessment

The training program successfully engaged 25 MSME actors representing diverse product categories, including food and beverage products (48%), handicrafts (28%), fashion and textile items (16%), and household products (8%). Participant demographics revealed that the majority

were women entrepreneurs (72%), consistent with broader national trends indicating the dominant role of women in Indonesia's MSME sector. Age distribution showed that participants ranged from 22 to 54 years of age, with the largest group falling within the 30–45 age bracket (56%), reflecting the predominance of mature entrepreneurs in community-based MSME ecosystems.

The pre-training assessment provided critical baseline data regarding participants' existing knowledge and skills. Results indicated that 84% of participants had never used a smartphone design application for product packaging purposes prior to the training. While 92% of participants owned smartphones, the majority reported using their devices primarily for social media communication and basic online commerce activities rather than for creative design work. Only 16% of participants reported having any prior exposure to digital design concepts, and none had received formal training in packaging design principles. These findings are consistent with Nugraha et al. (2022), who documented widespread digital literacy gaps among MSME operators in Indonesia, particularly in areas requiring creative and technical application of digital tools.

Regarding awareness of packaging standards and labeling requirements, 68% of participants indicated that they were unaware of the regulatory requirements governing product labeling in Indonesia, including mandatory information such as ingredient lists, production dates, expiry dates, and producer registration numbers. This finding highlighted a critical knowledge gap that extended beyond aesthetic design concerns to encompass legal compliance, underscoring the comprehensive nature of the training needs present within the participant group.

2. Training Implementation and Participant Engagement

The training program was implemented as planned across two full days, with all 25 registered participants completing the entire program. Facilitator observation notes documented consistently high levels of participant engagement throughout both days, with particularly strong enthusiasm observed during the practical workshop component. Participants demonstrated progressive skill development across the four training components, with initial hesitancy during the application introduction phase giving way to confident, independent design work by the conclusion of the practical workshop.

During the theoretical foundation session, participants responded positively to the use of comparative before-and-after packaging examples drawn from real

MSME cases. Several participants verbally acknowledged that viewing transformed packaging designs helped them recognize the commercial potential of improved packaging for their own products. This observation aligns with the findings of Sari and Kurniawan (2022), who noted that motivational engagement in packaging design training is significantly enhanced when participants can directly visualize the practical outcomes of skill application.

The smartphone application introduction session required the most intensive facilitator support, particularly among older participants who reported lower baseline familiarity with smartphone functionality beyond basic communication features. However, the user-friendly interface of the selected design application proved accessible even to participants with limited prior experience, and all participants successfully completed the introductory navigation exercises within the allocated time. This outcome validates the premise articulated by Pratama and Susanti (2023) that contemporary smartphone design applications have achieved sufficient usability to serve as effective tools for non-designer users in MSME contexts.

The practical workshop session represented the most impactful component of the training program, as evidenced by both facilitator observations and subsequent participant feedback. Working directly on packaging designs for their own products, participants demonstrated strong motivation and sustained concentration throughout the session. The iterative feedback process, wherein facilitators and peers provided constructive input on draft designs, proved particularly effective in helping participants refine their work and develop critical design judgment. By the conclusion of the workshop, all 25 participants had produced complete, print-ready packaging designs for at least one of their products.

3. Design Output Quality Assessment

The packaging designs produced by participants were evaluated against four criteria: visual appeal, brand consistency, information completeness, and overall marketability. Assessment was conducted jointly by the facilitating team using a standardized rubric, with scores recorded on a scale of 1 to 5 for each criterion.

Results indicated substantial improvements in design quality relative to participants' pre-existing packaging. In terms of visual appeal, 88% of participant designs received scores of 4 or 5, demonstrating that the majority of participants had successfully internalized core principles of color harmony, typographic hierarchy, and compositional

balance during the training. Brand consistency scores were slightly lower, with 76% of designs achieving scores of 4 or 5, reflecting the greater complexity involved in developing cohesive brand identities as opposed to individual design elements. Information completeness scores were the highest overall, with 92% of designs achieving scores of 4 or 5, attributable to the explicit instructional focus on regulatory labeling requirements during the theoretical session. Overall marketability assessments, which synthesized all four criteria into a holistic judgment, indicated that 84% of participant designs were assessed as market-ready or near-market-ready, representing a significant achievement given participants' complete lack of prior design experience.

Qualitative analysis of participant designs revealed several common patterns of improvement. Products in the food and beverage category showed the most dramatic visual transformations, with participants successfully transitioning from plain, text-heavy packaging to designs incorporating professional imagery, consistent color schemes, and clear product branding. Handicraft products benefited particularly from improved typography and layout, with participants learning to present product information in a structured, visually accessible manner. These qualitative improvements are consistent with the broader literature on the impact of design interventions on MSME product presentation, as documented by Andriani et al. (2023), who similarly observed transformative aesthetic improvements following structured packaging design training programs.

4. Knowledge and Self-Efficacy Gains

Post-training assessment data revealed significant improvements across all measured knowledge and self-efficacy dimensions. Participants' scores on the design knowledge assessment instrument increased by an average of 67% relative to pre-training baseline scores, reflecting substantial learning gains across the areas of color theory, typography, layout composition, and labeling requirements. Self-efficacy scores, measuring participants' confidence in their ability to independently create professional packaging designs using smartphone applications, increased by an average of 74%, indicating that the training had not only conveyed knowledge but had also meaningfully enhanced participants' belief in their own design capabilities.

These findings are consistent with the adult learning principles articulated by Knowles et al. (2020), who emphasize that effective training for adult learners must address both cognitive knowledge acquisition and affective dimensions of

learner confidence and motivation. The particularly strong gains in self-efficacy observed in this program suggest that the hands-on, practice-based approach was especially effective in building participants' confidence, as participants were able to observe their own design capabilities materialize in tangible, high-quality outputs during the workshop itself.

Subgroup analysis revealed that younger participants (under 35 years) demonstrated marginally higher knowledge gains, likely reflecting greater baseline familiarity with smartphone functionality. However, self-efficacy gains were relatively uniform across age groups, suggesting that the experience of successfully producing professional designs during the workshop was equally empowering for participants regardless of age or prior digital experience. This finding reinforces the argument advanced by Lestari and Prabowo (2022) that smartphone-based design tools, when introduced through appropriately structured training, can effectively bridge digital skill gaps across diverse demographic groups.

5. Perceived Impact on Product Sales Value

Participant perceptions regarding the potential impact of improved packaging on their products' sales value were assessed through post-training focus group discussions. The overwhelming majority of participants (96%) expressed strong confidence that their newly designed packaging would enhance the market appeal and perceived value of their products. Several participants shared specific plans to introduce their redesigned products to new market channels, including local supermarkets, online marketplaces, and regional trade exhibitions, channels they had previously considered inaccessible due to the unprofessional appearance of their packaging.

Participants also discussed their intentions regarding ongoing skill development, with 88% indicating that they planned to continue using the design application independently following the training to create additional packaging designs or update existing ones. This high rate of intended continued use suggests that the training successfully fostered not only immediate skill acquisition but also sustainable design practice habits among participants. As Hidayah and Santoso (2023) observed, the portability and accessibility of smartphone applications are critical enablers of continued learning and practice beyond the formal training environment, making them particularly well-suited for MSME capacity-building interventions.

The economic implications of these outcomes are significant. Research by Rundh (2021) has consistently demonstrated that professional packaging design is associated with increased consumer willingness to pay, improved product visibility in competitive retail environments, and stronger brand recall. For MSME actors operating in price-sensitive markets with limited marketing budgets, the ability to produce professional packaging independently using freely available smartphone applications represents a transformative competitive advantage. Maharani and Yusuf (2024) further noted that in the e-commerce context, where packaging imagery serves as the primary product representation, design quality has become a decisive factor in online purchase conversion rates, amplifying the commercial value of packaging design competence for digitally active MSMEs.

6. Program Strengths and Areas for Improvement

Critical reflection on the program's implementation identified several notable strengths alongside areas warranting improvement in future iterations. The most significant program strength was the immediate practical applicability of the training content, which ensured strong participant motivation and engagement throughout. The decision to structure the practical workshop around participants' actual products, rather than hypothetical design exercises, proved highly effective in sustaining relevance and personal investment in the learning process.

However, the two-day program duration was identified by both facilitators and participants as a limiting factor. While sufficient for foundational skill development, the compressed timeline did not allow for in-depth exploration of advanced design features or the development of comprehensive brand identity systems encompassing multiple packaging formats. Future program iterations should consider extending the training duration to three or four days, with additional sessions dedicated to brand strategy, digital marketing photography, and e-commerce product listing optimization, thereby providing a more holistic packaging and marketing skill set for MSME participants.

Additionally, the absence of a structured follow-up mechanism was identified as a gap in the current program design. Establishing post-training mentoring through a dedicated WhatsApp group or periodic follow-up sessions would enable participants to continue receiving guidance as they apply their design skills independently, addressing challenges and questions that arise in real-world application contexts. This recommendation is consistent with

the community empowerment literature, which consistently identifies post-training support structures as critical determinants of long-term skill retention and behavioral change among MSME program participants (Wulandari & Firmansyah, 2023).

D. Conclusion

This community service program demonstrated that structured, smartphone-based packaging design training represents an effective and accessible approach to enhancing the design capabilities and market competitiveness of MSME actors. The program successfully equipped 25 MSME participants with practical packaging design skills using smartphone applications, producing measurable improvements in design knowledge, self-efficacy, and output quality over a two-day training period. Pre-training assessments revealed critical gaps in both digital design literacy and regulatory labeling knowledge, while post-training evaluations confirmed substantial gains across all measured dimensions, with 84% of participant designs assessed as market-ready or near-market-ready by the program's conclusion.

The findings underscore the significant untapped potential of smartphone applications as empowerment tools for MSME actors, particularly when introduced through well-designed, practice-based training programs that prioritize hands-on skill application over purely theoretical instruction. The high rates of participant engagement, knowledge acquisition, and intended continued use observed in this program suggest that smartphone-based design training can generate durable improvements in MSME packaging quality and, by extension, product sales value and market competitiveness.

Several directions for future program development were identified, including extended training duration, incorporation of advanced brand development content, integration of e-commerce and digital marketing skills, and the establishment of post-training mentoring structures to support sustained skill application. Future research should also prioritize longitudinal evaluation of program impacts, tracking actual sales performance changes among trained participants over periods of six to twelve months following training completion, to provide more robust evidence of the program's long-term economic impact on MSME growth and sustainability. It is hoped that the findings and reflections presented in this article will contribute to the development of increasingly effective MSME empowerment programs and inform policy decisions regarding digital

literacy and creative economy development in Indonesia.

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