

## Training on the Utilization of Leather Waste from Bag Craft Industries into Keychain Products

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Received : 30 April 2026, Revised : 12 Mei 2026, Published : 19 Mei 2026

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### Abstract

*The leather bag craft industry generates waste that is often not fully utilized. This waste has the potential to pollute the environment if not properly managed. This community service activity aims to develop innovative ways to utilize leather waste into keychains that have economic value. The activity covers material selection, design, production processes, and product evaluation. The results of the activity include training and hands-on practice for women's organization members, resulting in several products such as keychains with various motifs including circles, squares, and other shapes. The outcomes demonstrate that leather waste can be processed into attractive, durable keychains that are in demand by consumers. In addition to reducing waste, this innovation has the potential to increase the income of women in the community as well as local artisans.*

**Keywords** - waste, leather, industry, creative, product

### Abstrak

*Industri kerajinan tas kulit menghasilkan limbah yang sering kali belum dimanfaatkan secara optimal. Limbah tersebut berpotensi mencemari lingkungan apabila tidak dikelola dengan baik. Kegiatan pengabdian kepada masyarakat ini bertujuan untuk mengembangkan inovasi pemanfaatan limbah kulit menjadi gantungan kunci yang memiliki nilai ekonomis. Kegiatan ini meliputi pemilihan bahan, desain, proses produksi, serta evaluasi produk. Hasil kegiatan berupa pelatihan dan praktik langsung bagi anggota organisasi perempuan yang menghasilkan beberapa produk gantungan kunci dengan berbagai motif, seperti lingkaran, persegi, dan bentuk lainnya. Hasil kegiatan menunjukkan bahwa limbah kulit dapat diolah menjadi gantungan kunci yang menarik, tahan lama, dan diminati konsumen. Selain mengurangi limbah, inovasi ini juga berpotensi meningkatkan pendapatan perempuan di masyarakat serta para pengrajin lokal.*

**Kata Kunci** - limbah, kulit, industri, produk kreatif

**How To Cite** : Suprihatin, E., Hidayah, A., & Pradana, A. F. B. (2026). Training on the Utilization of Leather Waste from Bag Craft Industries into Keychain Products. *Jurnal Pengabdian Masyarakat Bhinneka*, 4(4), 4923 - 4930. <https://doi.org/10.58266/jpmb.v4i4.1330>

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## **INTRODUCTION**

Waste is defined as the residual output of production processes or activities that is no longer utilized and is often considered undesirable. As stated by (Musapana & Amalia, 2020). It originates from various sectors, including household, industrial, agricultural, and service activities. As human activities inevitably produce waste, its management has become a critical environmental issue (Gunawan & Gondoputranto, 2022).

The leather craft industry, particularly in bag production, has experienced significant growth across various regions. However, this development is accompanied by an increase in leather waste, primarily in the form of small cut-off materials that are often discarded without further processing. If not properly managed, such waste contributes to environmental pollution due to its low biodegradability (Salmi, 2023).

In the context of sustainable development and circular economy principles (Zhang & Chan, 2016), waste should no longer be viewed as a useless by-product but as a potential resource with added economic value. One practical and scalable solution is the transformation of leather waste into functional and aesthetic products such as keychains. These products not only serve practical purposes but also hold artistic and commercial value (Sgroi, 2022), making them attractive to a wide range of consumers.

Leather waste presents a serious environmental concern due to its low biodegradability and the presence of chemical residues such as chromium and preservatives used during the tanning process (Babov et al., 2020). Improper disposal of this waste can lead to soil contamination and long-term environmental degradation. Therefore, effective waste management strategies are urgently required, particularly those aligned with the principles of sustainability and circular economy (López-Penabad et al., 2022), where waste materials are reintegrated into production cycles as valuable resources.

From a circular economy perspective, materials traditionally considered waste can be transformed into value-added products through innovation and creativity (Suhaeni, 2018). One promising approach is the utilization of leather waste into small-scale craft products such as keychains. Keychains represent a practical and aesthetically appealing product category that can be produced with relatively simple techniques, making them suitable for small and medium enterprises (SMEs) (Susanti et al., 2021) as well as community-based production systems (Saturwa et al., 2021).

In addition to environmental benefits, this approach also offers economic advantages (Mulyaningsih, 2019). By converting waste into marketable products, craftsmen can diversify their product lines and generate additional income. This is particularly relevant in rural areas where creative industries rely heavily on manual skills and locally available resources. Furthermore, the increasing global awareness of eco-friendly and sustainable products has created new market opportunities for recycled and upcycled goods, enhancing their competitiveness in both local and broader markets (Purnamawati et al., 2021).

Specifically, in Desa Dasri, Dusun Balokan, Tegalsari District, Banyuwangi Regency, the leather bag craft industry produces a significant amount of waste, reaching hundreds of kilograms per month. Most of this waste is disposed of without any economic value, contributing to environmental burdens at local disposal sites. At the same time, the limited technical skills of local craftsmen in waste processing hinder the optimal utilization of these materials. This condition highlights a gap between available resources and the capacity to transform them into economically valuable products (Prinsloo, 2018).

To address this issue, training programs focused on the utilization of leather waste into keychain products are proposed as an innovative and practical solution (Kasus et al., n.d.). These programs aim to equip local communities, particularly members of the Family Welfare Movement (PKK), with technical skills in material processing, design, and product finishing. By leveraging existing social structures and community networks, such training initiatives can foster collective production systems and strengthen local economic resilience (Julia & Dalimunthe, 2019).

Moreover, this study not only addresses environmental and economic issues but also contributes to the broader discourse on community empowerment and sustainable creative industries. By integrating simple production techniques, low-cost tools (Talalova et al., 2021), and environmentally friendly processes, this research proposes a replicable model for waste-based craft development that can be implemented in other regions with similar characteristics.

Therefore, this study aims to explore the potential of leather waste as a raw material for keychain production, evaluate its economic and environmental benefits, and develop a community-

based training model that supports sustainable waste management and local economic empowerment. Jumlah limbah dari pembuatan tas kulit sapi dapat dilihat pada table 1 berikut:

**Table 1.** Amount of Production Waste Bags

<b>Observation Month</b>	<b>Amount of Waste</b>
November 2025	60 Kg
Desember 2025	65 Kg
Januari 2026	72 Kg
Februari 2026	80 Kg
Maret 2026	84 Kg
Jumlah 2026	361 Kg

Table 1 shows the amount of waste from the production of cowhide bags located in Dasri Village, Balokan Hamlet, Tegalsari District, Banyuwangi Regency. It is known that the amount of waste from November 2025 to March 2026 totals 631 kg.

## **METHOD**

This study employed a community-based participatory approach integrated community service with applied to optimize the utilization of leather waste into value-added products. The research was conducted in Desa Dasri, Dusun Balokan, Tegalsari District, Banyuwangi Regency, involving local leather bag craftsmen and members of the Family Welfare Movement (PKK) as primary participants . The research design consisted of four main stages: waste collection, material analysis, product design and production, and product evaluation (Singgih et al., 2013).

In the first stage, leather waste materials were collected from local bag craftsmen. The collected waste primarily consisted of small offcuts and unused leather fragments generated during the bag production process (Salmi, 2023). These materials were then categorized based on size, thickness, and usability to determine their potential for further processing.

The second stage involved material analysis, aiming to assess the feasibility of leather waste as a raw material for keychain production. The analysis focused on physical characteristics such as texture, flexibility, durability, and thickness. This step ensured that only suitable materials were selected to produce high-quality and long-lasting products (Milkintas, 2020).

The third stage focused on product design and production. In this phase, keychains were designed using simple and accessible techniques, including cutting, shaping, weaving, and assembling. Additional components such as metal key rings were incorporated to enhance product functionality. The production process emphasized low-cost tools and manual techniques to ensure applicability in small-scale and home-based industries (Cavallo et al., 2021).

Furthermore, the study integrated a training component as part of the community empowerment approach. Training sessions were conducted on April 6, 2026, involving PKK members as participants. The training covered basic techniques in leather waste processing, including pattern cutting, simple weaving, and finishing. This approach aimed to improve participants' practical skills and encourage the adoption of sustainable production practices (Sgroi, 2022).

The final stage involved product evaluation, which assessed the quality of the keychains based on three main aspects: durability, aesthetic value, and market acceptance. Data were collected through direct observation, product testing (Hernández-Gracia et al., 2019), and simple consumer surveys. In addition, participant feedback was gathered to evaluate the effectiveness of the training program in improving knowledge and skills.

To strengthen the validity of the findings, this study adopted a mixed-method approach, combining qualitative observations and quantitative measurements, including production output and participant skill improvement. The evaluation of the training program also referred to the Kirkpatrick Model, covering reaction, learning, behavior, and results, to comprehensively measure the impact of the intervention (Gazem & Rahman, 2015).

## **RESULTS AND DISCUSSION**

The community service activity was conducted on April 6, 2026, in Desa Dasri, Tegalsari District, Banyuwangi Regency, involving members of the Family Welfare Movement (PKK) as the primary participants. The training program began with an introductory session on the environmental impact of

leather waste and its potential for reuse as value-added products.

Participants demonstrated high engagement during the session, particularly in understanding the economic potential of leather waste. The training not only provided theoretical knowledge but also emphasized hands-on practice, allowing participants to directly experience the transformation process from waste materials into functional products (Kesa et al., 2025). This participatory approach contributed to increased awareness of sustainable waste management practices among the participants.

One of the key outcomes of this program was the improvement in participants' awareness regarding waste management. Prior to the training, leather waste was generally perceived as unusable material and was often discarded without further consideration. However, after the training, participants began to recognize the potential value of such waste when processed creatively.

In addition to awareness, there was a noticeable improvement in participants' technical skills. Participants were able to perform basic production processes, including cutting, shaping, weaving, and assembling leather materials into keychains. This indicates that the training successfully transferred practical knowledge and skills that can be applied independently.

From a community empowerment perspective, this finding highlights the importance of skill-based training in transforming passive waste management behavior into productive economic activities. The involvement of PKK members also strengthens the role of women in local economic development, particularly in household-based creative industries (Pilin, 2015).

The production process consisted of several stages, including material selection, cutting, weaving or shaping, accessory attachment, and finishing. Leather waste was processed into various unique forms, such as small woven patterns and circular designs, enhancing both functionality and aesthetic value.

The final products were keychains made from leather waste combined with metal key rings. The finishing process, including gluing and surface smoothing, ensured that the products were durable and visually appealing.

The results demonstrate that leather waste can be effectively transformed into craft products with high aesthetic value. This supports the concept that small-scale creative processing can significantly increase the value of materials that were previously considered waste.

The utilization of leather waste into keychain products presents promising economic potential. With relatively low production costs and simple manufacturing techniques, these products can be produced efficiently at the household level.

The study indicates that such products are marketable due to their functional and aesthetic characteristics. In addition, the increasing trend toward environmentally friendly products further enhances their competitiveness. Consumers are becoming more interested in sustainable and recycled products, which positions leather-based keychains as a viable product in the creative market.

From an economic perspective, this initiative enables product diversification for leather craftsmen, allowing them to generate additional income from materials that were previously discarded. This contributes to improving the overall resilience of small-scale industries in the face of fluctuating market conditions. The effectiveness of the training program can be analyzed using the Kirkpatrick Model, which evaluates four levels: reaction, learning, behavior, and results (Miranti et al., 2018).

At the reaction level, participants expressed positive responses toward the training, indicating high satisfaction and interest. At the learning level, participants showed an increase in knowledge and understanding of leather waste processing techniques.

At the behavioral level, most participants were able to apply the acquired skills independently, demonstrating successful knowledge transfer. Finally, at the results level, the training contributed to the creation of marketable products and opened opportunities for additional income generation. This comprehensive evaluation confirms that the training program was effective not only in delivering knowledge but also in producing tangible economic and social outcomes.

The findings of this study reinforce the relevance of circular economy principles in small-scale industries. By transforming waste into valuable products, the program demonstrates how environmental challenges can be addressed through creative and community-based solutions.

Moreover, this study highlights the importance of integrating technical training with social empowerment. The involvement of PKK members as active participants shows that community-based approaches can enhance both skill development and collective economic capacity.



**Figure 1.** Leather bag waste cutting process

Based on Figure 1. leather bag waste is conventional waste management practices, which often focus on disposal, this approach emphasizes value creation. This aligns with previous studies that suggest waste-based creative industries can contribute significantly to sustainable development and local economic growth (Ananda & Widyastuti, 2025). Overall, the results indicate that the utilization of leather waste into keychain products is not only feasible but also impactful in terms of environmental sustainability, economic empowerment, and community development.



**Figure 2.** leather bag waste weaving process

Based on Figure 2. leather bag waste management practices, which often focus on disposal, this approach emphasizes value creation. This aligns with previous studies that suggest waste-based creative industries can contribute significantly to sustainable development and local economic growth. Overall, the results indicate that the utilization of leather waste into keychain (picture 1.3) products is not only feasible but also impactful in terms of environmental sustainability, economic empowerment, and community development.



**Figure 3.** Leather key chain

The training program was designed to empower leather bag craftsmen in Desa Dasri, Dusun Balokan, Tegalsari District, Banyuwangi Regency, through the optimization of leather waste into economically valuable keychain products (Hidayat et al., 2015).

In general, the program aims to implement circular economy principles by transforming industrial waste into value-added products that can serve as an additional source of income for local micro and small enterprises (SMEs). This objective aligns with regional development policies that promote creative industries based on local resources (Ananda & Widyastuti, 2025).

Specifically, the training has several key objectives. First, to enhance participants' technical skills in processing leather waste, including pattern cutting, simple weaving techniques, and environmentally friendly finishing processes. These skills are designed to be easily applicable using low-cost tools, ensuring accessibility for home-based production systems.

Second, the training aims to improve the economic capacity of participants by encouraging product diversification. By producing keychains from leather waste, participants are expected to generate additional income through the sale of value-added products in local and digital markets.

Third, the program seeks to reduce the volume of leather waste disposed of in landfills by promoting sustainable recycling practices. The training targets a significant reduction in waste through continuous reuse and production cycles, thereby contributing to environmentally responsible production systems.

Fourth, the training is intended to strengthen community capacity through group-based production systems. Participants are organized into collaborative groups to enhance productivity, knowledge sharing, and long-term sustainability of the initiative. This approach also fosters social cohesion and collective economic resilience within the community.

Finally, this training aims to develop a replicable community-based model for waste utilization that can be implemented in other regions with similar characteristics. By measuring indicators such as skill adoption and economic return, the program contributes to the development of sustainable creative industry practices and provides recommendations for future community empowerment initiatives.

## **CONCLUSION**

This study demonstrates that the utilization of leather waste from the bag craft industry into keychain products provides significant environmental, economic, and social benefits. The transformation of previously discarded leather waste into value-added products confirms the practical application of circular economy principles at the community level.

From an environmental perspective, the initiative contributes to reducing solid waste and minimizing pollution risks associated with untreated leather residues. By reusing waste materials, the program supports more sustainable production practices within small-scale industries.

Economically, the training program enables product diversification and creates new income opportunities for local craftsmen. The production of leather-based keychains offers a low-cost yet marketable product, allowing participants to generate additional revenue from materials that previously had no economic value. This contributes to strengthening the resilience of micro and small enterprises in the local creative industry sector.

Socially, the training enhances community capacity through skill development and collaborative production systems. The involvement of PKK members highlights the important role of community-based approaches in fostering empowerment, particularly among women, and strengthening local economic networks.



**Figure 4.** Training on utilizing leather bag waste

Furthermore, Figure 4. the evaluation results indicate that the training program was effective in improving participants' knowledge, skills, and behavioral practices in waste utilization. The high level of skill adoption and the ability of participants to independently produce keychain products demonstrate the sustainability of the program's impact (Ali et al., 2022).

Overall, this study provides a replicable model for community-based waste management and creative industry development. By integrating simple production techniques, local resources, and participatory training approaches, the model can be adapted to other regions with similar industrial characteristics. Future initiatives should focus on strengthening market access, product innovation, and institutional support to ensure long-term sustainability and scalability of the program.

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