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Upcycling Monk's Bowl Metal Scrap into Jewelry Designs under the Circular Economy Framework

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Abstract.

The objective of this research is to study cultural capital of Ban Bat community, Ban Bat Subdistrict, Pom Prap Sattru Phai District, Bangkok. Which is a center of handmade Buddhist alms bowl since Ayutthaya region and for jewelry souvenir design from metal scrap in alms bowl processing by using Circular Economy and Sustainable Development Goals (SDGs) concept as main frameworks. The research methodology consists of documents study, interview a community leaders and artisans and the alms bowl process analysis to identify the characteristics of recyclable waste materials. The research findings reveal that Ban Bat community generates a large amount of iron and brass waste. These materials are commonly sold as scrap without value added. Therefore, the researcher applied these metal waste to the design of contemporary jewelry, such as earrings, brooches and lapel pins while maintaining the community's identity through the unique "hammer mark" technique of Ban Bat community. The design outcomes demonstrate an alternative approach to income generation and the preservation of local wisdom which aligning with Sustainable Development Goal (SDG) 8, decent work and economic growth, as well as SDG 11, which emphasizes sustainable cities and communities. This research exemplifies creative development that connects to traditional handicrafts with modern design in order to encourage a sustainable community economy.

Keywords: Upcycling, Circular Economy, Contemporary Jewelry, Ban Bat Community

1. Introduction

The alms bowl has been used as a container for Buddhist monks for approximately 2,500 years and is also essential utensil for them which is stated in the code of monastic discipline "Buddhist monks must use the alms bowl that only made from clay or iron" and it is prohibited to use the alms bowl that made from valuable material such as gold, silver or brass. The traditional iron alms bowl must be made from eight pieces of iron assembled together which consists of one main body frame, two pieces of side panels, four curved panels and one rim. All components are welded by iron or copper and forming into various shapes by hand-hammered using fire-heating and blackening process for rust resistance and suitable for food containment. This production process requires a high level of craftsmanship and consumes amount of time to complete a single alms bowl, resulting a high cost of production. Recently, the production in alms bowl utilizes industrial technology methods, resulting production faster, easier and more cost-effective. However, alms bowl that produced through industrial processes are considered

inconsistent with Buddhist monastic discipline because it is formed from a single piece of metal instead of multi-pieces. Nevertheless, industrially produced alms bowl is still widely used and accepted among Buddhist monks.

Ban Bat community is located in Ban Bat Subdistrict, Pom Prap Sattru Phai District, Bangkok. It is a community with a traditional handicraft of making alms bowls that has been inherited from Ayutthaya to Ratanakosin Era. In these days, the characteristic of Ban Bat community is that they stay as a group for alms bowl production. Because the alms bowl production needs many steps and requires skill and meticulousness. Each craftsman has different area in expertise. Thus, one single alms bowl will be passed through the community until completion. Currently, Ban Bat community is affected by industrially production system because it has a lower cost of production. The order reduction for alms bowl in Ban Bat community led to lower community's income. However, some monks who are very strictly adhere to Buddhist monastic rules still use handmade alms bowls. But the income is insufficient to cover daily expenses, so the descendants of artisans were forced to leave the community to carry on another career to support their families. This factor makes the alms bowl handicraft lack of successors and with government support, Ban Bat community has become a cultural tourism destination; offering alms bowl learning center. The context of alms bowls has shifted from monk's utensil to souvenirs and gifts from the community but the mainly income still be the sale of alms bowls. (Pensiri Chartniyom, 2013)

Therefore, this research applies the concept of Circular Economy and the Sustainable Development Goals (SDGs) in order to improve Ban Bat community throughout the cultural product design based on information, contexts and the local lifestyles as essential foundations for this project.

1.1 Research Objective

1. To study the handicraft of alms bowl production and the socio-cultural context of Ban Bat Community.
2. To design souvenir products in the form of jewelry using leftover materials from the handicraft process of alms bowl production.

2. Body of paper

Literature review

1. Geographical Scope The research was conducted in Ban Bat Community, Ban Bat Subdistrict, Pom Prap Sattru Phai District, Bangkok, Thailand.
2. Population and Informant Scope The target population and key informants consisted of community leaders and local artisans of Ban Bat Community.
3. Content Scope and Study Procedures

3.1 A study of the handicraft tradition of alms bowl production and the socio-cultural context of Ban Bat Community, based on a review of relevant literature, previous research, and online sources.

3.2 Fieldwork data collection through site surveys and in-depth interviews with community leaders and local artisans of Ban Bat Community.

Methodology

In this research, the researcher defined the core concepts by using Circular Economy and Sustainable Development Goals (SDGs), applied them with the related researches and documents, information of alms bowl handicraft production in Ban Bat community, field surveys and the community context to analyze and synthesize for the cultural product design in the form of souvenir. The design identified a production processes and techniques that would not negatively impact the community's lifestyle and while also increasing community income.

Results

In this research, data were collected from both theoretical sources and fieldwork, including information on the processes and techniques of alms bowl production as well as product design. The analyzed data were then synthesized in accordance with the research objectives and methodological procedures as outlined below.

A Study of Alms Bowl Craftsmanship and the Context of Ban Bat Community

Based on field observations and in-depth interviews with community leaders and local artisans, the findings indicate that Ban Bat community has developed into a cultural tourism destination. The community provides educational exhibitions, demonstrations of alms bowl production, and customized product based on customer orders. Customer demand can be categorized into two purposes: (1) purchasing alms bowls for offering to Buddhist monks or for monks' personal use, and (2) purchasing alms bowls as souvenirs. The second purpose led the community to utilize brass as a material in alms bowl production.

The community has developed a smaller version handicraft called "miniature alms bowl" which has an approximate diameter of 2 centimeters and a height of 3 centimeters. This alms bowl is crafted using the same techniques as the production of full-sized alms bowls; however, welding processes are unable to apply. As a result, the joints of all eight metal components remain visible. The "miniature alms bowl" was developed as a souvenir product with a lower price compared to full-sized alms bowls. It is time-consuming and difficult to capture all details precisely due to their small size. Consequently, Ban Bat Community does not commonly produce these miniature alms bowls in advance for sale.

Figure 1: Miniature alms bowl developed using traditional alms bowl production techniques



Source: khanin Phriwanrat

According to the context of making the alms bowl production has changed to souvenirs, brass or other metal materials are used to producing them according to customers' demand. The production process involves cutting material into a desired shape, resulting in metal scraps of various shapes and sizes. The community's scrap metal management process typically involves collecting large quantities and selling them. This process is time-consuming in collecting all scraps and some of them is unable to sell due to it deteriorates. The researcher applied the concept of *transforming waste into production raw materials* based on the Circular Economy to the souvenir product design, (Tavornchotivong & Wichaikul, 2025). specifically jewelry that made from waste of traditional alms bowl handicrafts production, in accordance with objective number 2.

Design of souvenir jewelry from scrap materials of alms bowl handicrafts

Based on the first objective, the study of alms bowl craftsmanship and the context of Ban Bat community, the findings demonstrate that there was a large amount of metal scrap in various shapes and sized in the community. Therefore, the researcher combined the metal scraps and the concept of *transforming waste into production raw materials* based on the Circular Economy. Moreover, the Sustainable Development Goals (SDGs) 8 (Decent Work and Economic Growth) and 11 (Sustainable Cities and Communities) were incorporated in this framework. (Ding, 2023) The researcher apprehended the idea of jewelry design from metal scrap by using alms bowl production techniques which are easy and the community is able to undertake independently while maintaining the identity of Ban Bat Community. According to the conceptual framework, the researcher selected a metal scrap to cut it into "Na Wua" (curved shape) one of eight pieces, and a circle to make it more contemporary appearance. Then, adding a pattern of "hammer marks" which occurred from the alms bowl forming process. This process requires skill from local artisan to create a hammer marks. It is recognized that this "hammer marks" is an identity of Ban Bat community and incorporated them into a pattern jewelry design.

The resulting included earrings, brooches, and suit pins, which subsequently transferred to Ban Bat Community for further application and development.

Figure 2: Jewelry product developed through the reuse of by-products from alms bowl craftsmanship



Source: khanin Phriwanrat

3. Conclusion

The product development of jewelry from metal scrap in Alms bowl hammering processes based on the Circular Economy concept was conducted in accordance with the research objectives established for this study. The discussion of the research findings is presented as follows:

1. Application of the Circular Economy Concept in Ban Bat Community: Applying the circular economy concept to the metal waste from alms bowl production adds value to the materials, reduces waste and creates an environmentally friendly production approach. The community is able to reutilize available materials efficiently, leading to sustainable development at the local level. (Promsaka Na Sakolnakorn & Leknoi, 2021)

2. Product design for preserve a local wisdom. The design of jewelry products from metal waste while preserving the distinctive “hammer mark” technique of alms bowl craftsmanship shows the conservation of Ban Bat Community’s cultural identity. (Tenuta et al, 2024). In addition, this approach also generates income and employment opportunities for artisans and aligns with Sustainable Development Goal 8 (Decent Work and Economic Growth) and Sustainable Development Goal 11 (Sustainable Cities and Communities). This approach is consistent with the research entitled Developing Jewelry Design from the Arts of Phetchaburi Craftsmen: A Contemporary Accessory Exploration, which applies traditional arts to contemporary product design by employing a process of size reduction to align with current functional requirements. For example, architectural stucco ornamentation is transformed into

small-scale accessories such as brooches and keychains, enhancing both aesthetic value and contemporary relevance. (Chanoknart Mayusoh et al, 2025)

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References

- Chartniyom, P. (2013). Craft communities in urban space, Bangkok: Authenticity, preservation, and the role of craftsmanship. *Veridian E-Journal, Humanities, Arts and Social Sciences*, 6(2). <https://he02.tci-thaijo.org/index.php/Veridian-E-Journal/article/download/28285/24314>
- Ding, K. (2023). *Creating durable jewellery with the metal recovered from e-waste. Journal of Design Research Society*. <https://dl.designresearchsociety.org/cgi/viewcontent.cgi?article=1008&context=iasdr>
- Mayusoh, C., Suwannat, P., Inkuer, A., Juysukha, S., & Inkuer, A. (2025). *Developing jewelry design from the arts of Phetchaburi craftsman: A contemporary accessory exploration. Herança*, 8(1), 156-163. <https://doi.org/10.52152/heranca.v8i1/1063>
- Promsaka Na Sakolnakorn, T., & Leknoi, U. (2021). Community waste management under the circular economy concept of local administrative organizations. *Humanities and Social Sciences Journal of Pibulsongkram Rajabhat University*, 15(2), 362-373. https://doi.org/10.14456/psruhss.2021.28_so01.tci-thaijo.org
- Tavornchotivong, T., & Wichaikul, O. (2025). *Metal waste upcycling to textile and fashion design. TIAT Journal*, 7. <https://doi.org/10.14456/tiat.2025.7>
- Tenuta, L., Testa, S., Antinarelli Freitas, F., & Cappellieri, A. (2024). Sustainable materials for jewelry: Scenarios from a design perspective. *Sustainability*, 16(3), 1309. <https://doi.org/10.3390/su16031309>