

Transformable Jewelry Design: Applying the Transform Concept for Sustainable Fashion

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Received: October 30, 2025; **Revised:** December 24, 2025; **Accepted:** December 29, 2025

ABSTRACT

The purpose of this research was to study Transformable Jewelry Design: Applying the Transform Concept for Sustainable Fashion. The research method was carried out in 3 Phase: Phase 1: Studied information about jewelry design with concepts; Transformed from Research Papers Online Media Phase 2: Analyzed data to guide the design, and Phase 3: Designed jewelry derived from the concept. Transform The results of the study collected information on the concept. Transform concluded that the Transform concept in jewelry design was a development that responded to the needs of modern consumers who valued. It focuses on creating jewelry that could change shape or style according to different occasions and lifestyles. The main characteristic of this concept was a design that emphasized the variety of uses. The uniqueness of the wearer and the reduction of unnecessary resource consumption made jewelry not only an item of beauty, but also an economic, social, and environmental value. The benefits of the Transform concept included reducing the burden of buying multiple pieces of jewelry. It helped solve the problem of waste and wasteful use of resources, as well as increasing the opportunity for wearers to created their own unique styles freely. This responded to the needs of today's consumers and could be a design approach that took into account the use of value and was also in line with the concept of the creative economy.

Keywords: Jewelry Design, Transform Concept, Minimal Consumption

Introduction

Jewelry design is both an art and a science that harmoniously integrates aesthetics with functionality. The primary purpose of jewelry lies in enhancing one's image, boosting self-confidence, and expressing the individuality of the wearer. Moreover, jewelry carries social and cultural significance, often serving as a symbol of status or representing special meanings in various contexts. Today, jewelry is among the most widely used consumer products, and the global jewelry market continues to exhibit steady growth. In 2023, the market value exceeded USD 350 billion and is projected to expand by an average of 3–5% annually, reflecting the increasing consumer demand for both fashion and functional jewelry (Statista, 2023). This trend corresponds to the growing needs of younger generations seeking jewelry that combines aesthetic appeal with practical utility.

Thailand's gem and jewelry industry represents one of the nation's key economic sectors, generating export values of over 400–500 billion baht annually and playing a vital role in driving the country's economy (Department of International Trade Promotion, 2022). Meanwhile, major regional markets such as China, India, the United States, and Europe demonstrate high consumption rates, particularly among Generation Y and Generation Z, whose purchasing behavior has continued to rise for both everyday use and special occasions. These patterns indicate that jewelry is not merely a decorative object but also an economically valuable commodity with significant demand in the global market.

Jewelry design and development have continuously evolved to meet the diversity of consumer tastes and preferences in terms of beauty, luxury, and fashion identity. Younger consumers, in particular, prioritize modern design and versatility. However, the high volume of jewelry production and consumption has led to multiple issues, including excessive exploitation of natural resources through

precious metal mining that damages ecosystems, chemical contamination during production processes, and greenhouse gas emissions contributing to environmental degradation. Furthermore, overconsumption has resulted in large quantities of jewelry waste often outdated or out of fashion which is difficult to recycle due to the combination of mixed metals and materials. These challenges highlight that although the jewelry industry generates substantial value and income, it also poses significant environmental and sustainability concerns in the long term.

Currently, jewelry design trends are shifting toward addressing the diverse lifestyles of consumers who value cost-effectiveness, sustainability, and adaptability across different contexts ranging from formal work settings and social events to simple daily life. Surveys indicate that over 70% of younger consumers (Gen Y–Z) prefer jewelry that can be transformed or customized for different occasions, reflecting their demand for versatile products (McKinsey & Company, 2022). Correspondingly, the global market for adaptable or transformable fashion jewelry has grown at an average rate of 5–7% annually (Statista, 2023), underscoring consumers' increasing preference for multifunctional items. Such jewelry is no longer merely ornamental but has become a lifestyle accessory that allows wearers to adjust their appearance according to personal needs and social contexts. This has inspired new design processes that emphasize flexibility, diversity, and alignment with contemporary living patterns.

The concept of designing jewelry that can be transformed according to different occasions presents an innovative and practical solution to these issues. It offers comprehensive value both functionally and economically allowing consumers to own a single piece that can be adapted for multiple purposes, thereby reducing the need for excessive purchases and enhancing economic efficiency. Additionally, it addresses critical contemporary challenges, such as overconsumption of natural resources, waste generation from luxury products, and environmental impacts from mass production. At the same time, transformable jewelry empowers wearers to express individuality and creativity by personalizing styles to suit their character and lifestyle. This elevates jewelry from being merely decorative to becoming an embodiment of sustainable fashion.

Research objective

1. To study jewelry design with the Transform concept.

Hypothesis: The process of creating jewelry with the concept of Transform

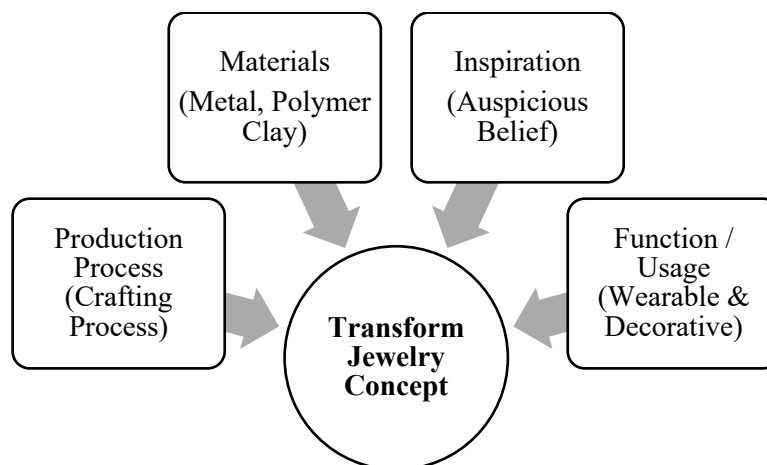


Figure 1. Conceptual framework used in the research

Source: Jensuda Tomuang, 2025

Research methodology

Scope of the Study

1. To study the concept of *Transform* in jewelry design.
2. To examine the properties of materials metal and polymer clay
3. for jewelry design based on the *Transform* concept.
4. To study the process of creating jewelry designs.

To design a jewelry set consisting of a ring, earrings, and a pendant. The research is divided into three main phases as follows:

Phase 1: Study and data collection to review literature, theories, and related case studies concerning transformable jewelry design and material selection.

Phase 2: Data analysis to analyze the collected data and synthesize design guidelines for creating transformable jewelry.

Phase 3: Design and development to apply the findings from previous phases to design and develop a prototype jewelry set that embodies the *Transform* concept.

Findings

The findings of this study were derived from a comprehensive review and analysis of academic literature, research articles, and relevant online sources concerning transformable design, sustainable fashion, and contemporary jewelry practices. The results indicate that the Transform concept constitutes a significant design approach that effectively responds to current consumer demands for versatility, sustainability, and personalization in jewelry products.

The analysis revealed that jewelry design based on the Transform concept can be systematically classified into three fundamental characteristics: form transformation, functional transformation, and meaning transformation. These characteristics collectively contribute to enhancing design flexibility, extending product lifespan, and increasing both aesthetic and symbolic value.

1. **Form Transformation** Form transformation refers to the capacity of a jewelry piece to undergo changes in its physical appearance while preserving its essential identity. This transformation may involve alterations in shape, size, structure, or visual configuration through mechanisms such as detachable parts, modular components, or interchangeable elements. Examples include pendants that can be converted into rings, earrings with removable or reconfigurable decorative elements, and necklaces designed for multiple wearing arrangements.

This characteristic significantly enhances the aesthetic adaptability of jewelry by allowing a single piece to present diverse visual expressions. Consequently, form transformation contributes to reducing fashion obsolescence and encourages prolonged use, aligning with sustainable design principles that emphasize resource efficiency and extended product life cycles.

2. **Functional Transformation** Functional transformation refers to the ability of a single jewelry item to perform multiple functions or to be worn in various forms without the need for additional products. Jewelry designed with this characteristic can be adapted to different usage contexts, such as formal, casual, or ceremonial occasions.

This aspect directly corresponds to contemporary consumer lifestyles that prioritize practicality, minimalism, and economic efficiency. Functional transformation increases the perceived value of jewelry by offering multifunctionality within a single product, thereby reducing excessive consumption and supporting sustainable patterns of use within the fashion and jewelry industries.

3. **Meaning Transformation** Meaning transformation involves the symbolic flexibility of jewelry, enabling a single piece to convey different meanings depending on its form, mode of use, or the context in which it is worn. Jewelry designed under this concept functions not only as

an ornamental object but also as a medium for expressing identity, values, and emotional significance.

For instance, a transformable jewelry piece may represent professionalism and elegance in a work environment, while symbolizing creativity or personal sentiment in social or cultural settings. This characteristic emphasizes the role of jewelry as a dynamic cultural artifact that adapts to the wearer's lifestyle and personal narrative.

Based on the synthesis of the Transform concept, four key design dimensions were identified as guidelines for the development of transformable jewelry.

1. **Design Dimension** Jewelry designed according to the Transform concept must exhibit structural flexibility and mechanical reliability, allowing components to be assembled, disassembled, or reconfigured with ease. The design should ensure durability and aesthetic consistency despite repeated transformations, while enabling users to actively participate in defining their personal style.
2. **Consumer and Behavioral Dimension** The findings indicate that contemporary consumers, particularly those belonging to Generation Y and Generation Z, place high importance on versatility and adaptability in fashion products. Transformable jewelry effectively addresses these behavioral patterns by providing designs that can be adjusted for both everyday wear and special occasions, thereby accommodating diverse and evolving lifestyles.
3. **Economic and Marketing Dimension** From an economic perspective, transformable jewelry enhances perceived product value by integrating multiple functions into a single design. This approach offers cost efficiency for consumers and creates differentiation opportunities for designers and brands in a competitive market. Furthermore, it supports marketing strategies that emphasize innovation, sustainability, and long-term usability.
4. **Environmental and Sustainability Dimension** The Transform concept contributes to environmental sustainability by reducing material consumption, extending product longevity, and minimizing waste generated from obsolete or unused jewelry. By encouraging multifunctional use rather than frequent replacement, transformable jewelry aligns with responsible design practices and sustainable consumption models within the jewelry industry.

4.1 Design Concept

The jewelry design concept draws inspiration from **auspicious flowers**, symbolizing good fortune and positive energy in life. Each selected flower represents a distinct aspect of well-being

4.1.1 Love Represented by the *pink rose*, symbolizing beauty, sincerity, and genuine emotional connection.

4.1.2 Wealth Represented by the *white lotus*, a symbol of prosperity, purity, and abundance, as well as a sacred emblem in Buddhist culture.

4.1.3 Career Represented by the *orchid* (pink-purple), which conveys stability, success, and professional achievement.

These symbolic elements are integrated into the design process to create a transformable jewelry set that not only embodies beauty and meaning but also supports the concept of sustainable and adaptive fashion.



Figure 2. Concept image
Source: Jensuda Tomuang, 2025

4.2 Design Sketch

The design sketches employ magnetic mechanisms as the primary system for assembling and disassembling components. This mechanism allows users to easily detach, interchange, and reconfigure decorative parts according to their preferences. The magnetic structure enables the jewelry to be transformed into multiple forms and functions, providing versatility in both appearance and usability through simple adjustments of interchangeable elements.

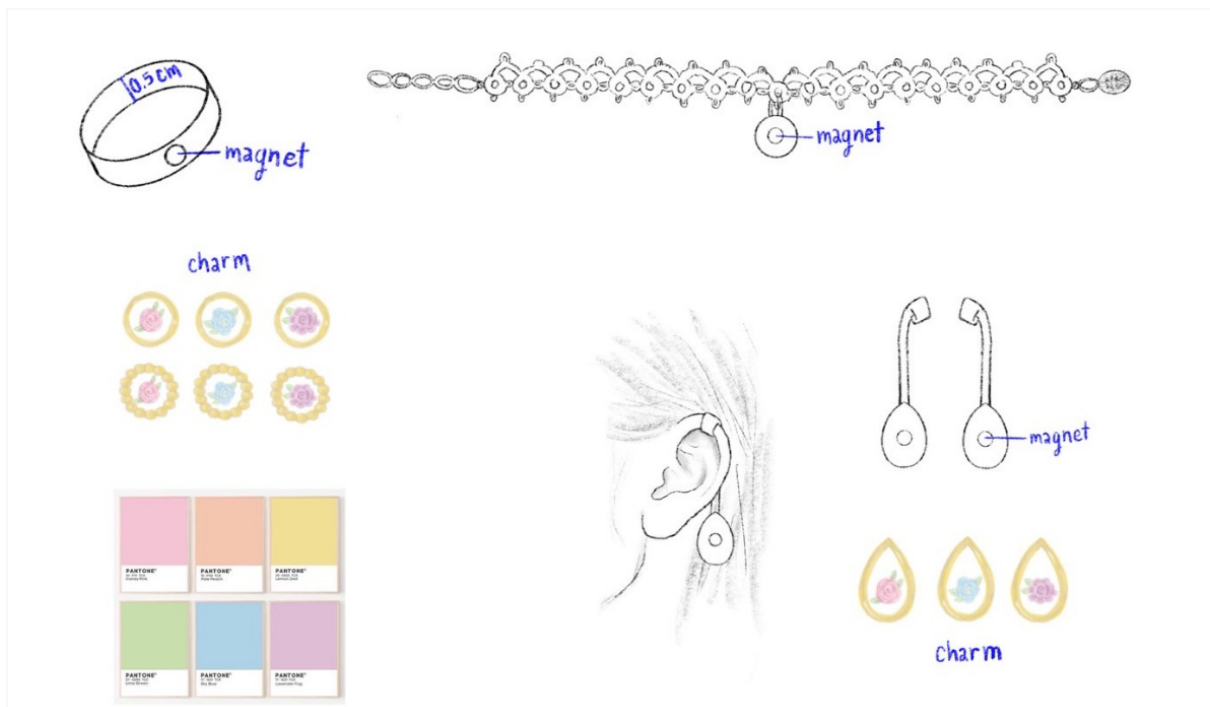


Figure 3. Sketch image
Source: Jensuda Tomuang, 2025

4.3 Prototype Development



Figure 4. Model development image
Source: Jensuda Tomuang, 2025

4.4 Jewelry design work with the concept of Transform



Figure 5. Model development image
Source: Jensuda Tomuang, 2025

Conclusions and Discussion

This research on jewelry design based on the *Transform* concept involved the collection, analysis, and application of relevant information to create design prototypes. The findings reveal that the *Transform* concept, which emphasizes versatility in form and function, effectively responds to the needs of modern consumers particularly Generations Y and Z who value practicality, flexibility, and adaptability to diverse lifestyles.

From a design perspective, transformable jewelry requires high flexibility in structure, allowing pieces to be assembled, disassembled, or modified easily. The materials used must be suitable for repeated transformation while maintaining aesthetic appeal, fashion value, and symbolic meaning.

In terms of benefits, the *Transform* concept helps reduce overconsumption by enabling users to own fewer pieces that can serve multiple purposes. This contributes to lower resource usage and waste generation within the jewelry industry while enhancing the economic value and sustainable image of the fashion sector.

However, the study also identified certain limitations, including the complexity of design and production processes that demand precision and craftsmanship, higher production costs compared to conventional jewelry, and durability concerns due to repeated transformations.

In conclusion, jewelry design guided by the *Transform* concept not only fulfills aesthetic and functional purposes but also aligns with the global trend toward sustainability. Moreover, it presents opportunities for innovation in both design methodology and material utilization, positioning transformable jewelry as a forward-looking direction for the contemporary fashion and design industry.

Discussion

1. It is recommended to integrate the *Transform* concept with sustainable design practices by utilizing environmentally friendly materials. This approach can enhance resource efficiency and create new market opportunities for the jewelry industry.
2. The prototypes developed in this study are preliminary. Incorporating advanced manufacturing technologies or collaborating with experienced jewelry designers could result in more refined and standardized products, suitable for commercial production.

References

- Baheel, J. K., & Al-Obaidi, S. A. J. H. (2025). *Interaction and functional structural transformation of product design*. **Journal of College of Fine Arts, University of Baghdad**, 10(1), 81–104.
- Department of International Trade Promotion. (2022). *Report on the value of Thailand's gem and jewelry exports*. Ministry of Commerce.
- Huang, H., et al. (2024). *Creative transformation and value realization of artificial intelligence in jewelry design field*. **Applied Mathematics and Nonlinear Sciences**, 9(1).
- Jiang, A., Huan, M., Choi, D.-O., & Kang, Y. (2024). *Optimizing eco-friendly jewelry design through an integrated eco-innovation approach using artificial neural networks*. **Scientific Reports**, 14, Article 84477.
- Lee, H. (2021). *Classification of transformable products based on changes in product form and function*. In *Proceedings of ICED21*. (Transformable product theory relevant for transformative product design research)
- Li, J. W. (2013). *The material aesthetics transformation of jewelry design*. In **Advanced Materials Research (Vols. 785–786, pp. 1590–1592)**. Trans Tech Publications.
- Li, R., & Yu, Y. (2025). *Research on innovative application path of sustainable materials in contemporary jewelry design*. **Studies in Social Science & Humanities**, 4(6), 59–64.
- McKinsey & Company. (2022). *State of fashion jewelry: Consumer insights and market trends*. <https://www.mckinsey.com>
- Shi, M., Zhang, C., & Chen, C.-L. (2023). *The evolution of corporate innovation in the O2O model—Case studies in the Chinese jewelry retail sector*. **Sustainability**, 15(17), 13017.

Statista. (2023). *Jewelry market worldwide: Statistics and facts*.
<https://www.statista.com>