

Creating fashion apparel with the concept of sustainable transformation using the mannequin-based shaping method

Rowan Abdul Latif Al-Ghamdi,

Fashion Design Department, Jeddah University, Kingdom of Saudi Arabia,
rawanabdullatif23@gmail.com

Feryal Saeed Salloum,

Fashion Design Department, Jeddah University, Kingdom of Saudi Arabia,
fsaloom91@gmail.com

Abstract:

With the growing fashion industry, commercial expansion, globalization, and technological advancements, there is an increasing interest in designing more diverse and visually appealing fashion pieces for consumers. One of the key aspects of fashion evolution in the 21st century is creating competitive designs that attract consumers. Fashion design is a crucial component of the global fashion industry (Al-Ghamdi & Al-Subyani, 2019).

As consumer demand for clothing has increased, fast fashion has emerged to meet these needs. However, this has led to significant environmental pollution. Scientific research indicates that clothing ranks second after food in consumer spending. Consequently, environmental concerns have become urgent, prompting Western countries to integrate sustainability into all sectors, particularly fashion and design (Ahmed, 2019).

Sustainable fashion is a new concept in the fashion world (Ahmed & Shaheen, 2020), aiming to produce clothing that maximizes positive impacts while minimizing negative environmental, economic, and social effects (Moon et al., 2013). Transformative fashion focuses on environmental sustainability through innovative designs that require new design practices emphasizing adaptability (Hazel, 2013). This approach enhances the utility, functionality, and aesthetic aspects of designs, allowing consumers to wear the same outfit in different styles to suit their diverse needs and preferences (Ahmed & Shaheen, 2020).

Fashion designers play a crucial role in extending the lifespan of clothing, which has positive environmental implications. Several studies have explored sustainability in clothing, such as Hur, Cassidy, and Thomas (2013), which examined sustainability in the product lifecycle by involving consumers in sustainable fashion solutions. Hur (2014), which empowered designers to explore sustainability as a tool for improving fashion design. Ferrer (2017), which explained the relationship between clothing design and sustainability principles related to social, environmental, and behavioral aspects. Mansour (2017), which developed women's clothing designs that could be adjusted while worn by integrating modular design systems with dart manipulation techniques to create unique fashion pieces. Moussa & Abdullah (2020), which explored multi-purpose fashion to enhance product competitiveness at lower costs using circular skirts as a design concept to achieve diverse functional and aesthetic values within a single design. Qadi & Faraj (2021), which developed an e-learning program to raise consumer awareness about sustainable fashion.

Given the importance of sustainability, this study focuses on developing transformative sustainable clothing using the draping technique. Draping is a fashion design method that relies on artistic sensibility, aesthetic appreciation, and the designer's ability to visualize. It involves directly shaping fabrics on a mannequin to create a harmonious relationship between the design, fabric, body shape, and the designer's artistic vision, allowing complete creative freedom (Al-Harithi, 2020; Mustafa & Abdul Khaleq, 2018).

Research Problem: The research problem arises from the rapidly changing fast fashion industry, which has numerous negative economic, social, and environmental impacts. This leads to the following research questions: What is the feasibility of developing sustainable women's clothing with a transformative concept using the draping technique? What are the expert evaluators' opinions on the functionality and aesthetics of the newly developed transformative designs? How do consumers perceive and accept the newly developed transformative designs?

Research Objectives: To develop sustainable women's clothing with a transformative concept using the draping technique. To assess expert evaluators' opinions on the newly developed transformative sustainable designs. To understand consumer perceptions and acceptance of the newly developed designs. To highlight designers and fashion brands that incorporate sustainability into their products.

Research Significance: Contributing to environmental sustainability by increasing the lifespan,

functionality, and aesthetic appeal of clothing while improving consumer usage patterns. Enriching the local market with fashion designs aligned with sustainable fashion trends.

Research Methodology: This study employs both the descriptive and quasi-experimental research methods to achieve its objectives. Descriptive Method: It involves analyzing the phenomenon as it exists in reality and expressing it qualitatively or quantitatively (Bouhouch & Al-Dhunaibat, 2007). This method is used to examine the concept of transformative sustainability and highlight fashion designers and brands that prioritize sustainability. Quasi-Experimental Method: It studies the relationship between variables as they naturally occur without manipulating them (BTS Academy, 2022). This method is used to develop transformative sustainable clothing using the draping technique.

Summary of Results: The feasibility of developing sustainable women's clothing with a transformative concept using the draping technique received a 98% approval rate from expert evaluators. The functional and aesthetic dimensions of the newly developed designs were confirmed with a 96% approval rate by the expert evaluators. Statistical analysis revealed significant differences in consumer acceptance levels for the newly developed designs at $P < 0.001$.

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References:

- 1- Ahmed, Rania, & Shaheen, Sanaa. (2020). Nubian ornaments as a heritage source for innovative necklace designs that achieve sustainability in women's fashion. *The Egyptian Journal of Home Economics*, Vol. (36), Issue (2), December, 231–268.
- 2- Ahmed, Shaimaa. (2019). Using environmentally friendly materials to achieve sustainability in the ready-to-wear industry. *Journal of Architecture, Arts, and Humanities*, Vol. (5), Issue (22), July, 157–174.
- 3- Ismail, Sabah. (2018). Developing standardized fashion designs for vocational high school students. *Journal of the College of Basic Education*, Vol. (24), Issue (101), July, 303–320.
- 4- BTS Academy. (February 16, 2022). The quasi-experimental method. Retrieved from <https://shorturl.at/1UHkB>.
- 5- Basil, Carla. (March 10, 2019). Dareen Hashem, a promising Lebanese brand, in a candid interview: "I love Rabih Kayrouz!" Retrieved from <https://2u.pw/aXynHuCL> on January 20, 2023.
- 6- Blueage. (2023). About us. Retrieved from https://theblueage.com/ba_ar/about-us on January 20, 2023.
- 7- Bouhouch, Ammar, & Al-Dhanibat, Mohammed. (2007). *Scientific Research Methods and Research Preparation Techniques*. 5th ed. Algeria: University Publications Office.
- 8- Impact Report. (2021). The Giving Movement. Retrieved from <https://2u.pw/yW9saFIv> on January 20, 2023.
- 9- Al-Harithi, Dalal. (2020). A sustainable design vision for the cultural heritage of the Hijaz region using the golden ratio in digitally printed scarves. *Journal of Specialized Educational Research*, Issue 59, July, 1–40.
- 10- Hassan, Rabab. (2016). The features of assemblage art as a source for designing fantasy fashion. *Journal of Specialized Educational Research*, Issue (44), October, 251–290.
- 11- Zaghoul, Sahar, & Al-Rasheedi, Maha. (2023). Innovative zero-waste transformative eveningwear designs for teenage girls to promote sustainable practice. *Heritage and Design Journal*, Vol. (3), Issue (16), August, 173–218.
- 12- Splash. (2023). About Splash. Retrieved from https://www.splashfashions.com/sa_ar/about on January 20, 2023.
- 13- Samir, Mai. (2012). The added value of multifunctional fashion design. Paper presented at the Second Conference of the Faculty of Applied Arts, Helwan University, Egypt.
- 14- El-Sayed, Om Mohammed, & Al-Manee, Hessa. (2024). Innovative designs for women's transformative clothing using laser technology. *Journal of Arts, Literature, Humanities, and Social Sciences*, Issue (111), August, 349–391.
- 15- Sayed, Shady. (2022). The art of material synthesis as a creative influence in draping fashion on

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- mannequins. *Journal of Arts and Applied Sciences*, Vol. (9), Issue (3), July, 97–115.
- 16- Al-Sha'er, Manal. (2019). Raising youth awareness of modern fashion trends (multifunctional – green) in the context of sustainable development. *Journal of Home Economics*, Vol. (29), Issue (1), January, 20–38.
 - 17- Al-Sheibi, Haifa, & Al-Omar, Mona. (2014). A self-learning program for pleat formation on mannequins. *Journal of Specialized Educational Research*, Issue (25), July, 1–244.
 - 18- Abbas, Shaimaa. (2019). Developing multifunctional clothing designs for TV presenters. *Scientific Journal of the Faculty of Specialized Education*, Vol. (1), Issue (18), April, 311–328.
 - 19- Aoun, Roxana. (February 25, 2020). More than five brands adopting sustainability in fashion for a better environment. Retrieved from <https://2u.pw/arLdRjLj> on January 20, 2023.
 - 20- Al-Ghamdi, Mona, & Al-Subyani, Noor. (2019). Drawing inspiration from the aesthetic values of Saudi visual arts for digital print designs and applying them to fashion on mannequins. *International Design Journal*, Vol. (9), Issue (2), April, 85–95.
 - 21- Qadi, Rua, & Farag, Mirahan. (2021). Effectiveness of an e-learning-based training program in raising consumer awareness of sustainable fashion. *Journal of Arts, Literature, Humanities, and Social Sciences*, Issue (65), March, 328–350.
 - 22- Mostafa, Amani, & Abdel-Khaleq, Raja. (2018). Enriching the visual values of optical illusion by integrating printed designs with mannequin-based garment formation for women's clothing. *Journal of Arts and Applied Sciences*, Vol. (5), Issue (2), April, 87–101.
 - 23- Mousa, Enas, & Abdullah, Zeinab. (2020). Artistic visions for circular skirts as a multifunctional fashion trend. *Journal of Specialized Education and Technology*, Vol. (15), Issue (6), August, 251–287.
 - 24- Cunha, J., & Broega, A. C. (2009). Designing multifunctional textile fashion products. In *Autex World Textile Conference*.
 - 25- Farrer, F. (2017). Discussing fashion textiles sustainability. In *Shaping sustainable fashion: Changing the way we make and use clothes*.
 - 26- Giannoni, G. (July 6). Viktor & Rolf Couture Fall 2016. *WWD women's wear daily*. Retrieved March 4, 2024, from <https://wwd.com/fashion-news/couture/gallery/viktor-rolf-couture-fall-10482119/viktor-rolf-couture-fall-2016-28/>
 - 27- Gwilt, A. (2020). *Practical guide to sustainable fashion* (2nd ed.). Bloomsbury Publishing.
 - 28- Hazel, Y. (2013). *The study of sustainability in transformable fashion* [BA (Hons) thesis]. The Hong Kong Polytechnic University, Institute of Textiles & Clothing.
 - 29- Hethorn, J., & Ulasewicz, C. (Eds.). (2016). Rissanen, T. Fashion creation without the creation of fabric waste. In *Sustainable fashion: Why now? A conversation about issues, practices, and possibilities* (pp. 184-206). Fairchild. <https://core.ac.uk/download/pdf/44346785.pdf>
 - 30- Hur, E. (2014). *Design and optimization of a user-engaged system for sustainable fashion* (Doctoral thesis). University of Leeds, School of Design.
 - 31- Hur, E., Cassidy, T., & Thomas, B. (2013). Seeding sustainability through social innovation in fashion design. In *Proceedings of the Crafting the Future: The 10th European Academy of Design Conference*. The European Academy of Design.
 - 32- Khan, M. M. R., & Islam, M. M. (2015). Materials and manufacturing environmental sustainability evaluation of apparel product: Knitted T-shirt case study. *Textiles and Clothing Sustainability*, 1(1), Article number: 8. <https://doi.org/10.1186/s40689-015-0008-8>
 - 33- Mansour, O. (2017). Integrating the concept of modular design and dart manipulation technique for the innovation of fashion design for women. *International Design Journal*, 7
 - 34- Moon, K. K.-L., Youn, C., Chang, J. M. T., & Yeung, A. W.-H. (2013). Product design scenarios for energy saving: A case study of fashion apparel. *International Journal of Production Economics*, 146(2), 392-401.
 - 35- Shawki, O., Ibrahim, R., & Abd El-Zaher, S. (2020). Creating sustainable fashion designs for women inspired by Mondrian paintings. *MJAF*, 5. <https://doi.org/10.21608/mjaf2019.19714.1387>
 - 36- Sykes, P. (2000, February 15). *Chalayan's Fall 2000 Ready-to-Wear Fashion Show*. *Vogue*. Retrieved March 4, 2024, from <https://www.vogue.com/fashion-shows/fall-2000-ready-to-wear/chalayan>

37- Verner, A. (2015, July 8). Viktor & Rolf fall 2015 couture. Vogue. Retrieved March 4, 2024, from <https://www.vogue.com/fashion-shows/fall-2015-couture/viktor-rolf>

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