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TEXTILE AND COPPER METALWORK SYNTHESIS IN AVANT-GARDE KEBAYA DESIGN: AN EXPERIENTIAL CO-DESIGN WITH LOCAL ARTISAN

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Jessica Dorothy Limanta[1], Rika Febriani[2], Maria Nala Damajanti[3]

[1,2,3] Textile and Fashion Design, Petra Christian University

*Corresponding author: jessdorlimanta@gmail.com

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Abstract. *This article applies an experiential design method to develop an avant-garde kebaya that integrates handcrafted local metal accessories. The main issue addressed is a lack of integration between local jewelry craftsmanship and experimental fashion concepts. The authors address the issue by applying a five-stage design thinking framework (empathize, define, ideate, prototype, and test) to experiment with kebaya forms which were transformed into three-dimensional avant-garde fashion silhouette. Data was collected through field observation and co-design process with the local metal artisan Nio El from Sidoarj. Data were qualitatively analyzed using studio-based visual and structural comparative analysis across a spectrum of innovation: from initial form explorations to radical structural deconstruction in the final design outcome. Results were validated through live-model fit testing and panel evaluation. The creative synthesis of textile-based fashion elements and three-dimensional accessories has produced a design concept that suggests the formation of a unique avant-garde aesthetic is viable through a spectrum of innovation possibilities, from minimum to maximum transformation. The conceptual design results imply that the fundamental principles of garment construction, such as the kebaya's central element of the brooch, the sheer body-wrapping textile, and the wrap skirt construction logic, are viable for generating a distinct avant-garde aesthetic. Ultimately, this practice-led exploration highlights educational implications for higher fashion design curricula seeking to integrate local artisan collaboration into studio practice.*

Keywords: *avant-garde design, design thinking, co-design, local artisan, kebaya innovation, copper metalwork, wearable art*

PRELIMINARY

The *kebaya* is an icon of Indonesian cultural heritage of women's clothing with historical textile craftsmanship. However, *kebaya* production in contemporary fashion has frequently been limited to ceremonial use or popular culture trends (Suraya, Rustiani, & Suseno, 2023). The current design practice has mostly remained either on historical replication or modernizations such as fabric substitutions, minor pattern alterations, or adding embellishment (Fitria & Wahyuningsih, 2019). Additionally, recent literature has cataloged common modifications in contemporary *kebaya*, showing that visual changes typically focus on shape details, specifically collar and sleeve variations, and material choices (Nagata & Sunarya, 2023). Furthermore, contemporary explorations demonstrate growing creative freedom to modify *kebaya*, such as blending tailoring techniques and symbolic concepts to express modern identity (Kuncoro & Arifiana, 2024). Meanwhile, the local craftsmanship practice has the potential to be developed as a new design approach since it has been recognized by many as an element of a unique character, cultural memory, and personalized production that could disrupt the current 'everything-is-the-same' logic (Conti & Vacca, 2008). Unfortunately, a significant issue exists between the two practices, as *kebaya* dressmaking usually

has no engagement with local craftsmanship and metalwork traditions. Thus, a new approach is needed to bridge this gap and provide a basis for a new avant-garde practice. This research aims to propose not only a superficial, component-substitution-based design approach but also to incorporate local craft metalwork into the process of developing an avant-garde fashion concept.

To address the identified theoretical challenge, this study adopts a conceptual model incorporating an experiential fashion approach, design thinking, and wearable sculpture principles. Rather than relying on a singular grand theory, this research will use a participatory co-design process that unifies the designer, traditional artisan craftsmanship, and live-model wearability testing as an experiential fashion approach (Conti & Vacca, 2008; Sanders & Stappers, 2008). This approach is operationalized through the five-stage design thinking framework which includes empathizing, define, ideate, prototype, and test as the primary methodological pipeline guiding studio-based iteration and reflective problem-solving (Anggraini & Nurhadi, 2023). Additionally, the principles of wearable sculpture (Elias, Garrido, & Steagall, 2021) will be used to conceptualize the adaptation of *kebaya* lines into anatomical forms as a basis for innovative wearable art practices. From this perspective, handcrafted metal accessories are no longer decorative elements but structural components that shape and support the avant-garde garment prototype.

This research is important because of the immediate need to recontextualize traditional Indonesian garments within the global fashion discourse and the contemporary design education community. As Handajani (2023) observes in her analysis of the UNESCO preservation discourse, the effort to secure the *kebaya* from extinction may result in its static form as a “stable” and “frozen” artefact limited by certain rules. To avoid the *kebaya* being reduced to a rigid standard design, the design education and practice communities should invest heavily in its contextualization as a living artistic medium that can be reimagined and reinterpreted in avant-garde approaches. In experimental fashion theory, an avant-garde approach elevates traditional attire beyond utilitarian clothing into conceptual art by prioritizing structural subversion and narrative framing over historical replication (de Perthuis, 2019). Recent practical explorations further validate that translating cultural heritage into avant-garde silhouettes allows structural manipulation such as adapting architectural or artisanal techniques into garment forms to replace literal visual imitation (Ramadhan & Indarti, 2025). Thus, taking the *kebaya* to avant-garde design is one way of expanding its conceptual depth and presenting it as a work of art rather than a historical replication.

National studies on kebaya innovation have explored various approaches to contemporary reinterpretation, particularly through textile pattern development, silhouette modifications, and surface embellishment (Fitria & Wahyuningsih, 2019; Kuncoro & Arifiana, 2024; Nagata & Sunarya, 2023; Suraya et al., 2023). While recent national research, such as Davis et al. (2024), has explored 3D embellishments on *kebaya encim*, the application focuses on textile decoration and minor pattern alterations. The exploration also resulted in a contemporary ready-to-wear deluxe design intended for occasion wear. In contrast, international fashion literature positions avant-garde experimentation as a vital creative trajectory to challenge conventional clothing forms and deconstruct traditional silhouettes (Adjei-Appoh & Ampadu, 2022). Consequently, this study investigates the integration of copper metalwork as a distinct craftsmanship discipline alongside textile practices which positions the kebaya beyond conventional occasion wear through an avant-garde design approach that explores experimental silhouettes, anatomical forms, and wearable sculpture principles. Accordingly, this study addresses the need for further exploration in fashion design studies concerning: (1) the reinterpretation of the kebaya as an avant-garde artistic medium beyond conventional garment categories; (2) the integration of textile craftsmanship and traditional copper metalwork in experimental garment construction; and (3) the application of design thinking in a practice-based fashion design process that translates traditional craft knowledge into innovative wearable forms.

This design project was conducted in collaboration with Nio El, an established metal artisan based in Sidoarjo, East Java, and founder of the Nio El handcrafted accessories enterprise featured in Bank Indonesia's Karya Kreatif Indonesia directory (Karya Kreatif Indonesia, n.d.). Before founding her handmade accessories brand as a local micro, small, and medium enterprise (*UMKM*) in 2011, she built her career in wire crafting by authoring four instructional books on copper wire techniques between 2007 and 2009. Since 2011, *Nio El has focused* on handcrafted metalwork and wire jewelry making, ranging from brooches to statement neckpieces with a characteristic of ethnic motifs and organic, nature-inspired forms. Informed consent was obtained from the artisan (Nio El) prior to data collection, granting permission to document the co-design process and publishing visual documentation of the resulting artifacts. Regarding intellectual property, the collaboration was conducted strictly for academic design experimentation with full attribution to the artisan. No transfer of design rights or commercial exclusivity was enacted; the artisan retains complete autonomy over her craft techniques and signature accessory designs, while the integrated avant-garde *kebaya* concepts are presented strictly as non-commercial academic research.

Based on a theoretical framework and a literature review, this study developed a design proposition to guide design experimentation and evaluation:

a) Design Proposition 1: The *kebaya* has innovative potential to be developed into an experiential design with a unique visual novelty, involving a more complex three-dimensional form, and being detached from conventional and popular cultural design.
b) Educational Implication: Beyond the immediate studio outcome, this practice-led exploration offers broader educational implications for higher fashion design curricula, demonstrating how engaging with local cultural artifacts and artisan craftsmanship can inform studio-based pedagogy and inspire experimental design methodologies.

This research introduces a new design perspective that transforms the *kebaya* into an expressive work of art, exploring the possibilities of avant-garde design from traditional adaptations to radical changes. The study applies a method that combines two very different materials: rigid handmade metals and flexible textiles. In the academic field, it adds value to fashion design education by providing a practical model for hands-on co-design learning. For industry and society, it connects universities with local crafts by helping artisans move from being subcontractors to becoming recognized creative partners, which boosts their skills and social standing in modern wearable art and fashion.

RESEARCH METHODS

This study employs a studio-based design thinking application, an experiential design approach, and wearable sculpture principles within a practice-led qualitative research framework. Studio-based design research was adopted because generating new scientific and pedagogical knowledge relies directly on creative experimentation, material manipulation, and physical prototyping (Choopani, Glomb, & Grundmeier, 2026). At the conceptual level, the scope centers on the ideation of the traditional Indonesian *kebaya* into expressive wearable art using experimentation process finished until physical prototyping. At the material level, the research explores the media integration of contrasting physical characteristics: textile and rigid metal pieces. In relation to the human body, the research explores the structural and ergonomic possibility of three-dimensional shape on the human body without compromising visual harmony or movement.

Primary qualitative data were captured across four procedural stages: (1) co-design ideation utilizing sketches and discussion notes; (2) artisan fabrication documented through photography and video during studio visit; (3) live-model ergonomic fittings generating observational field notes on body

interaction and weight distribution; and (4) iterative refinement based on the live-model fittings. Qualitative data were analyzed using visual and structural analysis combined with reflective design evaluation to analyze creative decision-making across prototype iterations.

The research uses a human-centered design thinking method in five steps: empathize, define, ideate, prototype, and test (Straker & Wrigley, 2023). These steps were put into action through the following process. Step (1) empathize phase: researchers conducted in total six field visits over a four-month period to Nio El's artisan workshop in Sidoarjo, East Java (totaling approximately 12 hours of direct interaction). Discussions and direct observation focused on analyzing the artisan's wire-crafting tools, copper materials, material tolerance limits, and hand-forging processes. Step (2) defines phase: researchers synthesized insights from the workshop visits to establish the technical scope and design parameters. To balance technical feasibility within the project timeframe with the desired aesthetic direction, it was concluded to focus on wire-wrapping and structural metal assembly techniques that directly leverage the artisan's specialized expertise to create 3D structural components. Step (3) ideate phase: researchers explore varying visual references to create mood board, design illustrations, and textile samples. Step (4) prototype phase: researchers developed a digital and physical product by making illustrations, fashion items, and textile drapery while the artisan created copper accessories prototype. Step (5) test phase: artifact evaluation was conducted through a two-tier evaluation instrument: (a) live-model fit and ergonomic testing involving a model wearing the assembled prototypes to assess tactile comfort, weight distribution, structural stability, and range of movement; and (b) panel evaluation consists of four fashion and design academics evaluation.

This studio-based experiment used specific materials and technical equipment from both textile and metalwork:

a) Textile materials and tools: structured liquid organza, chosen sheer textile (lace fabric), boning channels, industrial sewing machines, dress forms, and pattern drafting tools.
b) Metal materials and tools: raw copper sheets (0.8–1.2 mm), pure copper wire, metal wire, oxidation agents, ball-peen hammers, wooden mallets, metal shears, wire pliers, soldering torches, anvil, and polishing buffers.

Data collection combined several field methods and academic sources. Main data collection involved a discussion with metal artisan *Nio El* about techniques and possibilities, direct observations at the artisan's workshop during forging tests, prototype development, and design review. Secondary data collection involved a literature review of varying national and international journals (2007–2026) covering *kebaya*, avant-garde fashion ideas, design thinking methods, and artisan collaboration models.

RESULTS

The studio-based design experimentation produced two primary results: (1) a comprehensive co-design process documentation capturing the five-stage design thinking process conducted with artisan Nio El, and (2) a design outcome in the form of digital illustration realized as a physical fashion look synthesizing textile and copper metalwork.

1. Empathize Phase

Field research commenced with six visits over a four-month period to artisan Nio El's metalworking workshop in Sidoarjo, East Java (totaling approximately 12 hours of direct interaction). Field

observations and discussions focused on evaluating the artisan's traditional wire-crafting tools, copper wire gauges (0.8–1.2 mm), hand-forging techniques, and material tolerance limits.

2. Define Phase

Insights from workshop observations were synthesized to establish technical and design boundaries. To balance project timeframes with structural ambition, it was concluded to focus specifically on wire-wrapping and structural copper assembly techniques leveraging Nio El's core expertise. The design scope was defined around reinterpreting the traditional center brooch (*kerosang*) from a secondary decorative fastener into a primary, load-bearing 3D structural component.

3. Ideate Phase

Creative exploration through digital mood boards, design sketches, and final design illustration were constructed to map the ideation.



Figure 1. Moodboard
Source: Author, 2026

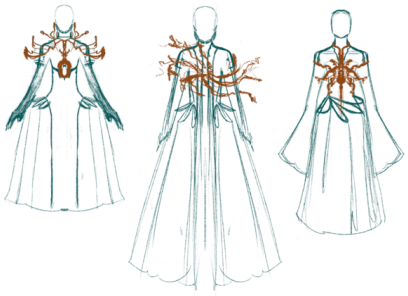

Figure 2. Design Sketch Ideation
Source: Author, 2026



Figure 3. Final Design Illustration
Source: Author, 2026

This resulting design emphasized extensive structural deconstruction, material manipulation, and integration of three-dimensional metal elements. Within the study's scope, researchers followed "the radical experiments of a workshop of creative designers to create a stylistic shift" (Lynch & Strauss, 2007, p. 100) for design decisions. Although Lynch and Strauss described these workshop experiments as leading to commercial mass fashion, this study instead applies that approach to avant-garde wearable art. In the final design, the overall look of *kebaya* is transformed from a flat textile garment with decorative jewelry into a three-dimensional wearable sculpture, using handcrafted metalwork as the main structural support that required reworking garment pattern making, fabric manipulation, and metalwork creation. This design centers on the experimental re-conceptualization of the traditional 'center brooch' (*kerosang*). Traditionally, the center brooch fulfills a functional and secondary decorative purpose to secure the front placket of a *kebaya*. Within the avant-garde design paradigm, its function is fundamentally transformed: the center accessory is redefined as the primary subject and sculptural focal point of the garment.

Meanwhile, several features of classic *kebaya* are fundamentally transformed into a new avant-garde aesthetic. First, the upper garment shows the familiar characteristics of fabric used in classic *kebaya*. Traditionally, a sheer and body-wrapping textile is associated with *kebaya* construction. The design intervention simplifies the cut and seamlines to create a minimalist wrap silhouette, while incorporating an innovative element through gradient dyeing using ombré techniques on the sleeves. The sleeves employ a dip-dyeing technique, allowing color to transition gradually from a more concentrated saturation to a lighter tone through controlled immersion. The use of dyeing in this design reflects an appreciation for the role of color and dyeing processes in Indonesian textile traditions, including *batik, tenun*, and many more, which serve as sources of inspiration rather than direct technical references. The resulting color transition across the lace fabric enhances visual depth and provides an experimental value

to the textile. While the upper garment shows a familiar characteristic, the lower part is transformed radically. This experiment reinterprets the essence of traditional wrap skirt (*kain lilit*) that traditionally functions as a practical fabric folded around the waist and hips. This experimentation includes fabric manipulation to expand the essence of flat textile wrapping into a decorative three-dimensional drapery. A different texture of a traditional wrapping textile is also realized through liquid organza.

4. Prototype Phase

Prototyping was executed through a synchronized workflow between the design studio and the artisan workshop. The design studio execution includes garment pattern drafting, 3D fabric drapery using structured liquid organza, ombré gradient dyeing, sewing, and garment construction which were conducted at Petra Christian University design studio. Simultaneously, artisan Nio El forged and wire-wrapped custom copper structural elements at the artisan's personal studio. This prototyping phase spanned four months in total, punctuated by periodic workshop visits to review work progress, navigate technical challenges through collaborative problem-solving, and ensure the precise physical integration of the metal chassis and textile drapery.

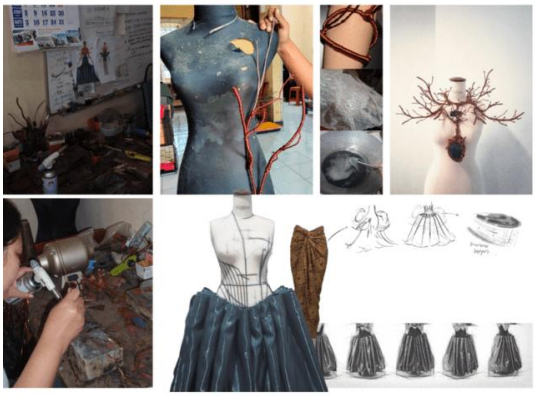

Figure 4. Prototype Phase Progress Documentation
Source: Author, 2026

5. Test Phase

Initial prototype assembly was subjected to live-model fitting sessions to evaluate body interaction, weight distribution, and movement. Observational field notes revealed localized pressure points along the collarbone and slight sagging at the back waist. The prototype was returned to Nio El's workshop for iterative adjustments: copper contact points were padded with hidden textile linings, and load-bearing wire anchors were redistributed across the shoulder girdle to ensure structural stability during body movement.

Wearability testing was conducted to evaluate the prototype in terms of comfort, movement, and fit.

a) Comfort: the model reported that the textile and copper metalwork was generally comfortable to wear simultaneously. A suggestion for future development concerns the weight of the metalwork, as the copper components became noticeably heavy after approximately 15 minutes of standing or walking, indicating the need to further consider weight distribution to improve prolonged wearing comfort.
b) Movement: despite the three-dimensional skirt construction and metalwork components, the model was able to walk, sit, and perform various body movements and poses without significant restriction.

c) Fit: the constructed wrap skirt imitating *kain lilit* maintained its intended silhouette and shape during wear, including while sitting. Furthermore, the copper metalwork's components worn around the upper body remained securely positioned. These findings indicate the prototype's potential for wearable application while highlighting the weight of the metalwork as an aspect requiring further consideration in future development.

The qualitative evaluation of the final design outcome by the four academic experts was guided by a structured descriptive rubric matrix. As presented in table below, the instrument breaks down the evaluation into three primary design criteria: novelty, avant-garde aesthetics, and wearability.

Table 1. Qualitative Expert Evaluation Rubric Matrix

Criterion	Focus	Findings Evaluation
Novelty	Conceptual departure and structural innovation	**Radical innovation:** Highly commended for breaking away from 2D dressmaking. Evaluators highlighted that transforming the copper *kerosang* into a load-bearing 3D framework creates an unprecedented structural silhouette.
Avant garde aesthetics	Visual balance, 3D volume, and material integration	**Sculptural Avant-Garde Expression:** Recognized for achieving strong avant-garde characteristics through deconstructed 3D volume, while maintaining a clear, respectful connection to the silhouette and cultural essence of the *kebaya* parts.
Wearability	Ergonomics, anatomical fit, and movement	**Functional performance piece:** Identified as a runway or exhibition statement piece. Three models (including the model during test phase) confirmed that the metalwork piece is bearable, stable during wear, and does not restrict natural body movement.



Figure 5. Final Design Physical Outcome
Source: Author, 2026

DISCUSSION

Reinterpreting the traditional kebaya through an avant-garde framework prevents it from becoming a static, historical relic (Handajani, 2023). In conventional dressmaking, the central brooch (*kerosang*) serves as a minor decorative fastener. In the final design, this element was radically scaled up and transformed into a primary, load-bearing 3D structural piece. By prioritizing structural subversion and spatial volume over flat body-wrapping, the design aligns with foundational avant-garde fashion theory, specifically Rei Kawakubo's manifesto on breaking conventional expectations of clothing to create sculptural, non-conforming architecture around the human form (de Perthuis, 2019), elevating traditional attire from utilitarian clothing into a three-dimensional wearable sculpture.

To highlight the novelty of this study, the final design outcome must be critically compared with recent research by Davis et al. (2024), who also explored 3D embellishment elements on *kebaya encim*. While Davis et al. applied 3D textile manipulation and beading as surface decoration onto a conventional garment cut, this study uses handcrafted metalwork as a functional and artistic expression. This shifts *kebaya* design from decorative modification to architectural deconstruction. Reimagining the *kebaya* as wearable art enables a spectrum of creative possibilities, demonstrating that traditional clothing can evolve far beyond simple fabric substitutions or surface-level embellishment (Dehkordi et al., 2020). Consequently, this research suggests that innovative design ideas can emerge directly from cultural artifacts and local genius. These elements offer rich potential for establishing a distinct narrative identity in Indonesian avant-garde fashion while challenging the notion that ethnic attire must remain static (Handajani, 2023).

CONCLUSION

This study demonstrates the potential of *kebaya* to be reinterpreted through avant-garde design, creating distinctive visual expressions through complex three-dimensional forms beyond conventional and popular cultural interpretations. By integrating textile experimentation and metalwork craftsmanship, the research expands the possibilities of traditional garment innovation. Beyond its design outcomes, this practice-led exploration highlights the educational value of engaging with local cultural artifacts and artisan expertise. It offers an approach to studio-based fashion education that encourages experimental thinking and the exploration of traditional craftsmanship through contemporary design practices.

Several limitations bound this investigation: the researchers focused on a single physical prototype developed with one metal artisan, and the outcomes were evaluated through qualitative expert panel reviews rather than large-scale quantitative wearer trials or commercial market testing. To build upon these foundational findings, future research should explore three key directions:

1. Diverse craft media: applying the co-design pipeline to other traditional craft mediums, such as structural wood carving, handloom weaving, leatherwork, and many more.
2. Collection scalability: expanding the single-artifact model into a full collection to test the scalability of metal-textile joinery on the runway.
3. Empirical wearability testing: conducting systematic quantitative ergonomic and fabric durability assessments under extended live performance conditions.

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BIBLIOGRAPHY

Adjei-Appoh, G., Acquaye, R., & Ampadu, J. (2022). The concept of avant-garde as a creative fashion design trajectory in Sekondi Takoradi-Ghana. *Textile & Leather Review*, *5*(7), 120-131. https://doi.org/10.31881/TLR.2021.35

Anggraini, R. D., & Nurhadi, D. (2023). Design thinking dalam riset dan pengembangan produk fashion. *Briliant: Jurnal Riset dan Konseptual*, *8*(2), 328-337. http://dx.doi.org/10.28926/briliant.v8i2.1107

Choopani, H., Glomb, M., & Grundmeier, A. M. (2026). Reflection in action: A design-based pathway to sustainability in fashion design higher education. *International Journal of Fashion Design, Technology and Education*, 1–11. https://doi.org/10.1080/17543266.2026.2693326

Conti, G. M., & Vacca, F. (2008). Textile traditions and fashion design. New experiential paths. In C. Cipolla & P.P. Peruccio (Eds.). *Changing the Change. Design, Visions Proposals and Tools*. Proceedings (pp. 1-14). Turin: Conference Press.

Davis, V. A., Enrico, E., & Githapradana, D. M. W. (2024). Perancangan special occasion wear terinspirasi dari *kebaya* encim dengan teknik 3D embellishment. *Moda: The Fashion Journal, 6*(1), 62-72.

Dehkordi, R.M., Vaezizadeh, M., & Aghajani, J. (2020). Postmodernist ideas in contemporary fashion design. *Revista Orbis, 15*, 103. https://doi.org/10.5281/zenodo.8118271.

de Perthuis, K. (2019). Breaking the Idea of Clothes: Rei Kawakubo's Fashion Manifesto. Fashion Theory, 24(5), 659–677\. https://doi.org/10.1080/1362704X.2018.1531621

Elias, L., Garrido, M. L., & Steagall, M. (2021, December). The conception of “fashion-sculpture” in Rei Kawakubo’s costumes for the choreography “Scenario”(1997). In *LINK 2024 Conference Proceedings* (Vol. 2, No. 1).

Fitria, F., & Wahyuningsih, N. (2019). *Kebaya* kontemporer sebagai pengikat antara tradisi dan gaya hidup masa kini. *ATRAT: Jurnal Seni Rupa*, *7*(2), 128-138.

Handajani, S. (2023). *Kebaya* dan wacana pelestarian. *Lembaran Antropologi*, *2*(2), 136-152. https://doi.org/10.22146/la.12421

Kuncoro, A. D., & Arifiana, D. (2024). Penciptaan Desain Kebaya Bergaya Funky Bertema “Kebaya Around the World “dengan Inspirasi Bar Jacket. BAJU: Journal of Fashion and Textile Design Unesa, 5(2), 252-261. https://doi.org/10.26740/baju.v5n2.p252-261

Lynch, A., & Strauss, M. (2007). Changing fashion: A critical introduction to trend analysis and meaning. Berg.

Ramadhan, L. H., & Indarti. (2025). Avant Garde Fashion Design with Kalta Minor Tower Inspiration Using Weaving Techniques. *Journal of Creative Industries and Vocational Innovation, 1*(2), 123–133. https://doi.org/10.26740/visiora.v1i2.54428

Straker, K., & Wrigley, C. (2023). Research handbook on design thinking. Edward Elgar Publishing. https://doi.org/10.4337/9781802203134

Suraya, R.S., Rustiani, K.W., & Suseno, S. (2023). *Kebaya* dan budaya populer: Pembentukan identitas ideologis perempuan modis oleh kapitalis. *Jurnal Ilmiah Widya Sosiopolitika, 5*(2), 190-198. https://doi.org/10.24843/JIWSP.2023.V05.I02.P08