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Feasibility Analysis of QR Code-Based Ready-to-Wear Fashion as a Creative Innovation in the Fashion Industry

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ABSTRACT - This study aims to describe the process of making QR Code-based ready-to-wear clothing, analyze the feasibility of fashion based on six indicators, and explain the role of QR Code as an informative fashion identity. The research approach uses a quantitative descriptive method with a survey design. The object of the research consisted of a set of ready-to-wear clothing, including sleeveless batik underwear, a crop blazer with a strappy collar featuring an embroidered QR Code on the back, and cargo pants. Feasibility data were obtained through an assessment instrument containing thirty statements that included indicators of design, size, aesthetics, sewing techniques, fashion performance, and specialties. These statements were assessed by expert panelists and trained panelists, who evaluated them based on their knowledge and experience in the fashion field. The data was analyzed using percentage descriptive techniques to determine the category of fashion feasibility in each indicator and as a whole. The study's results showed that QR Code-based ready-to-wear clothing achieved an average feasibility level of 93.08%, categorized as very feasible, with assessments of 92.53% from expert panelists and 93.63% from trained panelists. All indicators fell within the very feasible category. The embroidered QR Code on the back of the blazer acts as a visual accent that is in line with the theme of *Teknika* and serves as a link to digital information about the concept and philosophy of the work, thereby strengthening the fashion identity while showing the potential use of digital technology as an information medium in fashion products.

Keywords: Ready-to-wear, QR Code, fashion eligibility, fashion industry.

INTRODUCTION

The rapid development of information technology and digital media is driving a shift in fashion trends, which are becoming increasingly dynamic. Fashion has become an integral part of everyday life because it is no longer just used to protect the body, but also to express personality, lifestyle, and visual identity. Salma & Falah (2023) explain that fashion conveys the messages and ways of life of individuals and communities, and is chosen based on colors, models, styles, and aesthetic values that are perceived as being in accordance with the wearer's character. The younger generation often associates fashion choices with efforts to build their self-image in front of others, so that the appearance shown through photos and videos becomes part of nonverbal communication. Research by Witjaksono et al. (2025) shows that Influencers on Instagram leverage content, fashion, and the style of dress to build a particular narrative and influence the way the audience interprets the performer in everyday life. The rapid flow of information through social media makes it easy for clothing style trends to spread and evolve, resulting in a diverse range of fashion preferences within the community. This condition gives rise to a diversity of fashion forms and categories in the fashion industry, which need to be understood through the classification of clothing based on its construction and style of dress.

Classification of fashion in the industry is generally differentiated based on the way it is made and the level of exclusivity of the product. The categories at the most exclusive level are known as Haute Couture or adibusana, which refers to original designs of clothing created with a high level of sewing techniques, using the finest materials, and

made specifically for one order, resulting in minimal quantities. Mayun & Sari (2021) explain that high-end fashion occupies the highest level in the fashion world, above middle market and Mass Market, with a very exclusive product character and limited production. Another category that still highlights the personal touch is fashion Costume Made or made to order, which is clothing that is made according to the size and desires of the order, and is often decorated with decorations that are done in a way that is done Handmade so that it is not mass-produced and maintains an exclusive impression for the wearer (Christy et al., 2022). Ready-to-wear fashion, which is produced based on standard sizes, is more numerous and intended for daily clothing needs, allowing for a higher proximity to consumers compared to the very exclusive category. Mayun & Sari (2021) are placing this ready-made product on the market layer below Haute Couture and High-End Fashion, as it is intended for consumers who require practical fashion while still following fashion trends and aesthetics. This position is one of the reasons for choosing Ready-to-wear clothes as the focus of this study, because this category provides a vast space for designing suits that are functional, comfortable, and still have a clear design character.

The need to dress for daily activities is primarily met by fashion-ready-to-wear, which is manufactured in standard sizes and offered in a variety of styles, including casual, streetwear, Smart Casual, and formal. Research by Hidayatunnisa et al. (2024) indicates that the fashion Ready-to-wear was developed to be practical for use in both recreational and daily activities, while still prioritizing the comfort and feasibility of the fashion display. Other research by Putri et al. (2022) involves designing ready-to-wear suits for mothers and children, which are easy to wear and adaptable to daily activities, ensuring a functional yet stylish appearance. The settings ready-to-wear studied in this study are designed with a tendency towards streetwear through the use of inner batik alloy, blazers, and cargo pants, which match the clothing styles of the younger generation who love a casual yet structured look. In line with fashion design trends, Ready-to-wear brings a modern and flexible look to the wearer (Nesi & Utami, 2023). The character of Ready-to-wear is seen as the fashion category that is closest to the need for daily clothing and is relevant to be the focus of this research.

Fashion Ready-to-wear can be understood as ready-to-wear clothing that is produced in standard sizes so that it can be used directly without the process of measurement and re-stitching, in accordance with the development of fashion Ready-to-wear made from denim waste, designed based on consumer body size standards to support leisure and recreational activities in daily life (Hidayatunnisa et al., 2024). Shape Ready-to-wear very diverse, ranging from blouses and shirts, skirts and pants, to types of outerwear such as jackets and blazer, as well as suits that combine several pieces of clothing in one look, as shown in the design of women's clothing from the Ende ikat weaving material that processes the dress, blazer, pants, outer, and skirt are modern fashion designs that are flexible for women of productive age (Nesi & Utami, 2023). Collections Ready-to-wear It is also widely developed in the form of a set of clothes that complement each other so that it is easy to mix and match like in fashion design Ready-to-wear Mother and child that utilize the combination of tops, bottoms, and outerwear in one design concept so that it is practically used for daily activities but still displays the character of a particular style (Putri et al., 2022). Research conducted by Hidayatunnisa et al., (2024), Nurse & Nurse (2023), and Putri et al. (2022) who discussed the development of fashion Ready-to-wear As a modern setting that is flexible for the wearer, it can be understood that the ready-to-wear category demands fashion design that is not only comfortable and functional, but also presents the style and character of the wearer through a single look—fashion Ready-to-wear. The object of this research is a suit consisting of a sleeveless batik inner, blazer, and cargo pants, designed to present a practical, comfortable, and stylish streetwear casual look. This concept emphasizes the need for comfortable clothing that still conveys character, which is an important foundation in designing ready-to-wear suits as the object of research.

Products Ready-to-wear Those circulating on the market are generally only equipped with conventional labels containing brand names, sizes, material compositions, and care instructions. In contrast, information about the design theme, collection names, and philosophies behind batik motifs is rarely included directly on the clothing. Fashion identity is more effectively conveyed through visual displays, such as motifs, colors, and silhouettes. So, users who want to understand the design must look for explanations through other media. Research Andriyanti et al., (2022) about the application of North Sumatra ornament in fashion design Ready-to-wear With the screen printing technique, it shows that the initial appeal of fashion is directed to visual ornaments and contemporary casual styles to attract the attention of the younger generation, while the explanation of the meaning of ornament is not integrated in the information media attached to clothing. Research Nisrina & Kurniawan (2024) About the creation of fashion Ready-to-wear dulexe with the application of batik motifs Bangbarong also places motifs as the main decorative element to raise local philosophy and symbolic value. However, the conveyance of meaning is more effectively represented by the visual form of the motif on the surface of the fabric, rather than through the explanatory medium that blends with the clothing. This condition shows that the identity of the fashion Ready-to-wear industry is still dominated by visual

language and has not used much information technology, so a medium is needed that can connect fashion with digital information about design concepts and philosophies more directly, one of which is through the use of two-dimensional codes, such as QR Codes, that can be embedded in clothing.

QR Code is a two-dimensional code designed to store information in the form of text, numbers, and digital links that can then be reaccessed through scanning using a device. In the development of web-based learning media, Erni et al. (2025) explained that QR Code is used as a link between print materials and more complete digital content, because they can store site addresses or additional sources of information so that users can scan the code to get a further explanation without adding many elements to the primary medium. This principle of utilization aligns with the needs of fashion Ready-to-wear, which requires a concise medium to explain the concept behind the design without interfering with the visual appearance of the fashion. An example of an application can be seen in the design of a culturally patterned outer that includes a QR Code containing information about Jambi batik motifs and regional icons, where the wearer can scan the code on the clothes to get further explanations about the meaning and visual background of the clothes (Musyafiq et al., 2024). This use shows that QR Codes have great potential to be presented as an identity medium in fashion Ready-to-wear, which stores narratives about themes, naming, and design philosophies directly connected to fashion.

The use of QR Codes in the world is evolving as the need to connect fashion with a richer layer of digital information. Research by Mariia et al. (2023) shows that QR Codes on clothing, accessories, and footwear are used as a decorative element that is clearly visible on the surface of the fashion while serving as a trigger for access to digital content, from product information, links to designer websites, social campaigns, to interactive experiences such as augmented reality. The form of application varies, ranging from bracelets with QR Codes containing important data of the wearer, gloves and cuffs that direct scanners to the designer's page, jerseys with campaign information links, to interactive dresses that change the visual perception of fashion when scanned, so that QR Codes are positioned as part of the design composition as well as a means of digital communication. These findings reinforce the idea that QR Codes can be combined with fashion aesthetic elements without compromising visual functionality, as demonstrated in the Blazer Ready-to-wear designed in this study. The use of QR Codes in the textile industry also demonstrates their ability to store and manage data in a structured manner. For example, in a pre-consumer waste sorting system in garment factories, QR Codes are used to scan the type of fiber and record waste data in digital form, allowing for easy tracing. (Islam et al., 2025). Research results by Arkhiansyah & Pratama (2022) regarding customer administration emphasize that QR Codes are effectively used to store important information in a limited visual space and allow the recall of data through quick scans using gadgets. The three findings support the selection of QR Code as an identity medium in fashion Ready-to-wear In this study, because the ability to store information and connect fashion with digital narratives can be directed not only to technical or promotional data, but to the explanation of the fashion theme, the meaning of naming, the design philosophy, and the philosophy of batik that the designer wants to convey.

The main innovation in this study lies in the use of a QR Code as a fashion identity that is directly integrated into the design of the ready-to-wear suit. QR Code is realized through embroidery techniques on the Blazer Back Body, so that it not only functions as a decorative element that blends with the design composition, but also as a medium for storing digital information regarding fashion themes, the meaning of fashion names, design philosophy, and the philosophy of batik used in the interior and details of the blazer. Study Mariia et al. (2023) explained that QR Codes on clothing can be positioned as a decorative element that is clearly visible on the surface of clothing, as well as a means of digital communication between designers and wearers, because they enable matching clothing with various additional information accessed through code scanning. The integration of embroidery techniques as textile decoration and QR Codes as information technology gives a new dimension to fashion identity, because information is not only conveyed through motifs, colors, and silhouettes, but can also be accessed narratively through gadgets. This research positions the QR Code not just as a technical label or promotional tool, but as a narrative medium that explains fashion identity more comprehensively, thereby complementing previous research on fashion, Ready-to-wear batik fabric, and the use of QR Codes in the global fashion industry.

The data collection instrument in this study uses an observation sheet designed to assess the feasibility of fashion products based on six leading indicators. Each indicator reflects a different feasibility dimension, covering visual, technical, aesthetic, functional, and value-added aspects of the design. Design is an important element that reflects the creativity and identity of fashion design. In research by Anggraini et al. (2022), design is evaluated through the elements of color, lines, shapes, silhouettes, proportions, and visual centerpieces that form a unified fashion display in a complete and aesthetically pleasing manner. Size is a technical indicator that is directly related to the comfort and proportions of the body, encompassing the accuracy of circumference and length, proportional balance, and fabric falls that align with the wearer's body shape (Mahbubah & Wening, 2022).

Fashion construction is assessed through sewing technique indicators that reflect the quality of artistry and durability of the product. Vera et al. (2021) emphasize that this aspect includes the neatness of the seams, the strength of the joints, the finish, as well as the use of decorative techniques such as sequins or applications. This evaluation aims to ensure that the fashion is not only visually beautiful, but also durable and done with high precision. Sewing technique indicators focus on the quality of technical artistry, including the process of connecting clothing components, the neatness of the results, and the durability of the sewing structure. In the context of the development of party fashion, July et al. (2023) stated that sewing techniques are assessed through the suitability of the sewing method with the characteristics of party clothing. Assessment includes seam neatness, finishing, connection strength, decorative technique, and zipper installation. Aesthetics show the extent to which harmony and visual appeal are successfully realized in the design. Putri et al. (2021) explain that aesthetic assessment encompasses design unity, visual balance, texture, and color suitability, as well as ornament composition and decorative details that contribute to the overall beauty value of fashion. The function and impression of fashion when used are reflected in the performance indicators. This assessment encompasses aspects such as shape stability, the suitability of the theme in relation to the wearer's character, ease of wear, and the elegant impression conveyed through its use (Suwendra & Additionalni, 2024). Additionally, evaluating the uniqueness of innovative and creative design is a plus. Putri et al. (2021). He said that the indicators of privilege include the creativity of ideas, exploration of materials, unusual shapes, and harmony in the exploration results, which reflect a strong design identity. This explanation demonstrates that the six fashion feasibility indicators employed in the study possess a strong theoretical foundation and are relevant to the product development goals of Ready-to-Wear based on QR Codes.

The fashion suit, a ready-to-wear garment developed in this study, consists of three main components: an inner batik, a blazer, and cargo pants. The inner is designed to be sleeveless and without a collar, featuring a round neck circumference and a length to the pelvic border. When worn, it is inserted into the pants, creating a neat silhouette while allowing for freedom of movement. Blazer using a leash collar (lapel shawl) with a length to the waist line, long sleeves that are given a horizontal cut at the elbow to insert a variation of batik fabric, as well as batik cuffs at the end of the sleeves, so that batik elements appear as accents that blend with the modern look. Cargo pants complete the suit through the details of the patch pocket on the back, the pocket Accordion On the side of the pants, which are also given a variation of batik straps, and a variation zipper on the front with the length of the pants to the ankles, to create a functional casual impression. Inner shape options, such as blazers and cargo pants, are based on stylistic trends in streetwear, which is popular among the younger generation because it conveys a relaxed yet structured impression. Fits with fashion design: Ready-to-wear women's clothing made from ikat weaving materials, which process blazers, skirts, pants, and outerwear, creating a modern look that is flexible for the wearer (Nesi & Utami, 2023). This suit embodies a visual character that combines the impressions of modern, casual, and batik identity, making it an appropriate object of study when associated with the use of QR Codes as a fashion identity medium.

This study was limited to a feasibility analysis of a set of ready-to-wear clothing, consisting of sleeveless batik inners, blazers with embroidered QR Codes on the back, and cargo pants. The analysis was conducted using six fashion feasibility indicators: design, size, aesthetics, sewing techniques, fashion performance, and specialties. Previous studies on the development of ready-to-wear fashion that emphasized the aspects of comfort, flexibility, and exploration of motifs without the integration of digital information media (Hidayatunnisa et al., 2024; Nurse & Utami, 2023; Putri et al., 2022) as well as research on the use of QR Codes in fashion and other media that are more directed at the function of product information, promotion, or connecting print materials and digital content (Mariia et al., 2023; Musyafiq et al., 2024; Erni et al., 2025; Islam et al., 2025; Arkhiansyah & Pratama, 2022) shows that there has been no development of ready-to-wear clothing that utilizes QR Code as a fashion identity that directly connects physical appearance with digital information regarding themes, naming, and design philosophy. This condition highlights the need for research that not only assesses the feasibility of QR Code-based ready-to-wear suits but also examines the functionality of embroidered QR Codes on the back of the blazer as an informative fashion identity medium for both the wearer and the observing audience.

This study aims to describe the QR Code-based ready-to-wear fashion design process, analyze the feasibility of clothing based on design indicators, size, aesthetics, sewing techniques, fashion performance, and privileges, and explain the role of QR Code embroidery on the back body of the blazer as a medium for conveying the Teknika fashion theme that combines batik technology and aesthetics. Observations of thirty stores that sell and produce ready-to-wear clothing on the Shopee marketplace show that no products have been found that utilize QR Code as a fashion identity that directly presents a brief explanation of fashion themes and visual philosophies inspired by a series of circuits and contemporary batik geometric motifs, so that this study emphasizes the novelty in efforts to integrate visual identity and fashion narrative through QR Code media.

METHOD

This study employs a quantitative descriptive approach, aiming to describe the feasibility of QR Code-based *ready-to-wear clothing* through numerical data collected from assessments by experts and trained panelists. The research subjects consisted of twenty-five respondents, divided into expert panelists and trained panelists. The expert panelists consisted of one Fashion Designer lecturer and four fashion designers who are actively designing and producing *ready-to-wear products*. The trained panelists consisted of 20 students from the Fashion Education Study Program who had completed the Tailoring Fashion Production and Adi Busana Production courses, thereby gaining experience in fashion making and analysis practices. The respondents' profiles represent a combination of the perspectives of academics, industry practitioners, and prospective fashion educators who are familiar with *ready-to-wear fashion quality standards*. The research instrument is in the form of a fashion feasibility assessment questionnaire, compiled based on six feasibility indicators: design, size, aesthetics, sewing techniques, fashion performance, and specialties. The cost aspect in this study is presented as an assumption of economic feasibility on a small production scale, allowing for the assessment of *QR Code-based ready-to-wear suits* in terms of design feasibility, construction, and added value of fashion identity, without detailed calculations of the production cost structure. Cost-effectiveness is assumed to align with the production standards of *small-to-medium-scale ready-to-wear* clothing commonly used in the context of learning and prototype development in educational environments.

The assessment instrument is proven to be valid and realistic before it is used in data collection. The validity of this assessment was established through the evaluation of seven experts, who were asked to rate the level of relevance of each statement item to the fashion feasibility indicator on a scale of 1 to 5. The results of the experts' assessment were analyzed using the Aiken index, with the formula:

$$V = \frac{\sum S}{n(C-1)}$$

Sources: Kusumastuti et al. (2020)

Description:
V = Aiken Validity Index
s = r-lo
the = lowest validity rating number
C = highest validity rating
n = number of raters
r = the number given by the assessor

The calculation is performed by converting the score given by each expert into a value **S** for each item. Then, the values S are added up and divided by the result of multiplying the number of assessors by the difference between the highest and lowest scores on the assessment scale. The results of validating the content show that the fashion feasibility instrument has an Aiken index value in the range of 0.75 to 0.93, with an average value of approximately 0.82. The interpretation criteria used in this study stipulate that a value of the Aiken index ≥ 0.75 is considered valid in terms of content, indicating that items with a value above or equal to 0.75 are deemed worthy of retention (Prasetyaningtyas et al., 2024). The lowest values remain above the commonly used minimum allowability limit, while some items reach values above 0.90, indicating a very high level of expert agreement. The range of values places Most items in the category of medium to very high validity, indicating that the instrument for assessing the feasibility of fashion *Ready-to-wear* based on QR codes is declared valid in terms of content and suitable for use in research.

The estimated reliability of the instrument was analyzed using the Interclass Correlation Coefficient (ICC) with the statistical program R. The ICC score is calculated based on the consistency of the scores given by seven assessors to the overall item of the instrument. The results of the reliability estimation test are presented in **TABLE 1**.

TABLE 1. Test calculation results estimation of reliability using the Interclass Correlation Coefficient (ICC).

	Intraclass	95% Confidence Interval		F Test with True Value 0			
	Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.926a	.835	.948	45.365	29	174	.000
Average Measures	.978c	.956	.972	45.365	29	174	.000

Two-way mixed effects model where people's effects are random, and measures' effects are fixed.
a. The estimator is the same, whether the interaction effect is present or not.

b. Type C intraclass correlation coefficients using a consistency definition. The between-measure variance is excluded from the denominator variance.
c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

The estimated coefficient of reliability for the fashion feasibility instrument is calculated using the Interclass Correlation Coefficient (ICC), and the results of the analysis are presented in Table 2. The ICC value, on Average, measures 0.978 with a significance of 0.000, indicating that the category of estimation for the estimated reliability estimate is very high. This value indicates that the researchers' assessment of the suitability of the fashion has strong internal consistency, meaning the instrument produces a stable score when used by different assessors on the same object. This interpretation aligns with S&P (2022), which states that an ICC score in the range of 0.75 to 1.00 reflects an excellent estimated reliability estimate. The ICC value on single measures is 0.926, indicating that the individual assessment of the panelists is still in the reliable category, so that the overall instrument can be trusted to measure the feasibility of fashion Ready-to-wear based on QR Codes.

Data collection was conducted by distributing assessment questionnaires to expert panelists and trained panelists. Each panelist was asked to directly observe the QR Code-based ready-to-wear clothing suit that was the subject of the research and then provide an assessment for each feasibility indicator according to the available assessment scale. The assessment procedure is carried out in a structured manner, ensuring that all panelists follow the object under the same conditions. This approach allows the data obtained to represent the perception of fashion feasibility from the perspective of practitioners with a background in fashion design.

Data analysis was conducted using descriptive statistics, which involved calculating the average score and percentage of the eligibility level for each aspect of the assessment. Sofwatillah et al. (2024) state that descriptive analysis aims to describe, show, or constructively summarize data without intending to generalize. The maximum score was obtained by multiplying the number of statement items, the highest score on the assessment scale, and the number of assessors in each group of panelists. The resulting eligibility percentage is then interpreted into assessment categories using the following proportion formula:

$$\boldsymbol{P = \frac{Np}{N}}$$

Sources: Stuart (2021)
Description:
P = proportion or percentage of eligibility
Np = total score obtained
N = maximum score amount

The proportion is converted into a percentage and grouped into five eligibility categories, namely Very Feasible, Feasible, Quite Feasible, Less Feasible, and Very Unfeasible. The percentage limit for each category is compiled based on the value range of 20% - 100% which is divided proportionally into five parts, then set out in **TABLE 2** as a reference for the interpretation of the results.

TABLE 2. QR code-based ready-to-wear fashion eligibility category classification.

No	Percentage	Categories
1.	20% - 36%	Very Unworthy
2.	37% - 52%	Less Worthy
3.	53% - 68%	Quite Decent
4.	69% - 84%	Worthy
5.	85% - 100%	Highly Worth It

The results of the descriptive analysis of the percentages are then presented in a table to illustrate the fashion feasibility profile *of ready-to-wear* based on QR codes for each indicator. Similar methods are employed by Gani et al. (2024), who apply percentage descriptive analysis to the data from graduate user satisfaction questionnaires and present the results in the form of tables, graphs, and average calculations, thereby demonstrating the effectiveness of assessing feasibility based on predetermined indicators.

RESULTS AND DISCUSSION

QR Code-Based Ready-to-Wear Fashion Making Process

The manufacture of QR Code-based ready-to-wear clothing is streamlined through three main stages, namely planning, production, and evaluation. The planning stage involves formulating concepts, determining themes, selecting fashion styles, and selecting materials and design elements. The production stage integrates concept decisions into the technical process of pattern making, cutting, sewing, and QR Code embroidery application. The evaluation stage is designed to reassess the suitability of the fashion design and its function in relation to the design objectives.

First Stage (Planning)

The planning stage begins with determining the theme of *Teknika* as the basis for developing fashion concepts. This theme combines technological and aesthetic ideas through the visualization of digital elements, such as circuits, cables, and QR Codes, which are met with the beauty of batik motifs. *Teknika* is interpreted as an effort to present clothing that represents the shift in people's lifestyles, who are increasingly familiar with technology, without relinquishing their interest in local culture, as seen in the form of batik. The theme is then manifested in the form of a mood board that contains visual references, color palettes, examples of fashion silhouettes, and illustrations of digital elements that will be incorporated into the villages.

FIGURE 1. Moodboard technical theme: technology and aesthetics.

The source of the theme idea stems from the phenomenon of increasing digital technology use in daily life, particularly the use of gadgets and code scanning systems as a means of accessing information. The visual of cables and electronic circuits is understood as a metaphor for a network that connects various components within a system, similar to the relationship between culture, in the form of batik, and innovation in fashion. The idea was then connected to the concept of a QR Code, which can store information in a two-dimensional code and be accessed through scanning. The integration of visuals, circuits, QR Codes, and batik is expected to result in a fashion identity that reflects the convergence of the physical and digital worlds.

Streetwear style was chosen as the main style because it is considered the most fitting for the character of the target user, namely the young generation who have a dynamic lifestyle and are close to technology. Character streetwear, which tends to be casual, comfortable, and has a lot of functional details according to fashion needs that are not only aesthetic, but also practical for daily activities. Streetwear style is considered to be able to combine traditional wastra with the tastes of the younger generation through a more modern look, relevant to today's lifestyle, so that it is not only visually attractive but also has the potential to foster a love for Indonesian batik (Aryani & Aiman, 2021).

FIGURE 2. Batik with a technical theme: technology and aesthetics.

The selection of batik was made to affirm the identity of Indonesian culture in the *Teknika*: Technology and Aesthetics collection. The batik fabric used features geometric motifs with an orderly pattern arrangement, characterized by repetitive lines that resemble electronic circuit components. The color of batik is dominated by navy, which is combined with white, producing a modern and assertive impression. The batik philosophy that was raised interpreted geometric motifs as symbols of order, precision, and commentary, while navy colors were interpreted as symbols of peace of thought and stability. The use of batik in specific details is expected to present cultural nuances that remain in harmony with Teknika's futuristic image.

(a) (b)

FIGURE 3a. QR Code-based *ready-to-wear* fashion design – front view.

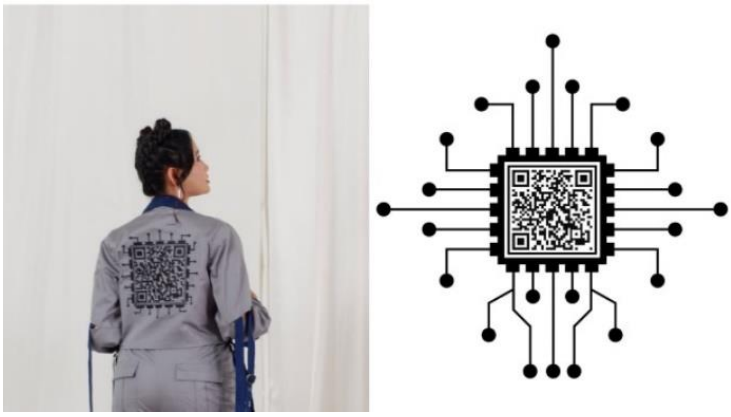
FIGURE 3b. QR Code-based *ready-to-wear* fashion design – back view.

QR Code-based ready-to-wear fashion design consists of three main parts, namely batik inners, blazers, and cargo pants. Batik inners are designed to be sleeveless, featuring a rounded neckline and a length that falls to the pelvic border. These proportions give the wearer the flexibility to insert the inner into the pants, ensuring a neat waistline and supporting a sleek streetwear silhouette. Inner uses batik fabric as the primary material, making this part a starting point that affirms the identity of batik in the overall appearance of the clothing.

The blazer is designed as the most visually dominant main layer and is the medium for placing QR Code embroidery. The length of the blazer is tailored to the waist to maintain body proportions and provide sufficient space for cargo pants to be displayed at the bottom. The shawl collar was chosen to give a modern and sleek impression to the neck area. The sleeves of the blazer are made long with a horizontal cut at the elbow, inserted with a variation of batik fabric straps, while the sleeve ends are equipped with batik cuffs. These details present the repetitive visual

accents of batik fabric, while implying the inspiration of circuit and cable shapes through the arrangement of vertical and horizontal lines on the sleeves.

Cargo pants complement the look of the bottom of the fashion with a strong functional character. The cargo model was chosen because it features several pockets and construction details that are similar to those found in streetwear style. The pants are designed with a patch pocket on the back and accordion pockets on the right and left sides, allowing the wearer to store various small items. A variety of straps from batik fabric are placed on several parts of the accordion pocket lid to maintain visual continuity with the inner and blazer. The length of the pants is designed to the ankles, while the front is equipped with a variety of zippers that can be opened and closed for added display flexibility.



(a) (b)

FIGURE 4a. QR Code embroidery details on the back of the blazer.

FIGURE 4b. QR Code design.

The QR Code implementation plan is prepared from the design planning stage to achieve both aesthetic and informative functions simultaneously. The position of the QR Code is set on the back of the blazer because the plane has a relatively flat surface and there are not many pattern cuts, making the embroidery process easier and improving the readability of the code when scanned. The information content in the QR Code is arranged in a layered structure that begins with an explanation of the fashion theme, followed by a brief explanation of the batik philosophy, then the delivery of the meaning of the design name, and concludes with a description of the design philosophy. This sequence provides a flowing reading, enabling QR Code scanners to gain a comprehensive understanding of the concepts, identities, and philosophical values that underlie the design of this QR Code-based ready-to-wear fashion.

Second Stage (Production)

The production stage is the process of transforming a fashion design, which is still a concept, into a wearable garment. The activities carried out include pattern preparation, material cutting, sewing, and the application of QR Code embroidery on the back body of the blazer as a marker of fashion identity. Each step is taken into consideration to ensure that QR Code-based ready-to-wear clothing feels comfortable when worn and can carry out informative functions through the scanned QR Code.

FIGURE 5. Batik inner pattern, blazer, and cargo pants.

Fashion patterns are arranged based on the design that has been determined at the planning stage. The batik inner pattern is created from a sleeveless basic pattern with a round neckline and a long, flowing design that extends to the pelvic border. The shape of the pattern is adjusted so that the inner can follow the contours of the body proportionally, allowing the bottom of the inner to be inserted into the pants without causing excessive thickening of the waist area. The blazer pattern was developed from the basic upper body pattern, which was cut at the waistline to achieve the desired blazer length. The back body plane of the blazer is prepared in the form of a relatively flat pattern with no additional cuts, providing sufficient space for the QR Code embroidery application. The shawl collar pattern is designed to match the shape of the blazer neckline, resulting in a neat collar drop.

The blazer sleeve pattern is made from a long-sleeved pattern with a horizontal cut line on the elbow area. The cut line is planned as a place to insert a variation of batik fabric, allowing the sleeve pattern to consist of several parts that will be reconnected during the sewing process. The sleeve cuff pattern is prepared separately with a width of approximately 3cm to display the batik motif clearly. The cargo pants pattern refers to the basic pattern of trousers, which is modified with the addition of patch pockets on the back and accordion pockets on the right and left sides. The space for the variation of the zipper on the front is determined from the stage of pattern formation until the position and length of the zipper can be well measured. The pattern for the inner, blazer, and pants is adjusted to match the outer pattern, and some adjustments to the *seams allow* the construction of the inside of the outfit to remain neat and avoid excessive volume.

FIGURE 6. QR Code-based ready-to-wear fashion sewing process.

The sewing process begins with creating an embroidery QR code on the back of the blazer's fabric. The pre-designed digital code is printed first in the form of a QR Code pattern, with a size adjusted to fit the width of the back. The pattern is transferred to the surface of the fabric using a sewing pencil or fabric marker, ensuring the code modules are clearly legible as a puncture reference. The piece of fabric on the back of the blazer's body is given a stabilizing layer on the inside to maintain the fabric's stability during the embroidery process. The embroidery process is performed manually using a specialized embroidery sewing machine with a customized stitch type, ensuring that the lines and planes on the QR Code appear crisp and firm. The final stage involves cleaning the remaining markers and stabilizers. The QR Code shape is then tested by scanning it using a gadget to ensure that the information in the code can be read correctly before the back body piece is sewn together with the rest of the blazer.

The process of sewing the batik inner with lining begins by connecting the shoulders and sides of the body to the primary material, followed by sewing the Japanese zipper onto the batik material. The seam allowance is sewn with a uniform width and then ironed so that the fabric falls smoothly. The pieces of the inner lining are connected in the same way so that an inner body is formed that follows the outer body. The neckline, middle of the back, and the hollow of the sleeves are united by placing the outer and inner sides of the lining facing each other, then sewn according to the shape of the neck circumference, the middle of the back, and the hollow of the sleeves. The inner is turned over so that the lining is on the inside, while the seam allowens is neatly closed between the two layers. The bottom of the inner is hemmed with enough seam to maintain neatness and seam strength. The final result is a sleeveless batik inner with a lining inner layer, making it feel more comfortable against the skin.

The process of sewing a sleeved blazer with lining is carried out after the embroidered piece of the back body is ready to be sewn. The splicing process begins by sewing the shoulders together between the front and back of the blazer using the primary material. The shoulder pads are ironed with open pads to prevent thickening of the shoulder line. The stitching of the body side is done by joining the right and left sides together to the lower limit of the blazer. The shawl is composed of two layers of fabric: the main fabric and the lining fabric. These layers are sewn according to the pattern's shape and then turned and ironed to form a firm collar line. The collar is attached to the neckline of the blazer, paying attention to the midpoint of the back and the connection point at the shoulder line, so that the fall of the collar appears balanced.

The sleeves of the blazer are assembled by connecting the top and bottom of the sleeves along the elbow cut line. Then, a variation strap of batik fabric is inserted between the joints. The batik cuff is sewn onto the end of the arm after the arm's sides are joined together. The finished sleeves are attached to the hollow holes of the blazer sleeves using the set-in sleeve installation technique, ensuring a neat shape of the shoulders without excessive wrinkles. The lining blazer is arranged separately in a similar joining sequence, then attached to the inside of the blazer by joining the bottom seam line, front line, and sleeve seam. Several small gaps are left open for the reversal process, which is then closed again after the blazer is turned over, with the outside facing outward and the lining facing inward. The finish is in the form of a sleeved blazer with the inside covered with lining, while the embroidered QR Code on the back remains clearly visible from the outside.

The process of sewing cargo pants on the primary material follows a systematic construction work sequence. The stages begin with the manufacture of pocket components, namely outboard pocket caps, accordion pocket caps, and variations of batik fabric straps. The pocket lid is given a hard cloth, then positioned so that the good part of the fabric faces the good part of the fabric. It is then sewn according to the shape and turned over and pressed to make it look neat. The back patch pocket is attached to the back of the pants according to the markings on the pattern, with seams around the sides of the pocket to ensure it adheres firmly to the base fabric. The sulbi, or zipper housing, on the front of the pants is completed after the front of the pants is prepared. The zipper is installed between the layers of the sulbi, so that it is neatly closed from the outside and remains strong, supporting the pants instead of being a weak point. The back peg is sewn by uniting the right and left parts of the stool at the midline of the back to the peg point, forming the curve of the pants according to the body's anatomy.

A variation zipper at the bottom of the pants is applied to the bottom edge of each leg, allowing for a broader or narrower view when the zipper is opened or closed. The outer side of the pants is joined together by sewing the outer sides of the right and left legs, following a pattern line so that the silhouette shape begins to appear. The accordion pocket is then assembled and placed on the right and left sides of the pants, accompanied by the installation of a variety of straps from batik fabric in the planned position, so that the cargo character and batik accents stand out even more. The inside of the pants is sewn last by uniting the inside of both legs, forming the pants as a whole and preparing them for combination with the lining at the next stage.

The lining of pants is arranged by uniting the front and back pieces, just as the primary material of the pants is, and then combined at the waist and bottom seams according to design needs. The waistband is installed by clamping the top of the primary material and lining so that the seams are covered with a frown on the inside. The bottom of the pants ends with seams that are adjusted to the length of the ankles. This series of processes results in cargo pants that feature several functional pockets, as well as a more comfortable interior due to the presence of a lining.

Third Stage (Finalization)

(a) (b)

FIGURE 7a. QR Code-based ready-to-wear fashion display when wearing the front view.

FIGURE 7b. QR Code-based ready-to-wear fashion display when worn back view.

The finished product stage is carried out to review the suitability of the QR Code-based ready-to-wear fashion production in relation to the design prepared at the planning stage. This activity ensures that each piece of clothing has been realized according to the design, is comfortable to wear, and can fulfill both aesthetic and functional purposes as planned. Checks are carried out on the details of the seams, the neatness of the joints, and the proportions of the length of each component. The model wears underwear, blazers, and cargo pants, which are then observed as they fall when the model stands, sits, and walks. The room for movement in the shoulder, elbow, waist, and knee areas is ensured to be sufficient to support streetwear characters that demand flexibility. Outboard pockets and accordion pockets are filled with small to medium-sized objects to test the capacity and strength of the seams. The results of observations showed that the suit followed the movements without causing discomfort.

FIGURE 9. QR Code scanning process on the back of the blazer.

The QR Code scanning test was conducted at various distances and viewing angles, both when the blazer was hung and when worn by the model. The results of the scan always lead to a digital page containing real explanations and technical concepts, ensuring that the QR Code functions correctly as an information medium. The calculation of the planning, production, and finished results stages shows that QR Code-based ready-to-wear clothing is ready to be systematically assessed for feasibility.

QR Code-Based Ready-to-Wear Fashion Feasibility Analysis

TABLE 3. Results of the ready-to-wear fashion feasibility test based on QR Code.

No	Indicator	Panelists		Average (%)
		Expert Panelists (%)	Trained Panelists (%)	
1	Design	15.33	15.27	15.30
2	Size	14.93	15.50	15.22
3	Aesthetics	15.73	15.20	15.47
4	Sewing Techniques	15.20	15.77	15.48
5	Fashion Performance	16.00	15.97	15.98
6	Privileges	15.33	15.93	15.63
Total		92.53	93.63	93.08

Overall Eligibility Recapitulation

The feasibility instrument consists of six indicators, namely design, size, aesthetics, sewing techniques, fashion performance, and specialties. The assessment was conducted by a five-member expert panel and twenty trained panelists. The recapitulation indicates that the expert panelists assigned a total eligibility percentage of 92.53% to the very feasible category. Trained panelists gave a total of 93.63% in the very feasible category. The combined Average of the two groups of panelists reached 93.08% and remained in the very feasible category.

The slight difference between the total expert panelists and trained panelists reflects the variation in viewpoints on assessing the feasibility of fashion. Expert panelists have scientific backgrounds and professional experience, which enables them to be more sensitive to technical details, consistency in the application of design principles, and fashion feasibility standards. Trained panelists assess based on their academic understanding of product feasibility, even though their practical experience may not be as extensive as that of expert panelists. Product feasibility assessment is closely related to understanding the characteristics of fashion and the quality indicators associated with fashion products. Therefore, respondents with knowledge in these fields are considered relevant for involvement in feasibility testing (Mahbubah & Wening, 2022). The combination of these two assessment groups resulted in a more comprehensive picture of feasibility, as it combined the professional perspective and the perspective of prospective fashion education practitioners, both of whom agreed that placing the fashion Ready-to-wear based QR Code in the category is very feasible.

1) Eligibility per Indicator
   a. Design

      The design indicator obtained a percentage of 15.33% from expert panelists and 15.27% from trained panelists, with an average of 15.30% belonging to the very viable category. The assessment of this indicator includes the suitability of design lines, silhouettes, and the balance of proportions between fashion sections, as well as the placement of the center of attention on QR Code-based ready-to-wear fashion products, ensuring the fashion display is considered intact and easily recognized as a *Teknika*-themed streetwear collection. The instruments in the design indicator include five assessment points, namely the harmony of the color of the fashion with the theme and character of the wearer, the design line that strengthens the shape of the body and directs attention to the fashion, the shape or silhouette that suits the character and concept, the proportions between the parts that seem balanced and harmonious, and the center of attention that is clear and attractive without disturbing

the overall design. These results show that both expert panelists and trained panelists consistently assess fashion design as very worthy of review, given the unity of visual elements and clarity of design identity.

Character streetwear is characterized by a combination of loose shapes, functional details, and batik accents placed on the inner, sleeve cuffs, collars, and straps of various designs. This trend aligns with research by Aryani & Aiman (2021), which explains that the development of fashion streetwear, with the combination of batik, necessitates the integration of traditional motifs with modern silhouettes to appeal to the younger generation. The application of QR Codes as embroidery on a blazer's back presents a key point of attention that blends with the lines and fields of fashion, in line with the study by Lunardi & Aryani (2024), which places embroidery as a visual accent as well as an identity marker in ready-to-wear clothing. The upbeat assessment from the panelists also had to do with the consistency of applying design principles that govern the relationship between lines, colors, and shapes. Anggraini et al. (2022) emphasize that the success of fashion design is greatly influenced by the harmony of elements of lines, shapes, and decorative accents, which builds unity of appearance when the clothes are worn. The suitability of the assessment between expert panelists and trained panelists demonstrates that the fashion design in this study is strongly perceived both aesthetically and functionally, such that the application of QR Codes, batik elements, and streetwear design is considered to support each other as the visual identity of the Tenika collection.

b. Size

The size indicator obtained a percentage of 14.93% from expert panelists and 15.50% from trained panelists, with an average of 15.22% in the very feasible category. The size assessment in this study included the suitability of the suitability of body circumference, waist circumference, and pelvic circumference with the model's body shape, suitability of the length of the clothing with the design and proportions of body height, the balance of right and left clothes that looked precise without an oblique, the accuracy of the pattern pieces that followed the shape of the body without wrinkles or excessive pull, and the neatness of the fall of the bottom of the clothing that formed the silhouette according to the design. The results of this percentage indicate that QR Code-based ready-to-wear clothing has met the required size standards, ensuring the clothes appear proportional when worn.

A measure feasibility assessment showed that the results in the category were very feasible in line with the view of Mahbubah & Wening (2022), which confirms size as one of the leading indicators of the feasibility of fashion products, Ready-to-wear, because it is directly related to comfort, body image, and consumer decision to accept a product as suitable for use. The accuracy of the measurements in this fashion is obtained through a systematic measurement process, which is in line with the Damayanti (2024) which explains that the series of making decent clothes always begins with the correct body measurements, followed by the preparation of basic patterns and pattern development before cutting and sewing so that the final result is in accordance with the shape of the wearer's body. Expert panelists and trained panelists assessed the suitability of size based on the application of construction standards and consistent body proportions in clothing, ensuring that the freedom of movement, waistline position, and balance of length in the blazer, inner, and pants look support the design character of streetwear. The alignment between proper measurement taking and the consistent application of measurement standards explains why size indicators have gained such a worthy category in fashion, Ready-to-wear, as indicated by this QR Code.

c. Aesthetics

The aesthetic indicator obtained a percentage of 15.73% from expert panelists and 15.20% from trained panelists, with an average of 15.47% in the very feasible category. Aesthetic assessment includes the unity of design elements in the form of a combination of colors, shapes, and textures, visual balance between the right and left sides of the clothing, the compatibility of the texture of the material with the design character, and the composition of decorative details that add beauty value without giving an excessive impression. The clothes that were assessed demonstrated unity of design elements through the combination of navy and white colors on batik with light gray colors on plain materials, presenting a modern and assertive impression that aligned with the theme of technology. The repetition of batik motifs on the inner, collar, cuffs, and straps of the variations reinforces the visual identity. At the same time, the plain field on the blazer and pants maintains a non-excessive look, allowing the QR Code on the back to serve as the main accent that attracts attention.

Yuliani & Prasetyaningtyas (2023) explain that fashion aesthetics are directly related to the feasibility of the product, as the unity of design determines them, the balance of composition, and the suitability of colors and textures that form an overall harmonious look. Vera et al. (2021) affirm that the proper selection of materials, colors, silhouettes, and decorations will result in clothes that are not only visually appealing but also look neat and proportionate when worn. The achievement of this category is very feasible in terms of aesthetic indicators,

as fashion Ready-to-wear based on QR Code has followed this principle through a combination of colors, a blend of batik with matching plain materials, and the placement of QR Codes that serve as a fashion identity. The alignment of the views of expert panelists and trained panelists reinforces the conclusion that this fashion has high aesthetic feasibility as a fashion-ready-to-wear product based on QR Codes.

d. Sewing Techniques

The sewing technique indicator obtained a percentage of 15.20% from expert panelists and 15.77% from trained panelists, with an average of 15.48% in the very feasible category. The assessment of sewing techniques in QR Code-based ready-to-wear clothing includes the neatness and flatness of the main seams on the shoulders, sides, sleeve hollows, and sides of the pants, the strength of the joints that appear consistent on the inner, blazer, and cargo pants, and the accuracy of the uniform width of the collar. The edges of the fabric and the inside of the clothes are considered finished, depending on the type of material, ensuring that no thread remains. The connection on the darts, the horizontal cut line of the sleeves, the meeting of batik pieces with plain materials, as well as the installation of outboard pockets, accordion pockets, batik cuffs, and zippers of various lengths, seem to be in the correct position and do not interfere with the comfort of the wearer. These results demonstrate that the feasibility of seam construction has contributed to the overall functionality and aesthetic appeal of QR Code-based ready-to-wear clothing.

The sewing technique that obtained the category is very worthy in line with the view of Purnami et al. (2023) Which explains that the neatness of the stitches determines the feasibility of sewing techniques in clothing, the accuracy of the selection of the shoe, and the quality of the interior finish which affects the durability of the clothing and the professional image of the product. A fashion character that blends a blazer, batik inners, and cargo pants with functional pocket details and QR Code embroidery demands high precision in the sewing process so that every connection, seam, and finish of the fabric edge must be done with precision. Putri et al. (2023) emphasize that ready-to-wear clothing, considered feasible, needs to demonstrate construction consistency in all details, from the joints of the pieces to the finishing, to be both comfortable to wear and visually appealing. Expert panelists, as practitioners and fashion experts, as well as trained panelists, assessed sewing techniques by referring to industry standards and engineering procedures they had learned, including village finishing, pocket fitting, lining material management, and zipper installation. The alignment of the assessments of the two groups of panelists strengthens the conclusion that sewing techniques for this clothing are very feasible for developing as a ready-to-wear product.

e. Fashion Performance

The fashion performance indicator obtained a percentage of 16.00% from expert panelists and 15.97% from trained panelists, with an average of 15.98% in the very feasible category. Performance assessment includes the suitability of the proportions of the fashion silhouette in relation to the model's body shape, the stability of the shape when worn, the ease of the wearing and taking off process, and the impression produced when the clothes are used in various activities. Batik underwear, crop blazers, and cargo pants are designed to follow the body's movements when standing, sitting, and walking, without causing a sense of attraction or being held at a certain point, so that the shoulder line, arm drops, and the shape of the pants' bottom remain stable.

The performance of fashion in this category is very decent, in line with Amanda et al. (2025), which explains that the suitability of the theme determines the feasibility of the design, the feasibility of construction, and the appearance of the fashion when worn on a model in real-life situations. A Technique Setting that blends Crop Blazers, batik inners, and cargo pants is designed with controlled loose volume, ensuring sufficient freedom of movement without altering the silhouette when the model stands, sits, or walks. The cargo details on the pants, the length of the blazer that does not cover the pelvis too much, and the use of functional zippers are designed to make the process of putting on and taking off clothes easier. Expert panelists and trained panelists evaluate performance in reference to shape stability, relaxation of motion, response of materials to folds and pulls, and comfort of use, based on the professional and academic criteria they employ. Supraeni & Suwendra (2024) confirm that the feasibility of the product fashion is reflected in the comfort and ease of use, that makes the wearer feel confident, so that the suitability of the assessment of the two groups of panelists supports the conclusion that the performance of this fashion is very worthy of being developed as a product Ready-to-wear.

f. Privileges

The privilege indicator obtained a percentage of 15.33% from expert panelists and 15.93% from trained panelists, with an average of 15.63% in the very feasible category. The assessment of the specialties in this fashion includes the extent to which the design shows new ideas through the use of QR Codes as a fashion identity, the existence of shape and detail innovations in the combination of batik inners, crop blazers, and cargo pants, and

the exploration of materials that combine batik textures with plain materials. The combination of navy, white, and light grey colors is judged to create a unique yet harmonious impression. At the same time, the placement of the QR Code embroidery on the back of the blazer is seen as a strong and easily recognizable characteristic of the collection's identity. These results demonstrate that this QR Code-based ready-to-wear fashion is not only distinct from similar products on the market but also capable of displaying design characteristics consistent with the *Teknika* theme.

Fashion specialties, Such as Ready-to-Wear QR Code-based products, are considered very feasible, in line with the view of Putri et al. (2021), which explains that fashion products are said to have competitiveness when they present creative ideas, explore form, and combine materials and colors to produce a strong and memorable design identity. The *Teknika* theme meets these criteria through the incorporation of silhouettes and streetwear with batik inner details and QR Code embroidery, so that the clothes not only function as a body covering but also as a medium to convey a narrative about the wearer's digital identity. Novitasari & Nurmasitah (2025) emphasize that the integration of technologies, such as QR Codes, in fashion-ready-to-wear can enhance innovative value and the perception of exclusivity, as it provides an interactive experience relevant to modern lifestyles. Expert panelists and trained panelists interpret the specialties by referring to the novelty of ideas, the consistency of technology application and aesthetic themes, the potential for collection development in the industrial realm, and the relationship between design and various examples of ready-to-wear collections that they recognize through design references and trend observations. The alignment of the assessments of the two groups of panelists strengthens the conclusion that this fashion specialty is highly worthy as a collection identity for Ready-to-wear, based on R Code.

Based on the results of the assessment by expert panelists and trained panelists, the fashion Ready-to-wear based on QR Code is in the very feasible category, indicating that this fashion has met the criteria as a product Ready-to-wear that deserves further development. The assessments provided by expert panelists and trained panelists revealed some differences in specific indicators or in the overall assessment results between the two groups. This difference in assessment is because expert panelists, as individuals with professional experience and competence in the field of fashion, tend to give higher assessments of fashion design, aesthetics, and performance indicators, as they are oriented towards the strength of ideas, consistency of concepts, and visual feasibility in design works. Hence, their assessments are not always in line with practical technical considerations or user tastes (Gadi et al., 2022). Trained panelists who are fashion students tend to give higher assessments on indicators of size, sewing techniques, and specialties because their involvement in practical learning makes aspects of size accuracy, seam neatness, and detail finishing the primary focus in assessing the feasibility of finished fashion products (Hamid et al., 2021). The emphasis on the technical aspect aligns with the view that the construction process and decorative techniques require precision and consistency, as disagreements at this stage can impact the final shape and impression of the garment when worn (Rismayanti et al., 2021). These findings further strengthen the evidence that fashion-ready-to-wear QR code-based systems are very feasible.

The Role of QR Code as a Fashion Identity

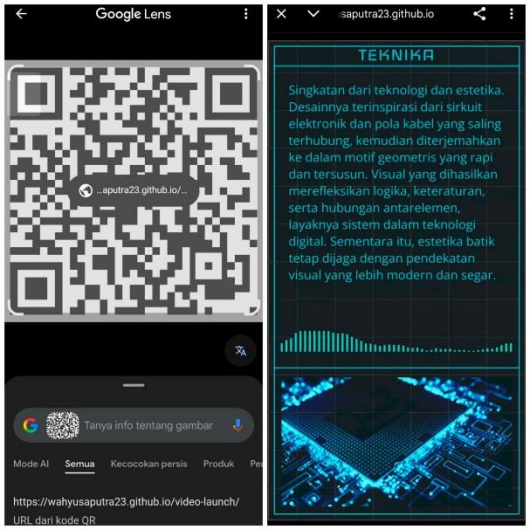


FIGURE 10. Display of QR Code scan results on the device screen.

The embroidery QR Code on the back of the blazer is designed as an identity element that connects the fashion with digital information about the work. Scanning the code using the device redirects the user to a page that displays the title 'Teknika' and a description explaining what Teknika stands for: technology and aesthetics. The description explains that the design is inspired by a series of electronic circuits and interconnected wiring patterns that translate into neat and composed geometric motifs. The visual is represented as logic, order, and relationships between elements like a system in digital technology, while the traditional value of batik is maintained through a modern visual approach. The content of the QR Code presents a narrative of the theme and visual concept without adding text on the surface of the clothing.

The information content displayed after the scan is organized in layers to create a seamless reading experience. The front page features the title "Teknika," along with an explanation that Teknika stands for a combination of technology and aesthetics. The following description explains that the design was inspired by a series of electronic circuits and interconnected wiring patterns that translated into neat and composed geometric motifs. The visual is interpreted as a representation of logic, order, and relationships between elements, like a system in digital technology. At the same time, traditional batik values are maintained through a modern visual approach. This structure enables QR Code to serve as a narrative medium that presents themes, visual concepts, and philosophical foundations of fashion without requiring text to be added to the surface of the fabric.

The results of observations show that the existence of QR Codes triggers the curiosity of visitors. Several fellow students, lecturers, and guests actively tried to scan the code with their gadgets, then read the explanation of the theme of Teknik and the philosophy of batik that appeared on the screen. The response indicates that the QR Code not only serves as decoration, but also as an interaction trigger that encourages the observer to engage further with the work and understand the value that the designer wants to convey through the digital narrative accompanying the clothing.

The role of QR codes as a fashion identity aligns with the view that matrix codes on clothes can combine decorative and communicative functions simultaneously, as the information stored in them influences how the wearer perceives fashion models (Mariia et al., 2023). Embroidering a QR Code on the back of the blazer becomes part of the design composition, not just a separate label, so that the visual accents that appear work as a point of attention that simultaneously directs the user to access the digital narrative of the theme of Teknika, the meaning of naming, and the philosophy of batik. The structure of information connected through QR Code also shows the function of the code as a digital label that is richer than conventional labels, because the presentation of the theme, the meaning of the design name, the design philosophy, and the philosophy of batik in one series of texts makes the code play a role like a labeling system that stores important data about products, in line with the use of QR Code in an administrative system designed to facilitate identification and access to information quickly and accurate through device scanning

(Arkhiansyah & Pratama, 2022). This character is consistent with the application of QR Codes in the garment industry, which is used for structured data management and tracing in an effort to create a more sustainable system and is integrated with digital databases (Islam et al., 2025). Fashion identity is thus not only present in the brand name or hangtag, but also digitally recorded on a page that can be reaccessed at any time by users and observers, in accordance with the tendency to use QR Codes as a bridge between physical objects and digital information in modern fashion products (Mariia et al., 2023).

CONCLUSION

QR Code-based ready-to-wear suits were successfully realized, considered very feasible by both panelists, and QR Codes proved to function as an informative digital identity. The research conclusions are as follows.

1) The process of making QR Code-based ready-to-wear clothing is carried out through three main stages that are mutually sustainable, namely planning, production, and finished products. The planning stage involves determining the theme of Teknika, compiling a mood board, selecting streetwear styles, choosing geometric patterned batik, and designing the information structure that will be contained within the QR Code. The production stage brings the concept to life through pattern preparation activities, cutting materials, sewing batik inners, blazers, and cargo pants, as well as the application of QR Code embroidery on the back of the blazer, considering both the construction and readability aspects of the code. The finished product stage focuses on checking the neatness of the seams, size suitability, movement comfort, the appearance of the clothes when worn, as well as conducting a QR Code scanning test, so that a ready-to-wear suit is obtained that is ready to be assessed for feasibility.
2) The feasibility of QR Code-based ready-to-wear clothing, evaluated based on six indicators, yields very high results. The assessment by the expert panelists reached 92.53% in the "very feasible" category. In contrast, the trained panelists, who were students of Fashion Education, reached 93.63% and also fell into the very feasible category. The overall Average of 93.08% confirmed that the fashion met the feasibility standards in terms of design, size, aesthetics, sewing techniques, wearing performance, and the specificity of the idea.
3) The role of the QR Code as a fashion identity is fulfilled through the application of embroidery on the back of the blazer, which functions as a visual accent as well as a link to digital information. The scan test showed that the QR Code consistently directed users to a page containing the theme of Teknika, the meaning of the design name, the design philosophy, and the philosophy of batik, so that the identity of fashion is understood not only from visual elements, but also through a structured narrative. These findings confirm that QR codes are effective in strengthening fashion as an innovative, ready-to-wear product that is relevant to the development of fashion technology.

The practical implications of this study demonstrate that QR Code-based ready-to-wear suits have the potential to serve as a prototype for educational fashion products that facilitate wearers' and the public's understanding of the theme, naming, and philosophy of batik through access to digital information integrated with clothing. Its theoretical implications lie in the reinforcement of the concept of fashion identity that is not only built through motifs, colors, and silhouettes, but also through layers of narrative information accessed through scanning technology. The limitations of the study lie in the relatively small number of respondents, the context of the assessment focusing on panelists with backgrounds in education and fashion practice, and the absence of a detailed analysis of the feasibility of production costs on a broader industrial scale. Another limitation arises from the scope of testing, which still focuses on one suit design and one type of QR Code placement, so that the variations in fashion shapes, application techniques, and usage scenarios have not been fully explored. The following study is suggested to involve respondents with a background of general consumers from various age groups and lifestyles, examine long-term wearing experiences, and compare the perception of fashion identity between ready-to-wear products with and without QR Codes. Further development can also examine the feasibility of production costs, explore other QR Code application techniques such as screen printing, patching, or weaving, as well as integration with digital interactive features, so that the use of QR Code as a fashion identity is increasingly relevant to the dynamics of the fashion industry.

REFERENCES

Amanda, H., Astuti, & Sakti, A. W. (2025). Penciptaan Busana Evening Gala dengan Kain Tenun Baron Sulam Bulu. *JADECS*, *10*(02), 208–224.

Andriyanti, S., Sinaga, R., & Lubis, R. (2022). Aplikasi Ornamen Sumatera Utara Kreasi kekinian Pada Desain Busana Ready-To-Wear Dengan Teknik Sablon Printing. *GORGA : Jurnal Seni Rupa*, *11*(1), 25–35. https://jurnal.unimed.ac.id/2012/index.php/gorga/article/view/28791

Anggraini, R., Widiartini, N. K., & Mayuni, P. A. (2022). *Pengembangan hiasan busana pesta anak dengan recyle kain perca*. *13*(November), 139–149.

Arkhiansyah, Y., & Pratama, A. M. (2022). Rancang Bangun Aplikasi Administrasi Pelanggan dengan Teknik Lebeling Barcode dan QR Code (Studi Kasus: Subur KonveksiI). *Jurnal SIMADA (Sistem Informasi Dan Manajemen Basis Data)*, *5*(1), 1–13. https://doi.org/10.30873/simada.v5i1.3196

Aryani, D. I., & Aiman, H. T. (2021). Akulturasi dalam Batik Lasem sebagai Ide Perancangan Busana Wanita Streetwear. *Prosiding Seminar Nasional Industri Kerajinan Dan Batik*, *3*.

Damayanti, A. (2024). Pelatihan Keterampilan Usaha Produktif Bidang Jahit Dasar Pembuatan Blus Pada Busana Casual di Balatkop Productive Business Skills. *ABDI KARYA*, *1*(2), 47–53.

Erni, Anggraini, Y., Bahri, H., & Tanjung, N. (2025). *Effectiveness of Qr Code-Based Web Media With a Case Method Approach to Improve Students ' Abilities in Making Draping Patterns*. *9*(September), 683–695.

Gadi, A. C. Z., Khayati, E. Z., Suprihatin, S. E. Y., Sabatari, W., & Warno, K. (2022). Eksplorasi Teknik Sulaman Kombinasi dan Manipulating Fabric sebagai Hiasan pada Busana Custom Made. *Prosiding Pendidikan Teknik Boga Busana*, *7*(1).

Gani, I., Komari, A., & Rizkyanto, W. I. (2024). *Kualitas lulusan magister pendidikan jasmani FIKK UNY: kepuasan pengguna lulusan*. *20*(1), 54–64.

Hamid, H., Maida, A. N., & Kurniati. (2021). Penerapan Teknik Lengkapan Kain Tile dengan Sumber Ide Bunga Bougenville pada Pembuatan Busana Fantasi menggunakan Bahan Kulit Sintetis. *Doctoral Dissertation, Universitas Negeri Makassar*.

Hidayatunnisa, N., Budhyan, I. D. A. M., & Mayuni, P. A. (2024). *Pegembangan Busana Ready-to-wear Berbahan Limbah Denim dengan Sumber Ide Ombak Laut*. *15*, 164–174.

Islam, I., Haq, H. M., Hossain, M. F., Biswas, H., & Uddin, M. B. (2025). *Innovative Solutions for Sustainable Fashion : QR Code - Driven Pre - Consumer Waste Sorting in Garment Manufacturing*.

Kusumastuti, A., Khoiron, A. M., & Achmadi, T. A. (2020). *Metode Penelitian Kuantitatif* (D. Novidiantoko, A. D. Nabila, & A. Y. Wati (eds.)). Deepublish.

Lunardi, A. D., & Aryani, D. I. (2024). Application of Chinese Miao Tribe Typical Embroidery and Beadings in Women ' s Ready-to-Wear Clothing. *TEKNOBUGA*, *12*(1), 1–11.

Mahbubah, L. R., & Wening, S. (2022). Pentingnya Kualitas Produk untuk Mendukung Minat Beli Ulang Busana Muslimah Ready-to-wear oleh Konsumen Barokah Putra Collection Tegal. *Prosiding Pendidikan Teknik Boga Busana*, *17*(1). https://journal.uny.ac.id/index.php/ptbb/article/view/58996%0A

Mariia, V., Kalyna, P., Xie, Z., & Wenhui, D. (2023). *Qr-Code As a Source of Creating Decorative Elements in the Fashion Industry*. 90–94.

Mayun, A., & Sari, D. A. P. L. (2021). Penciptaan Busana Haute Couture dengan Konsep Burung Jalak Bali. *Damoda*, *3*(2).

Musyafiq, N., Herawati, R. A., Mentari, M., Krishna, W., Ningrum, F. S., & Isnaeni, N. (2024). *Inovasi Outer Kekinian Dengan Motif Kolaborasi Icon Dan Batik Jambi Disertai QR Code*. *2*(1).

Nesi, M. V. D., & Utami, S. (2023). Perancangan Produk Busana Ready-to-wear Wanita dari Bahan Tenun Ikat Ende. *JURNAL FASHIONISTA*, *1*(2), 7–13. https://jurnal.idbbali.ac.id/index.php/fashionista/article/view/935

Nisrina, Z., & Kurniawan, H. (2024). Penciptaan Ready-to-wear Duluxe Aplikasi Motif Batik Bangbarong. *Viral*, *1*(1), 5.

Novitasari, N., & Nurmasitah, S. (2025). The Feasibility of "Scanara" Ready-to-Wear Clothing with QR Code Technology. *Creativity Student*, *8*(2), 228–235.

Prasetyaningtyas, W., & Wening, S. (2022). Needs Analysis to Develop a Practice Assessment Instrument for Learning Process During Covid-19 Pandemic. *Atlantis Press*, *640*(Iccie), 307–311.

Prasetyaningtyas, W., Widihastuti, W., & Istiyono, E. (2024). Development of Learning Outcomes Assessment Instruments for Fashion Technology Courses. *Atlantis Press*, 896–875. https://doi.org/https://doi.org/10.2991/978-2-38476-198-2_120

Purnami, P. J. I., Sudhirta, I. G., & Angendari, M. D. (2023). Pengembangan Busana Pesta Dengan Sumber Ide Tradisi Aci Tabuh Rah Pengangon. *Bosaparis*, *14*(1), 29–38.

Putri, M. A., Budhayani, I. D. A. M., & Widiartini, N. K. (2023). Pemanfaatan Limbah Perca pada Pengembangan Busana Ready-to-wear menggunakan Teknik Patchwork dengan Sumber Ide Pandemi Covid-19. *Bosaparis*, *14*.

Putri, N. D., Novitasari, D., Yuwono, T., & Asbari, M. (2021). *Pengaruh Kualitas Produk dan Kualitas Pelayanan terhadap Kepuasan Pelanggan*. *15*(1), 30–47.

Putri, R. P., Bastaman, W. N. U., & Ramadhan, M. S. (2022). Pengembangan Desain Pakaian Outerwear Sebagai Penunjang Aktivitas Komunitas Strong Nation Di Kota Bandung. *Moda*, *4*(2). https://doi.org/10.37715/moda.v4i2.2083

Rismayanti, Suryani, H., & Kurniati. (2021). Perpaduan Teknik Smock Jepang dengan Model Drapping pada Pembuatan Buasa Pesta. *Doctoral Dissertation, Universitas Negeri Makassar*.

Salma, G., & Falah, A. M. (2023). *Fashion Sebagai Bentuk Ekspresi Diri dan Karakter Mahasiswa Universitas Muhammadiyah Bandung*. 94–103.

Sofwatillah, Risnita, Jailani, S., & Saksitha, D. A. (2024). Tehnik Analisis Data Kuantitatif dan Kualitatif dalam Penelitian Ilmiah. *Jurnal Genta Mulia*, *15*(2), 80–91. https://ejournal.stkipbbm.ac.id/index.php/gm

Sumaryanta. (2021). *Model Pengembangan Tes* (R. O. Akbar (ed.)). CV. Convident.

Supraeni, N. L., & Suwendra, I. W. (2024). *Pengaruh Harga , Kualitas Produk dan Kepercayaan terhadap Keputusan Pembelian Fashion Secara Online pada Mahasiswa Pendidikan Ekonomi , Universitas Pendidikan Ganesha*. *11*(2), 279–287.

Vera, N. P. G. S., Sudirtha, I. G., & Angendari, M. D. (2021). Penerapan hiasan payet pada busana pesta pada busana pesta berbahan batik balimotif merak abyorhokokai. *Bisaparis: Pendidikan Kesejahteraan Keluarga*, *12*(3), 88–96. https://doi.org/10.23887/jppkk.v12i3.37470

Witjaksono, A. R. P., Grafan, C. P., & Hardiyarso, S. (2025). *Peran Infuluencer dalam Membangun Narasi #Berkainbersama di Instagram*. *Aiccon*, 705–720.

Yuliani, A. E. W., & Prasetyaningtyas, W. (2023). Kelayakan Produk Kebaya Modifikasi Wastra Nusantara Dengan Teknik Zero Waste Pattern. *FASHION AND FASHION EDUCATION*, *12*(1), 10–16