

QR-CODE AS A SOURCE OF CREATING DECORATIVE ELEMENTS IN THE FASHION INDUSTRY

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Abstract: *The article is devoted to the problems of modern clothing design based on matrix code decor. The results of an analytical study of clothing varieties with QR code elements are presented. The main compositional principles and means that characterize them are defined. A structural analysis of literary sources was carried out. The most effective ways of using the QR code in clothing design have been studied. It was found that the coded information in the design of clothing with the help of various additions and transformations determines the nature of the perception of the clothing model. The importance and innovativeness of the use of coded information for further improvement of the fashion industry has been proven.*

Key words: *ode, coded information, QR-code, designer clothes, composition, interactive tool*

1. INTRODUCTION

QR codes on clothing are becoming the norm as people seek more information and become more and more picky when it comes to their style and appearance. Article [1] reveals the concept of «individual clothing design», which reflects the designer's own style, his unique creative idea and artistic expressiveness. The youth today are becoming more fashionable, chic and stylish than ever before, as the fashion and clothing industry is thriving and improving every day [2].

Social media platforms, along with easy access to celebrity culture, have made people set and follow current trends. In a market of well-informed customers, apparel brands choose every possible strategy to maximize their interaction with customers. Using strategies that use new technologies frees brands and companies from the dilemmas of traditional approaches. QR codes are considered to be one of the newest tools for customer retention and convenience, which is why apparel manufacturers are choosing them [3].

The appearance of clothes always remains a priority when creating modern clothing collections. Women buy fashion goods mostly for aesthetic reasons, primarily with regard to the design of the products. «Clothing for them is a tool with which they can look stylish, express themselves and stand out among others» [4].

That is why QR codes are starting to grow in popularity as a tool for fashion designers.

Designers can use QR codes to add additional data to clothing, accessories, shoes, and more. With the help of QR codes, designers can create a unique and flawless look for each design. In addition, QR codes allow designers to receive feedback from their customers.

However, the issue of decorating clothing objects with QR codes is not sufficiently researched and requires further study, and therefore the feasibility of using matrix codes in clothing design requires analysis.

The purpose of the study is to investigate the use of QR code elements in clothing design. Develop a classification for further use in clothing design.

2. EXPERIMENTAL

The methodological base of this article is a system-informational and visual-analytical method for researching modern clothing decoration using a QR code. Analytical and complex approaches, as well as art history methods, including comparative analysis, are applied.

Scientific novelty. For the first time, a classification of types of decoration of modern clothes was developed based on a QR code.

3. RESULTS

QR codes have grown in popularity during the pandemic. They have replaced paper menus, credit and discount cards, and even guest books. And now, a craze for scanning is coming into vogue. Using a QR code on clothing is a practical and convenient way to inform customers about your brand and identify a specific product. This allows you to use QR codes to enhance the design of clothing, adding additional information.

The concepts that exist in the design of clothes, as a rule, are in line with the main problems of design and are connected with the general trends of changing the way of life. The specificity of clothing design is that concepts are embodied primarily in a visual form.

QR code clothing design is different from regular clothing design as it provides much more opportunities to create a unique design. It can include graphics, text information, multimedia files, interactive elements, etc. All the great fashion designers who entered the history of fashion as revolutionaries and transformers (P. Poiret, C. Chanel, C. Dior, C. Balenciaga, etc.) proposed new creative concepts reflecting changes in society and lifestyle.

There are many creative concepts in modern clothing design. Some designers are supporters of frequent fashion changes, others strive to create a classic style, some create complete aesthetic samples, others think about the possibility of transforming clothes, which allows the consumer to express himself, seeking to evoke strong emotions. In general, we can state the growing trend of using innovative technologies, namely QR codes in clothing design. It is worth noting that clothing using matrix codes must be properly manufactured and be understandable to people.

A design using a QR code can be not only visually appealing, but also functional. For example, a bracelet (Fig.1). Silverbox has developed a bracelet that can store information about your health and family contacts. You can see it by scanning the QR code.

Siouxian created knitted gloves with a black and white QR code on the back that provides a link to their site (Fig.2). In turn, the studio Jarkman Industries developed silver cufflinks for the performance of which it used «Micro QR» (Fig. 3). All accessory examples shown are statistical with a pronounced dominant QR code.

A person's physical and digital life can be combined with the help of clothes. Designer Julie Helles designed fabric QR-codes that reveal different profiles of its owner in social networks (Fig. 4).



Figure 1: Wristband with QR-code, Silverbox, Phoenixville, Pennsylvania, United States, 2018



Figure 2: QR-code Gloves, Siouxian, Chalvey, Slough, England, 2017



Figure 3: Silver QR-code, Jarkman Industries, Richard Sewell, United States, 2019

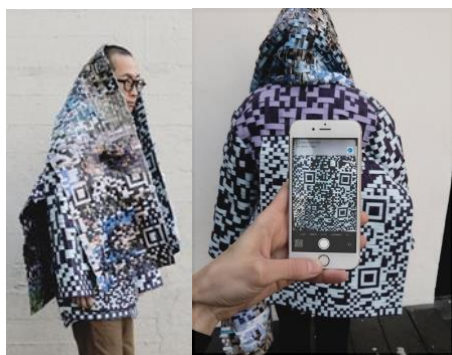


Figure 4: QR code garment, Julie Helles Eriksen, Denmark, 2019



Figure 5: Jersey featuring a QR Code, Tromso IL, Illinois, United States, 2022

Matrix codes can also be useful in social projects. For example, protecting human rights in Qatar during the 2022 FIFA World Cup. The Norwegian club Tromso IL has developed a uniform for players with a QR code that provides legal information for people (Fig.5).

The line between reality and the virtual realm is becoming more and more blurred. For example, Puma uses QR codes with augmented reality to create a realistic experience of using its shoes (Fig.6). «LQD CELL Origin AR» sneakers are completely covered with two-dimensional QR codes, after scanning which you can go to the site where many author's virtual games from the manufacturer are available.

Compositionally, the dynamics and such principles of objectification as subordination and proportionality can be traced in outerwear and shoes.

Interactive clothes are rapidly entering our lives. Ludic Pattern designed the dress by encoding Sandro Botticelli's painting The Birth of Venus. When scanning the matrix code, each pattern is replaced by an image (Fig 7). The design of this interactive dress uses the principle of balance.



Figure 6: Puma’s new LQD Cell technology, Puma, Herzogenaurach, Germany, 2020



Figure 7: QR-Dress, Ludic Pattern, Switzerland, 2023

By carrying out a structural analysis of literary sources and researching different ways of using the QR code in clothing design, it is possible to form the key principles and design tools used by clothing designers (Tab.1).

Table 1: Classification of types of modern clothing decoration based on QR code

DESIGN PRINCIPLES	QR CODE REPRESENTATION	MEANS OF COMPOSITION
Principle of dominance	Accessories	Statistical
The principle of subcontracting	Outerwear	Dynamic
Principle of proportionality	Footwear	
Principle of balance	Dress	Interactive

The use of coded information for further improvement of the fashion industry is important. QR codes in clothing design, with the help of various additions and transformations, determine the nature of the perception of the clothing model. For example, designers most often use a static means of composition when developing accessories guided by the principle of dominance. When designing outerwear and shoes, the principle of proportionality and coordination is used to create dynamic design models. When a clothing designer combines tools to create an interactive experience, he is guided by the principle of balance in projecting dresses.

4. DISCUSSION

Today, fashion design is moving to a new level, because it is being transformed into a tool for communication between the designer and the consumer. Historically, clothing has always had a close connection with a person. Previously, it had only aesthetic functions and protected against weather conditions. Now QR code is used for clothing design. They became the last step in the development of clothing design technology. Thanks to the matrix codes, a large amount of information can be placed on the clothes, which can be read using a special device. They can be placed on any surface such as clothing, accessories, labels, etc.

The article examines and describes the principles and means of projecting coded information in clothing design (Tab.1). The results of the research can be used for further study of coded information, as well as serve as theoretical and practical material for the training of design specialists.

5. CONCLUSIONS

QR codes have become popular in the fashion and apparel design industry because they are a simple and practical way to address needs. Designers are adding matrix codes to their collections to add elements of digital distance. Additionally, QR codes can be used to provide additional product information.

After analyzing the clothes with QR code elements, it was found that the coded information in the design of the clothes determines the nature of the perception of the clothing model. A classification of the types of decoration of modern clothes based on the QR code has been developed.

It has been established that when designing accessories, the dominant principle prevails and the statistical composition tool is most often used. Instead, outerwear and footwear design is dynamic and dominated by the principle of coherence and proportionality. The design of the interactive dress uses the principle of balance. Accordingly, it can be argued that clothes are one of the most effective means of communication in the modern world.

The use of QR codes in clothing design provides the process of creating decorative elements with new functionality to improve their aesthetic and communicative properties.

6. REFERENCES

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