

An Exploration of Sustainable Costume Design Based on Workwear Style

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ABSTRACT

This article is intended to discuss sustainable styling features and related costume design approaches based on contemporary workwear styles and propose sustainable design strategies by analyzing the history of modern and contemporary workwear as well as the influence factors to the workwear style popularity. This article sorts out those unique workwear styles such as vintage, genderless, futurism, based on which we propose and discuss various design approaches suitable for current development needs by means of establishing a questionnaire for consumer perception analysis of sustainable costume design of workwear style and collecting data for elaboration, so as to provide important ideas for sustainable costume design based on workwear style.

Keywords: Workwear style, popular fashion, sustainable costume design, consumer perception, design approach.

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RESEARCH BACKGROUND

Workwear style is quite influential in costume design. It belongs to one of those practical clothing types and is widely favored by consumers due to its functionality and convenience. Now the waste and pollution caused by the development of the clothing and textile industries are problematic. Focusing on sustainable development has now become an important goal and strategic focus for the development and construction in China and even the whole world. It has a positive impact on product development in the current design field to explore clothing and popular fashion with workwear style and sustainable design aesthetic features. This impact is not only reflected on the functionality of clothing, but also on leading the fashion trends and transforming the costume design concepts.

INTRODUCTION

Workwear Style Overview

The initial prototype of workwear may be traced back to the Industrial Revolution in modern times. With the wide availability of production tools and equipment for mechanized manufacturing, people need garments that are durable, wear-resistant, and functional in terms of outer shape, materials and structural organization to fit in the labor scenarios in factories, mines, railways, and plateaus. Early workwear took functionality as the core demand, with representative categories including Work Jacket (e.g., the “Bleu de Travail” blue work jacket in France) as well as Denim Pants and Overall. These garments aimed more at cutting for loose outfit and easy moving, as well as the design of multiple parts and multiple pockets,

just to facilitate workers in carrying tools. In this period, workwear design mainly served the needs of labor, so the materials were mostly twill cotton and canvas, with colors being dirt resistant indigo, khaki, and dark gray.

Originating from the working class of the late 19th and early 20th centuries, the contemporary workwear style is durability and functionality driven, with durable canvas, denim, leather, metal zippers and buttons as the common elements [1]. As time goes by, workwear style gradually becomes the focus of attention in the fashion industry as a design that combines practicality and aesthetics [2]. In the 1960s, young people who pursued individuality and freedom saw workwear as a symbol of challenge and rebellion against traditional and mainstream culture. Thereafter, workwear began to show off on the fashion stage as it no longer represented merely working clothes. These fashion enthusiasts were brave enough to personalize the workwear and invent creative match that gave workwear new vitality. Since the 21st century, workwear has received increasing attention, resulting in fashionable items that come with both historical and modern in aesthetic sense. Especially, driven by the sustainable fashion development, the design concepts of workwear style provide a new perspective for the application and recycling of the environmentally friendly materials and transparency in the manufacturing process.

Popularity of Workwear Styles and Factors Analysis

In recent years, workwear styles have been hot topics in fashion industries. Many influential classic brands launch their collections with workwear elements in it. Workwear styles are the objects of designers' imitation. The popularity of workwear styles can be analyzed from four perspectives: natural factor, social factor, physiological factor, and psychological factor.

Natural Factor

Workwear styles emphasize functionality and durability, which are the basic needs for clothing in natural environments. Usually, workwear design focuses on details like stitching reinforcement and wear-resistant fabrics, allowing workwear to maintain significant benefits in outdoor or work environments. Also, workwear styles feature multi-layer weaving that are both warm and breathable to fit various climates.

Social Factor

Workwear styles originate from the worker clothes in the Industrial Revolution, which represent the diligence and resilience of the workers. As time develops, this style has gradually evolved into a cultural symbol accepted and loved by more people. Workwear style is not only a fashion

style, but also an embodiment of life's attitude and values. People in workwear style are often thought to be practical, diligent and self-disciplined. This sense of social identity further promotes the popularity of workwear styles, which tend to incorporate and replicate classic elements.

Physiological Factor

Workwear styles take ergonomics seriously, the garments designed shall go with the body's natural curves and individual movement habits. This allows the wearer to maintain ease of movement in both work and daily life. Also, workwear styles often feature loose and breathable designs that are useful to keep the body dry and comfortable. These functional clothes that combine sports and leisure with functionality are desirable designs for most consumers.

Psychological Factor

Workwear styles, with their unique appearance and temperament, attract many young people who pursue individuality and self-expression. They express their attitude and standpoint by wearing workwear style garments.

MATERIALS AND METHODS

Interpretation of the Workwear Styles' Uniqueness

Vintage Workwear

Vintage trends start to rise with the downturn of the global economy. More and more people miss the past full of industrial atmosphere, or put it another way, workwear style is one of the important symbols in that time, and it thus naturally becomes an important carrier for such retro sentiment. The reason why workwear of vintage style goes retro is because it contains the sedimentation of time and a rich history. In the history of world development, we see a workwear picture of synchronous development, mutual influence and integration among multiple regions.

The United States is the birthplace of workwear. The initial founding brands of US-style workwear like Carhartt (born in 1889) and Levi Strauss (born in 1953) are well-known representatives of vintage workwear. After World War II, the US workwear design was diversified. Recently, with the revival of retro trends and Vintage culture, US workwear once again becomes a darling of the fashion industries. Japanese workwear style is also referred to as "amekaji". It is a US leisure style with Japanese characteristics resulting from the US culture influencing Japan in the 1950s and the subsequently continuous development and integration, with the brand Pherrows shown in Fig. 1 as an example. This brand focuses on replicating US classic denim and related clothing accessories, representing a workwear style that combines modern and vintage characteristics.



Figure 1. Japanese workwear style – Pherrows, classic outfits (Source: Pherrows official store)

Genderless Workwear

With the deepening of society's understanding of gender equality and mobility, the traditional binary gender framework is gradually falling apart. As a representative of functional garments, the workwear may, after being designed gender neutral, not only address practical needs, but also express individuality and deliver consumer identity recognition. This type of style comes with an H-shaped or

X-shaped silhouette, with a design that weakens gender characteristics, e.g., loose and strong contrasting workwear jackets and overall. Through gender neutral or transgender cutting and functional details, the gender identity of the clothes is blurred^[3], as shown in Fig. 2, MIU MIU 2025 SS launch, where men were wearing women's clothing (left 1) and women were wearing cool jackets (right 1 and right 2).



Figure 2. MIUMIU 2025SS Men and women wearing cool jacket. Source: VOGUE RUNWAY

Futurism Workwear

Futurism workwear style is a fashion style incorporating futuristic sense, usability and hardcore workwear aesthetics.^[4] It breaks through the single framework of traditional workwear to integrate protective design and modular design of outdoor clothing while combining the cool and rugged texture of Cyberpunk, producing a unique style that is both functional and personal, as shown in Fig. 3. This design features the use of modern waterproof breathable membrane, tear resistant nylon, lightweight carbon fiber and other materials on the fabrics to deliver multi-scene fitness such as windproof, rainproof, and

breathable quality; Structurally, modular and layered design is adopted, and a three-dimensional wearing hierarchy is constructed by stacking apparel items such as multi pocket vests, detachable components, tactical belts, etc.; For the detail design, it leverages adjustable straps, hidden pockets, magnetic fasteners and other workwear elements; The dominant colors are black, gray, military green, and dark brown, paired with metal zippers, rivets, reflective strips, and other elements to create a strong visual contrast; For modeling, it attaches great importance to three-dimensional structure and asymmetric design with enhancing dynamic lines.



Figure 3. Futurism workwear style - Hamcus 2022/23FW fashion launch. Source: Hamcus official website

Consumer Perception Analysis for the Workwear Style Sustainable Costume Design

It is clearly stated in the recently published *Research Report on Innovation in China's Circular Fashion Industry* that the dominant sustainable consumer groups are the Generation

Z. Based on the characteristics of workwear styles and sustainable costume design techniques, the key dimensions of this article are finalized as follows: consumer perception on sustainable fashion, perception on sustainable design of workwear style apparel, consumer behavior and attitude, and consumer perception experience, as shown in Table 1.

Table 1. Questions design and reference

Dimensions	Metrics	Source
Consumer perception on sustainable fashion	Process of understanding sustainable fashion	(5) ^[5]
	Pathways to understand sustainable fashion	(5), (6) ^[6]
	Importance of sustainable fashion	(5), (7) ^[7]
	Important factors of sustainable fashion	(5), (7)
Perception on sustainable design of workwear style apparel	Knowledge level of workwear style apparel	Set by us
	Overall feeling of workwear style apparel	Set by us
	Attention to sustainable design in workwear style apparel	(8) ^[8]
	Factors contributing to the purchase of sustainable design in workwear style apparel	(8)
Consumer behavior and attitude	Purchase experience of sustainable fashion apparel	(5)
	Willingness to pay premium for sustainable fashion apparel	(5)
	Intention towards sustainable costume design techniques	(5), (9) ^[9]
Consumer perception experience	Concerns about purchasing sustainable fashion apparel	(5), (9)
	Intention towards sustainable costume design features for workwear style	Set by us
	Intention towards purchasing value range for sustainable fashion workwear	Set by us
	Intention towards purchasing channels for sustainable fashion workwear	Set by us
	Future purchase intention for sustainable fashion workwear	Set by us

Data analysis and Results

The statistical analysis results of perception reveal the following design choices and style tendencies;

- 66.19% of the consumers consider workwear style as durable and functional, 82.38% consider workwear as neutral style, **63.33% believe that workwear aligns with sustainable concepts**, thus it could be labeled as a workwear style in the eyes of the public, which helps to produce sustainable fashion workwear that meets public expectations; 16.19% of the consumers often pay attention to the use of sustainable design in workwear style clothing, 62.86% of the **consumers occasionally pay attention to this, accounting for the vast majority**. Therefore, there is a certain necessity for the adoption of sustainable design in workwear;
- For the factors in stimulating consumer purchase, 53.33% look for the combination of design style and functionality, 47.14% look for clear labeling of sustainable materials and reasonable prices. Although **9.52% of the consumers are willing to pay a premium of more than 10%**, 60.48% of those are only willing to pay a premium of less than 10%;
- 90.95% of the consumers tend to purchase outfit for various occasions, while 52.38% of those are in**

favor of recycling old clothes. It suggests that in the design process, the approach should be to take Outfit-for-Various-Occasions technique as the first line and complement with old clothes recycling, i.e., a dual-techniques process.

- 4 **68.57% choose genderless workwear style, while 61.43% choose futurism workwear style,** so these two styles of design collections could be prioritized.

DISCUSSION

Exploration of Sustainable Costume Design Approaches

Outfit-for-Various-Occasions design technique

In sustainable costume design, Outfit-for-Various-Occasions technique ^[10] is favored by designers and

consumers due to its high functionality, high cost-effectiveness and great creativity. There are several commonly used design techniques, including: detachable design, flip design, stereo structure design, adjustable structure design, multifunctional transformative design, and other techniques.

Detachable Design

Detachable Design is characterized by combinable and detachable structure or accessories of the clothes. It breaks down clothing into multiple independent and fully functional modules, which are attached by zippers or uncovered/concealed buttons. Consumers may freely combine, disassemble, and replace them based on their needs ^[11], as shown in the structural combination in Fig. 4



Figure 4. YKHD 2024 Autumn & Winter collection – Detachable down jacket (Source: SOHU)

Adjustable Structure Design

Adjustable Structure Design technique focuses on key parts of the garments, such as collar, cuffs, waist, hem, etc., with various adjustment mechanisms adopted. It usually uses adjustable drawstring and concealed buttons combination design, Velcro, and multi gear buttonholes. The drawstring could be freely tightened or relaxed to adapt to different

dimensional sizes (as shown in Fig. 5), while the concealed buttons provide additional fixation to ensure that each component fits and stabilizes. When used in workwear, it can effectively prevent wind in cold weather and display personalized style when needed, with a certain degree of multi-scene applicability, which is very in line with the paradigm needs of workwear costume design.



Figure 5. SQUADUNIDENTIFIED - Trousers with four-fold buttons. (Source: SQUADUNIDENTIFIED official website)

Old clothes recycling design technique

Old clothes recycling is another direct solution to the issues of resource waste and environmental pollution in the contemporary fashion industries, the core of which lies in deconstructing, reorganizing, and creatively transforming

discarded clothes to give them new functional value and aesthetic significance.

In old clothes recycling, it is required to first assess the materials of the garment to be recycled ^[12], then consider the styling to determine the addition or subtraction of

various combination elements such as patterns and details to achieve a change in style while modifying the garment in conjunction with current trends. This recycling approach brings more dimensional possibilities and opportunities for the design and fulfillment of workwear.

Recycling techniques can be divided into painting and dyeing, riveting and beading, weaving and sewing, as well as deconstructing and reorganizing. Painting and dyeing^[13] uses painting or dyeing techniques to change the color, pattern texture, and printing effect of the original garment; Riveting and beading^[14] is a delicate recycling technique that enhances the infectiousness of garment details in a combination of practicality and aesthetics, extending the local lifespan of the garment while improving its appearance design expression, which is particularly impressive for the expression of workwear style; Weaving^[15] is the process of breaking down garment into strips and then reconstructing them; Sewing is generally decorated by sewing threads made by combining fabrics. Different stitches and threads can achieve different visual effects, while also increasing the fastness and durability of the garment; deconstructing and reorganizing^[16] are the process of restructuring and reusing the garment structure. It is not simply about arrangement and combination, but rather it requires designers to achieve a common result based on their own aesthetics and consumer preferences.^[17] These improved recycling approaches based on the aesthetic style of workwear provide important ideas for sustainable design of clothing.

CONCLUSION

As the awareness of environmental protection increases, more and more consumers are paying attention to the sustainability and environmental friendliness of products. Functional and fashionable workwear style is an important choice for contemporary consumers. The workwear style, with its authenticity, durability, and efficiency, continues to lead the costume design trend that emphasizes both functionality and aesthetic value. Sustainable development is not only a trend but also introduces new aesthetic language into workwear style clothing design. Excellent design is the systematic integration of form, color, function, culture, and ethical morality. Costume design needs to find a balance between visual impact, cultural resonance, practical value, and social responsibility, in order to build an aesthetic paradigm that keeps up with the spirit of the times.

REFERENCE

(Endnotes)

- 1 || Zhai Yi, Du Bingbing. Research on the application of fashion workwear design elements (Taking fishing vest as an example) [J]. Fashion Color, 2021, (02): 76-77.
- 2 || Shi Dongqing. The symbolic expression of workwear elements in fashion design [D]. Nanjing University of the Arts, 2020.
- 3 || Song Zimin, Li Weiyan, Feng Lingling. The Application and trend analysis of non-sexism in clothing [J]. Journal Of Wuhan Textile University, 2024, 37 (02): 42-49.
- 4 || Liang Yingchun. Design status and elements analysis of urban outdoor sportswear [J]. Tianjin Textile Science & Technology, 2022, (02):5-8
- 5 || S.L.M, Balkrushna P, H. R.M. Prioritising sustainable garment choice among high-volume fashion consumers [J]. Journal of Fashion Marketing and Management: An International Journal, 2024,28(4) :875-889.
- 6 || Liang Jianfang, Chen Xiangwen, Cao Xuerong, et al. The spillover effects between curtailment behavior and efficiency behavior of sustainable clothing consumption [J]. Journal of Silk, 2025, 62 (03): 1-9.
- 7 || Li Li. The fashion industry emerges as a catalyst for sustainable consumption [J]. China Sustainability Tribune, 2024, (04): 52-53
- 8 || Zhao Chun, Lu Xiaojian, Lin Jinghan, et al. Sustainable development strategies of dalang garment enterprises in dongguan based on ESG principles [J]. West Leather, 2025, 47 (03): 14-16.
- 9 || Halicki D, Zaborek P, Mey lan G. Sustainable Fashion Choices: Exploring European Consumer Motivations behind Second-Hand Clothing Purchases [J]. Administrative Sciences, 2024,14(8) :174-174.
- 10 || Zhao Min, Liu Surong, Tang Kejie, et al. Research on the design of casual clothing under the concept of one-clothing multi-wear [J]. Light and Textile Industry and Technology, 2024,53(02) :133-135.
- 11 || Li Hongxiao. Research on the design of men's workwear style based on the modularity concept [D]. Donghua University, 2022.
- 12 || Wan Kun. Redesign of discarded clothing based on sustainable fashion concepts [J]. West Leather, 2025, 47 (01):87-89
- 13 || Meng Ke, Gu Yi. Research on the design of waste recycling in ready-to-wear based on sustainable concept [J]. Shandong Textile Science & Technology, 2024. 65(01): 8-11
- 14 || Cheng Yu. Research on the redesign of scrap denim based on sustainable development concept [D]. Jiangnan University, 2023.

- 15 [] Shi Jiaqi, Liu Hongxiao. Innovative application of patchwork art under the concept of green clothing design [J]. West Leather, 2023, 45(15) : 94-96.
- 16 [] Li Yinping. Research on sustainable fashion design based on up-cycling methodology [D]. Beijing Institute Of Fashion Technology, 2016.
- 17 [] Jia Shujie. Sustainable fashion - research on garment reconstruction and reuse designs [D]. Beijing Institute Of Fashion Technology, 2019.