



Construction of Big Data Health and Safety Mechanism of Second-hand Clothing under Sharing Economy

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Abstract. Through the study on the present situation of our country second-hand clothing hygiene safety problems, put forward the concrete solution and mechanism, using big digital management mode, strict control of health source, and to establish a perfect and effective government regulation system, and through the Internet interactive platform to be open and transparent, so as to promote the steady and healthy development of the second-hand clothes market.

Keywords: Sharing economy; Second-hand clothing; Health and safety introduction

1 The introduction

In the twenty-first century today, many unknowns have been discovered, interpreted and cracked in turn, but there are still many things that human beings cannot discover. Looking back on ancient and modern times, bacteria, epidemics and infections have an incomparable impact on human beings, and most of their causes are caused by health problems. Therefore, health and safety issues are one of the most important factors for human survival in addition to food and clothing, and also all walks of life must pay attention to them before production and operation.

2 Literature review

The hygiene of second-hand textiles and clothing includes two categories, namely the problems existing in first-hand clothing itself and the problems derived from second-hand clothing.

The first hand research on the hygiene of clothing now has two aspects: additives and clothing accessories. Shufang Du proposed that the use of resin crosslinking agent that does not contain hydroxymethyl groups, namely formaldehyde free resin, can also be further used to chemically modified dihydroxymethyl dihydroxyvinyl urea, the application of low formaldehyde finishing control, such as BRT, M2D, FR8 resin

products in the free formaldehyde content is generally only 0.2%-0.6%. Using this kind of product can obtain the lowest free formaldehyde value on the interlining, it is better in quality, price and environmental protection.[1] As for the problems arising from second-hand clothing: recycling system and supervision and management, scholars such as Jiao Ren put forward the principle of reduction and reuse.[2] For the exploration of the recycling mode, Hui Qi scholars proposed the construction of the reverse logistics recycling and processing mode of used clothes based on the EPR system. This method emphasizes that producers have negative effects on the products they produce, so as to fundamentally realize the reuse and pollution-free of used clothes. [3] As for the classification standard, Juanjuan Guan and other scholars proposed to divide the waste clothes into five basic attributes: damage, fading, pollution, comfort and fashion. According to the attributes, the choice is to donate or sell at a discount, secondary design, etc., and to choose the best quality way for disposal. [4]

Multi-dimensional research is conducive to the discovery of the essence of things, but individual discussion cannot clearly find out their internal relations. Only with the connection can a closed-loop path of circular development be formed, which can be permanently recycled under the premise of constant upgrading and consolidation. Therefore, this paper will integrate the existing research of scholars, combined with my thinking on second-hand textiles and clothing, to explore the hidden connection, so as to form a complete construction of safety mechanism.

3 Domestic and foreign status quo

3.1 Recycling effect abroad is remarkable

3.1.1 The influence of recycled concept deeply.

In Germany, has set up a sound system of circular economy laws and regulations, such as the waste disposal act, every year 1.9 million tons of waste textiles and clothing are discarded, of which about 42%, nearly 800000 tons of waste textiles, clothing is collected and recycled, occupies an important position in the pillar industry, and British consumers to buy 2 million tons of new clothes every year, About 1.1 million tons of textiles and clothing are discarded each year, of which about 27 percent, or nearly 300,000 tons, are collected and recycled.[5] According to the data, a large number of textiles re-enter the market in Germany and Britain every year and are consumed by people. It can be seen that most people do not mind using or buying recycled goods, which are deeply influenced by their ideology.

3.1.2 Systems and mechanisms have been improved.

Japan and the United States also have some clothes put into recycling. In addition, some scholars proposed to enhance consumers' awareness of recycling used clothes, and enterprises should establish a recycling system for product development using used clothes, and the government should formulate relevant policies to support it, and enterprises should also have and strengthen the ability of related processing technology.[6] International well-known textile recycling organizations such as the Textile

Recycling Trade Union are also actively practicing and exploring the recycling market.

3.2 Domestic recycling needs to be strengthened

3.2.1 The scope of market acceptance is small.

As the old saying goes, "New clothes are better than new ones. Whether it's clothing or anything else, people are very reluctant to use something that has been used before, even if it's more affordable. In Shanghai, for example, according to relevant studies, most people buy second-hand clothes only because they can accept the price, and only the second-hand clothes of high-end brands. In addition, most people think that second-hand clothes are a symbol of poverty, and the impression of second-hand clothes is still kept in the traditional concept of low quality and unhygienic. [7] Without consumers, there would be no market, and the development of second-hand clothing was greatly hindered by ideological factors.

3.2.2 The recovery system has been gradually improved.

Domestic researchers and scholars have made great achievements in the aspects of recycling treatment. But most of the focus is still on the system and the method of recycling, although the government need to establish a unified standard, for the health and safety the issue also involves very little. In the face of a large amount of donations, recycling second-hand clothes, if there is a mess, stink, will work to the next, hoarding a large number of clothings can cause secondary pollution, its health problems remains to be consideration.

4 Health problem analysis

4.1 The existing problems in clothing

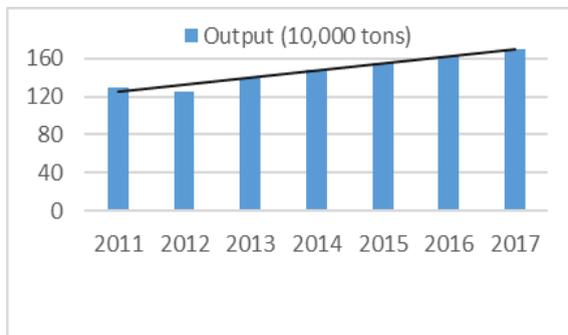


Fig. 1. Output of textile printing and dyeing auxiliaries from 2011 to 2017

Source: China Clothing Society, the view of the world research finishing

4.1.1 Additives exceed the standard should take seriously.

The bright colors of clothing, such as red, yellow and blue, and the special functions of fabrics are all related to additives. Formaldehyde is used in the finishing of textiles, help fixation and anti-wrinkle, but concerns exist certain diseases; Dyes and pigments may contain heavy metals such as lead, chromium and mercury, some of which is harmful to the human nervous system, kidneys; Phthalate ester is a common plasticizer, children after contact and sucking, easy to enter the body, causing serious harm. [8] The addition of chemicals, although can make clothes look more glamorous, but it will be a serious harm for human body.

4.1.2 The health and safety problems of garment accessories have been neglected seriously.

In the face of clothing, we often ignore the problem of clothing accessories, buttons, zippers, buckles, metal buttons and other accessories, is a very important part of the clothing effect. As accessories, it will also carry out the same textile, printing and dyeing processes as fabrics. Therefore, the problems caused by fabrics will also be produced as accessories, and some metal accessories will also have problems such as heavy metal standards. [9] Accessories as an essential content of clothing, its hygiene is also included in the quality of clothing, the gain outweighs the loss, such cases are numerous, so we should pay more attention to, we should pay attention not only to its quality but also to its hygiene.

4.2 Second-hand clothing derivative problems

4.2.1 Second-hand clothing recycling has diverse sources.

Second-hand clothing recycling as the first circle of recycling should pay special attention to the first source of clothing determines most of the nature of clothing. Clothing recycling is widespread. It is reported that some of them are collected by private enterprises putting recycling bins on their own, and some of them are collected from recycling stations, dustbins, and even unknown "dead clothes" in some places. Without reliable quality inspection and disinfection, even the source of these clothes with unknown origin is daunting.

4.2.2 The facilities and environment of the sorting system are incomplete.

Clothing as a big class, there are a lot of classification, according to the fabric material and accessories, can be divided into multiple. But some recycling enterprises can only be simple classification, such as men's and women's clothing, but not specific detailed distinction. Secondly, mainly rely on sorting human resources, human resources is used up big, assembly line is not perfect.

4.2.3 Disinfection measures of equipment to be upgraded.

The disinfection standard of second-hand clothing is still being further improved, but for some recycling enterprises, the disinfection methods and steps need to be improved, and it is not applicable to all fabrics, and some harmful bacteria can not be effectively suppressed and removed. Among them, bacteria such as yellow staphylococcus, coliform make fiber material changes color, fiber embrittlement decompose, strong drop, easy to infect disease. [10] Secondly, the number and scale of disinfection facilities and equipment are relatively small. In the face of a large number of second-hand clothes to be disinfected, the operation turnover of disinfection equipment is not open, coupled with regular maintenance and damage, the demand far exceeds supply.

4.2.4 Disinfection of market goods is slack.

With the popularity of Shared services, health and safety after the market should be taken seriously. When we enter the scenic area, there will be a clothing store, for us to take pictures. As long as we observe carefully, it is not difficult to find that most of the clothes will have more or less stain and odor. Although we don't wear them close to our bodies, they still have a big impact on how we feel. Inadequate oversight powers and responsibilities

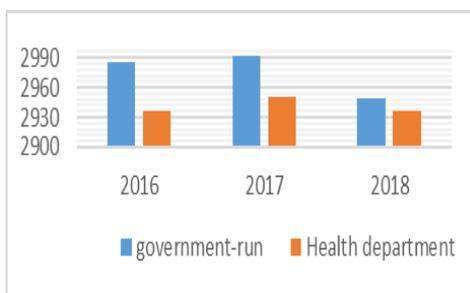


Figure 2. Number of National Institutes of Health Supervision (Centers) in China from 2016 to 2018

Source: China Statistical Yearbook on Health and Family Planning (2016 -2018), Zhiyan Consulting

Health supervision from 16 to 18 years, the amount is reduced, the number of urban and rural areas, the province is not coordination, supervision and accountability is not stable, as a regulator, lack of effective supervision inspection equipment, is the main obstacle on functions and authority. The supervision of relevant departments is not in place and the disregard of businesses, resulting in the market circulation of goods disinfection is not in place.

5 Mechanism construction

5.1 The construction of a recyclable recovery system

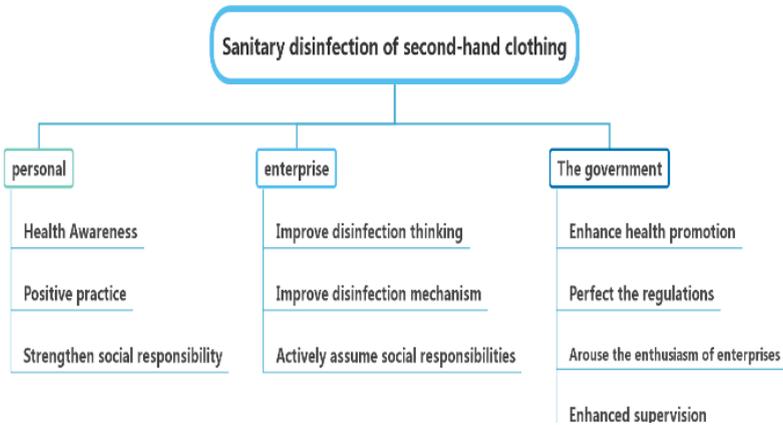


Fig. 3. Tripartite role of health

Under the prevalence of the sharing economy, we should respond to the national sustainable development strategy and protect the sustainable development of the market.

5.1.1 Big data management of recycling source.

In the process of recycling, the Internet technology is used to develop clothing recycling collection system (APP). Before the transaction, the clothing donor fills in the clothing information through the APP, and the QR code is generated after filling in. Sellers will also be able to track donated clothing in real time through the app, making it as transparent as possible. Finally, the special processing and analysis of these information provides convenience for classification.

5.1.2 Clear classification and sorting.

Classification and sorting can not be completely replaced by machines. According to the research shows that: at present, all related enterprises in China use manual sorting; The composition of waste textiles is difficult to be identified by direct observation, which requires experienced workers to identify and sort them by burning, smelling and other methods. [11] Therefore, it needs to invest a lot of manpower and formulate detailed classification and sorting standards, such as the division of old and new degree, the division of clothing types and so on.

5.1.3 Improve the establishment of disinfection system.

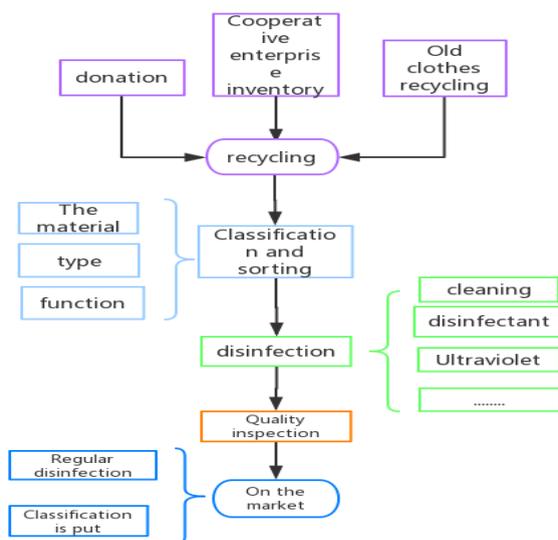


Fig. 4. Enterprise recycling flow chart

The establishment of a complete set of recycling disinfection process can not only promote the recycling of such renewable resources, but also inject new impetus into the industry, alleviate the waste of resources and health and safety issues. Therefore, after sorting is completed, disinfection is carried out for several times. In the face of different actual situations, disinfection methods and procedures should also be changed accordingly. A more perfect disinfection technique still depends on the continuous research and exploration of more professionals.

5.1.4 Actively practice regular disinfection.

Costume rental does not guarantee loan personnel's health situation and its whereabouts trajectory, so the second-hand clothing in the loan after the recovery process, and to ensure the clean health, not only need to clean them regularly, and after use of alcohol spray disinfection, so as to reduce the risk of cross contamination, and put clothing categories, such as use, after use, Clear boundaries of use.

5.2 Build a transparent regulatory system strictly

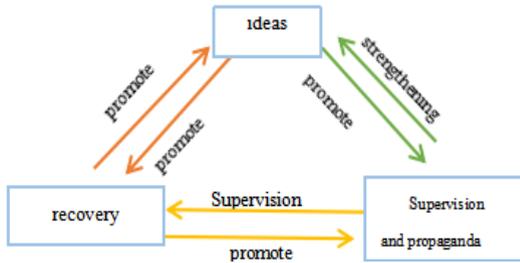


Fig. 5. Three-way connection diagram

5.2.1 Strictly control the content of clothing additives.

Additives are widely used and difficult to control accurately. In the implementation of the premise, by the state to understand the number of additives required by the enterprises, online registration, detailed record management. The control of garment additives needs the dual role of market and national macro-control. Only by changing the enterprise from the source can the problem be truly solved.

5.2.2 Expand the awareness of health recycling.

Some scholars have proposed that all residents should participate in the recycling process through the assistance of enterprises, so as to promote their enthusiasm. In addition, they should be treated differently according to the living environment of urban residents and rural residents, and get corresponding consumption vouchers and subsidies after the completion of recycling [12], this method is largely facilitate the recycling process, fully arouse the enthusiasm of Calvary link. Also positive health safety circulating consciousness propaganda, coupons, subsidies and other way, to guide people.

5.2.3 Enhance supervision and management standards.

As a supervisory organization, whether it is handled by the government or established by the health department, first of all, there should be clear functional norms. Clear functions are the sharp sword in the hands of supervisors. Secondly, the personnel should be trained to make the supervision personnel deeply understand their work content and work significance, from inside to outside to fully implement the health and safety thought.

6 Conclusion

The reuse of second-hand clothing is an essential step for recycling. The construction of a complete system and the strengthening of strict and transparent supervision

mechanism need to be constantly practiced and explored. The health and safety problem is the key to the operation of the whole second-hand clothing market, which can not be ignored or ignored.

Acknowledgment

Fund Project: In 2021, Beijing Institute of Fashion Technology Undergraduate Innovation and Entrepreneurship Training Program Project - Feasibility Study of Clothing Exchange and Leasing Mode under the Shared Economy Environment.

Beijing Social Science Foundation - Capital Garment Culture and Garment Industry Research Base Project - Research on Intelligent Business Form Innovation of Beijing Fashion Culture Industry (19JDYJA007)

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