

Investigation and Improvement Strategy of Classified Treatment of Domestic Waste in Anshan City

Xinzhe Wang, Xiaolin Zhu, Jingzhe Zhao and Songyue Liu

School of Business Administration, Liaoning University of Science and Technology, Liaoning, 114051, China

Abstract

With the rapid development of economic level, people's living standards are getting higher and higher, and the amount of garbage is increasing every year. Garbage has become one of the factors that can not be ignored affecting residents' good life. Garbage treatment is imminent. In order to deeply understand the classified treatment of domestic garbage in Anshan City, this paper adopts the method of combining market research and theory, This paper analyzes the problems of domestic waste classification in Anshan City in three aspects: policy tools, publicity and guidance and participation subjects, and puts forward suggestions on government leadership, social coordination and public subjects, in order to provide help for the promotion of domestic waste classification in Anshan City.

Keywords

Domestic waste classification; Anshan City; Collaborative treatment.

1. Current Situation of Domestic Waste Classification in Anshan City

With the continuous improvement of economic level, the introduction of national policies and the continuous improvement of residents' quality, the importance of domestic waste classification has gradually emerged. As required by the state, we should cultivate the habit of waste classification and contribute to improving the living environment and green and sustainable development. The goal is that by 2025, the domestic waste classification and treatment system will be basically completed in prefecture level cities and above in China. Anshan City also keeps up with the pace of the times. In some areas, classified garbage cans have been put in place and relevant follow-up work has been deployed, However, the expected effect was not fully achieved in the process of use.

2. Survey Objects and Methods

2.1. Data Sources

The data of this study are the questionnaire survey released by the author on the questionnaire star platform from October 1 to November 1, 2021. Considering the epidemic reasons, in order to support epidemic prevention, this survey adopts the method of online survey, with a total of 160 questionnaires recovered, 3 invalid and unqualified questionnaires after screening, and a total of 157 valid questionnaires.

2.2. Research Methods

This study mainly adopts the methods of literature research and market research. On the one hand, with the help of the relevant research and literature on domestic waste treatment collected by China HowNet, this paper sorts out its more prominent experience and theory, so as to provide reference for this study; On the other hand, the questionnaire star and the

National Bureau of statistics and other online data platforms are used to collect and sort out the relevant data of domestic waste treatment, so as to provide data support for this study.

3. Data Processing and Statistical Analysis

3.1. Analysis on Current Situation of Domestic Waste Classification in Anshan City

According to figure 1. Anshan residents produce more domestic waste every day, of which 1kg and 1.5kg account for a large proportion, accounting for 38.85% and 24.2% respectively, followed by 0.5kg, accounting for 19.11%, and finally 2kg and above, accounting for 10.19% and 7.64%. According to figure 2, the domestic waste removal and transportation volume in China has gradually increased in recent ten years, which reflects the huge amount of domestic waste in China. As the "eldest son of the Republic", Anshan is duty bound, and the classified treatment of domestic waste urgently needs people's attention.

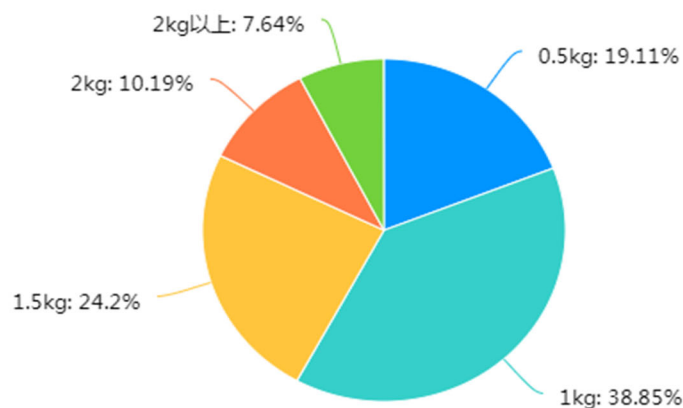


Figure 1. Weight of household garbage generated every day

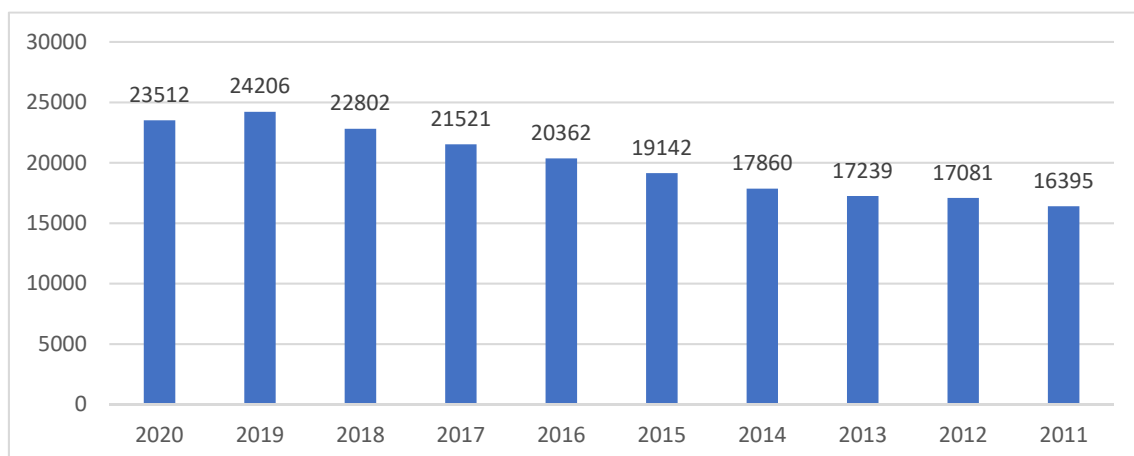


Figure 2. Domestic waste removal and transportation volume in recent ten years (10000 tons)

According to figure 3, in Anshan, traditional garbage cans are still the main garbage sorting facilities, accounting for 47.77%, followed by classified garbage cans, accounting for 29.94%, and finally, fixed garbage stations and no garbage cans account for the least, accounting for 12.74% and 9.55% respectively. It can be seen that the domestic garbage sorting facilities in

Anshan have been put into operation one after another, but the scope has not been fully covered, It is still dominated by traditional garbage cans, which need to be improved in the later stage.

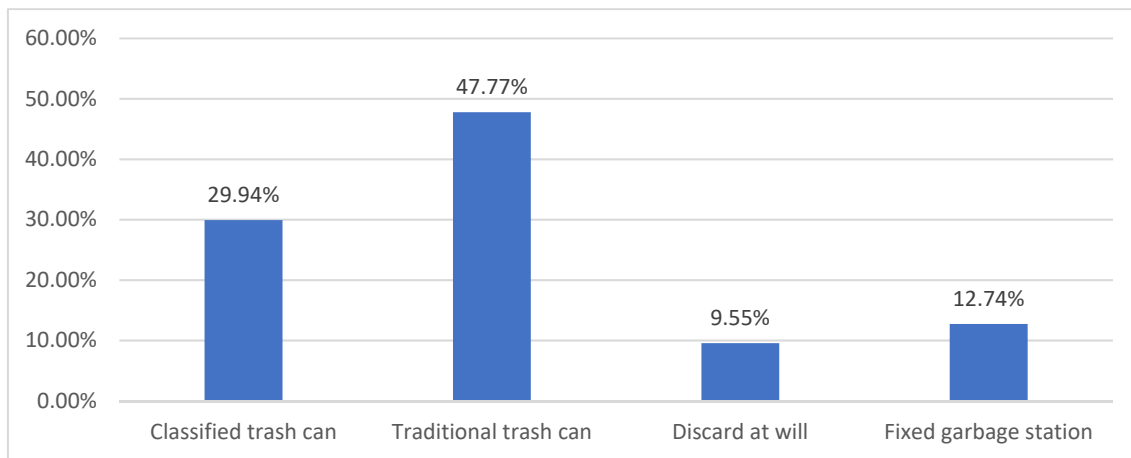


Figure 3. Form of garbage delivery point in living area

According to Figure 4, the current situation of garbage classification in residents' areas is that most people do not throw garbage according to classification, accounting for 47.77%, a few people throw garbage according to classification, accounting for 31.85%, all throw garbage according to classification, accounting for 16.56%, and have never seen it, accounting for 3.82%. It can be seen that even in areas with complete waste facilities, there is still the phenomenon of littering, which has a serious impact on the classification and treatment of domestic waste. The author will further explore the reasons later.

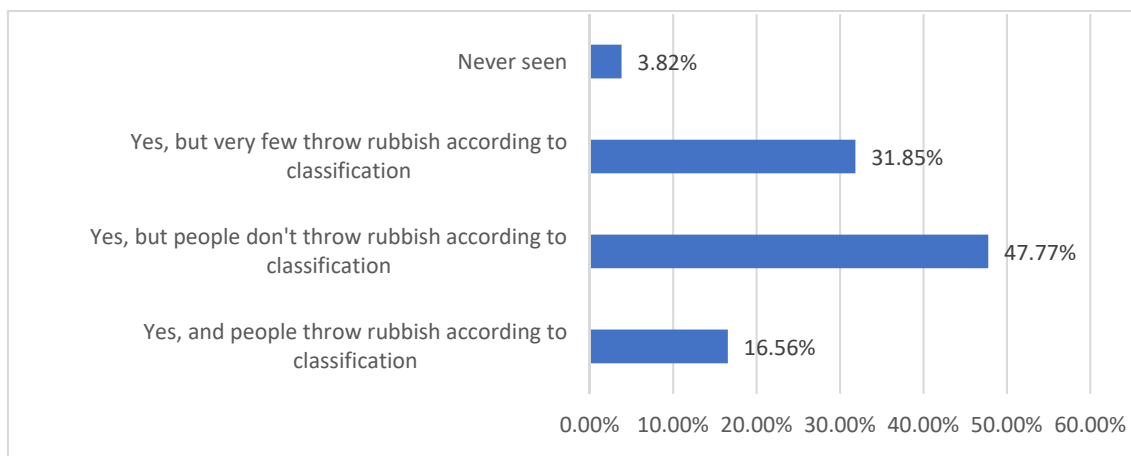


Figure 4. Current situation of garbage classification in the area

3.2. Analysis on Residents' Awareness of Domestic Waste Classification in Anshan City

According to figure 5, the residents of Anshan City have a better understanding and basic understanding of the documents issued by the state, such as the notice on publishing pilot cities for classified collection of domestic waste, and few have little, no or very good understanding; The knowledge sources of domestic waste classification and treatment mainly come from news media public service advertisements, online media publicity, television broadcasting, newspapers and books, and the rest account for relatively little. It can be seen that in the era of

big data, affected by new media and other means, residents have a relatively high understanding of the policy of classified treatment of domestic waste.

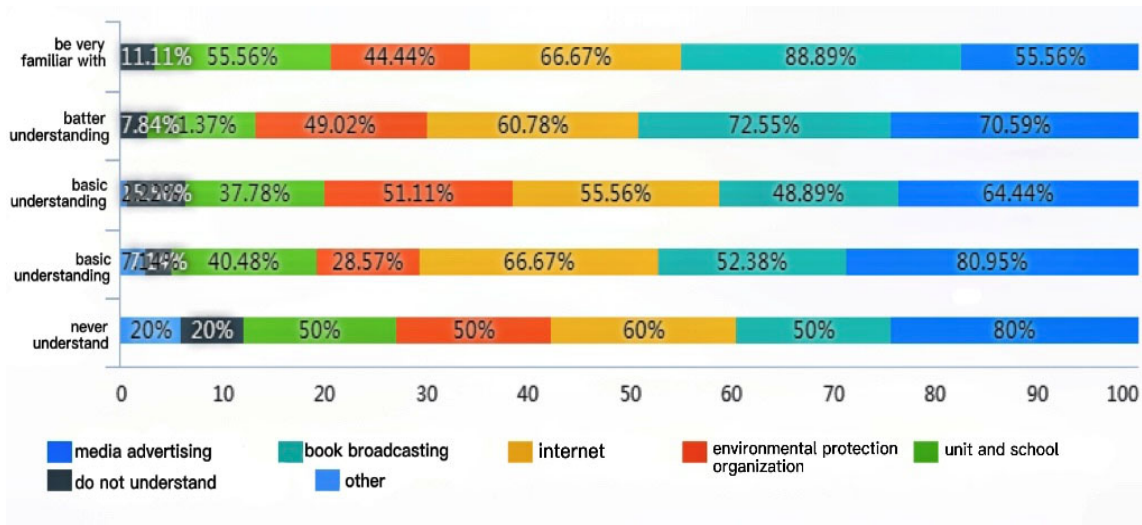


Figure 5. cross analysis of residents' understanding of classified treatment of domestic waste and its sources

According to figure 6, and figure 7, the two questions are objective test questions. The question in Figure 3.6 is what four categories of domestic waste can be divided into. The correct answer should be recyclable waste, kitchen waste, hazardous waste and other waste. There are 157 valid questionnaires and only 22 correct answers; Figure 3.7 the question is what kind of garbage egg shells belong to. The correct answer should be kitchen waste, and 81.53% of them answered correctly. It can be seen that Anshan residents think they have a better understanding of the classification and treatment of domestic waste, but in fact, people only have a clear understanding of the more daily and simple classification, while the non daily or difficult classification is not clear enough in terms of definition.

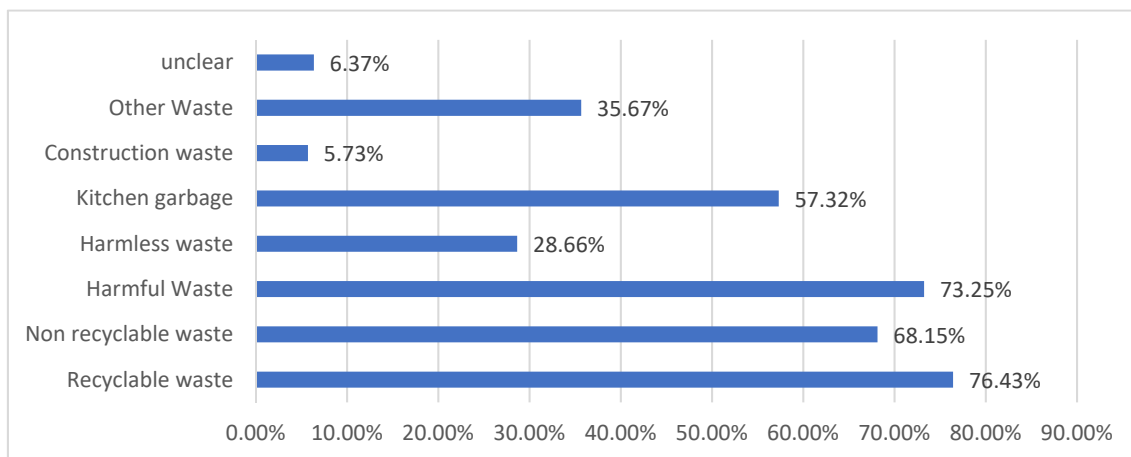


Figure 6. What are the four categories of domestic waste

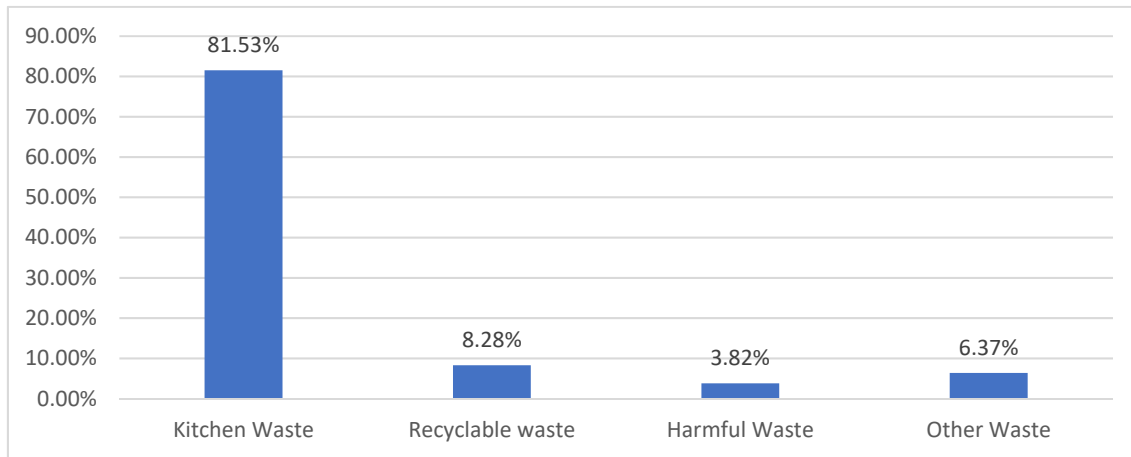


Figure 7. What kind of garbage does egg shell belong to

According to figure 8, Anshan residents believe that failure to classify domestic waste will pollute the living environment, waste resources, pollute water sources, pollute air and occupy land, and people will also carry out special classified treatment of waste batteries and chemical wastes. It can be seen that Anshan residents are well aware of the harm of garbage and are willing to classify and treat domestic garbage.

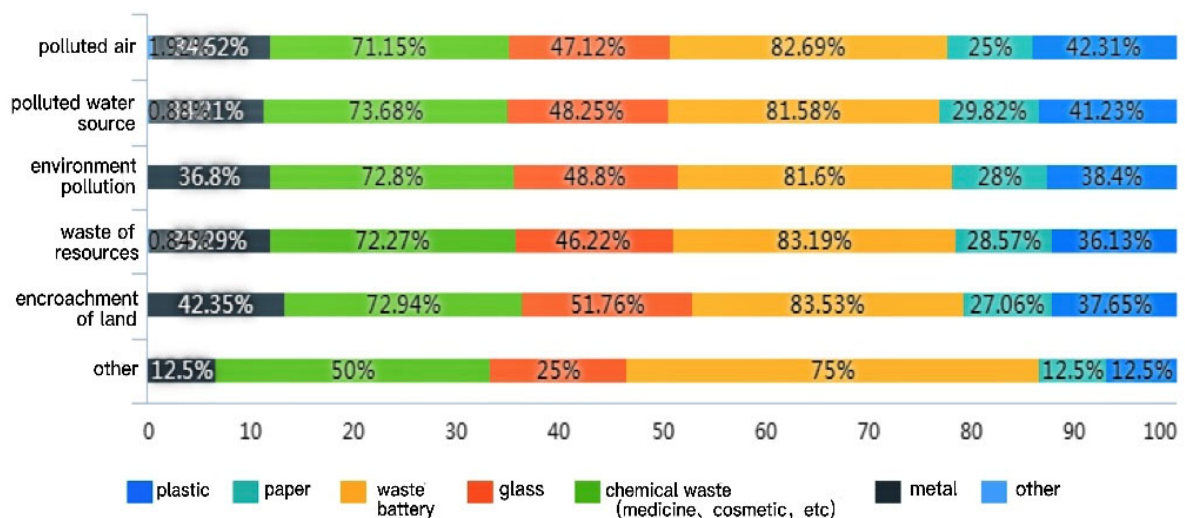


Figure 8. Cross analysis of impact of unclassified domestic waste of various types

3.3. Analysis of Factors Affecting the Classification of Domestic Waste in Anshan City

According to figure 9, generally speaking, Anshan residents are not optimistic about the role of classified garbage cans in garbage classification. The older they are, the less confident they are about the role of classified garbage cans in domestic garbage classification. The younger they are, the more confident they are about the role of classified garbage cans in domestic garbage classification, It not only shows that young people are more likely to accept new things and contribute to the society, but also shows that there are shortcomings in the process of waste classification, which will lead to people's loss of confidence, and relevant organizations and institutions need to be further improved.

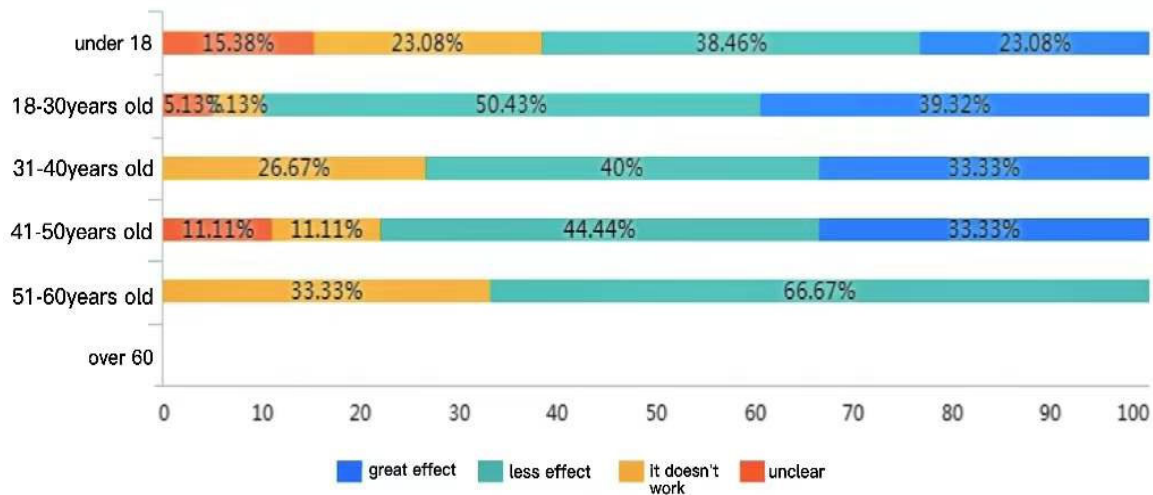


Figure 9. Cross analysis of views of different ages on the role of waste classification

According to figure 10, the residents of Anshan City think that waste emitters should play the largest role in waste classification and recycling, accounting for 69.43%, followed by relevant functional departments and publicity media, accounting for 59.87% and 50.32%, and finally sanitation workers and community propagandists, accounting for 45.22% and 40.13%. It can be seen that in line with the principle of "who pollutes, who controls", Anshan residents are aware of their responsibilities and obligations for waste classification, and also expect relevant functional departments and publicity media to play a role in realizing the common treatment of waste in the whole society.

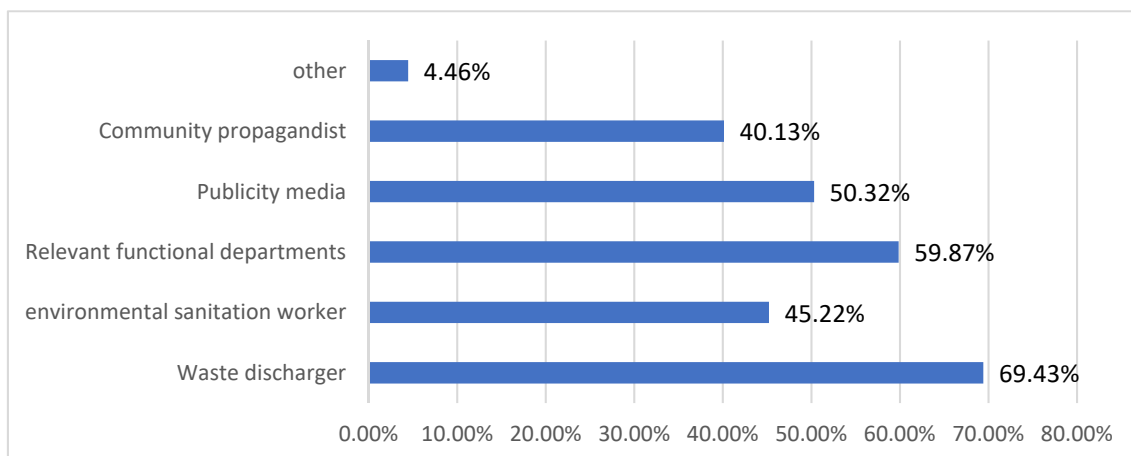


Figure 10. Which group should play the largest role in waste classification and recycling

3.4. Analysis of Suggestions for Improving the Classification of Domestic Waste in Anshan City

It can be seen from figure 11, that the top three categories of waste classification should be "improving waste classification storage, transportation and treatment facilities", "introducing corresponding laws and policies, strengthening education and publicity" and "raising public awareness of environmental protection and learning environmental protection knowledge", accounting for 75.16%, 68.15% and 62.42% respectively, followed by "ensuring the provision of sufficient human, material and financial resources" "Strengthening the supervision of government departments" accounts for 59.87% and 49.68% respectively. It can be seen that

waste classification should make joint efforts from the government, law, society and the public in order to make domestic waste classification go on better and create our green home together.

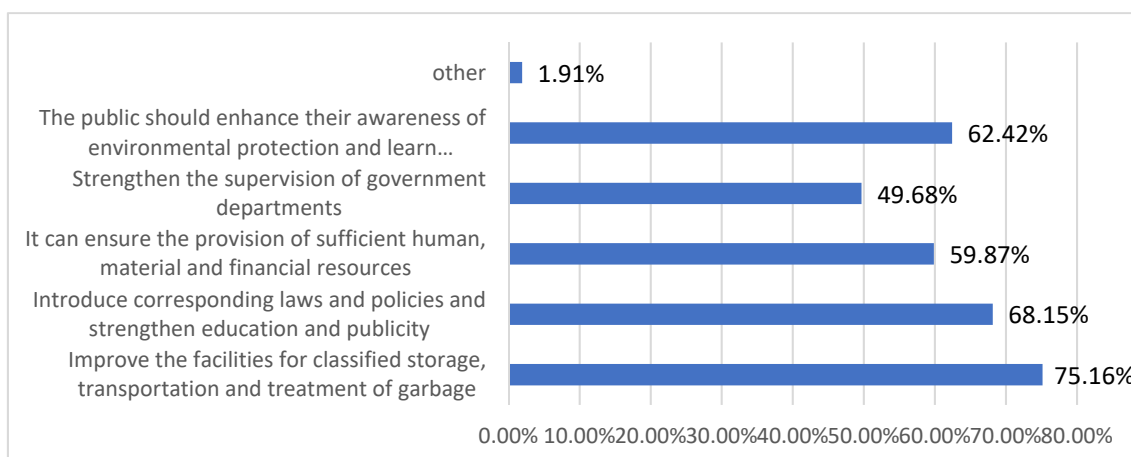


Figure 11. Suggestions for improvement of waste classification

4. Existing Problems and Countermeasures

4.1. Existing Problems

4.1.1. Single Policy Tool

Since Beijing, Shanghai and Guangzhou were listed in the first batch of pilot cities for domestic waste classification in 2000, the state has successively put forward policies for domestic waste classification in various places, but the policies and measures are similar. The rewards are mainly points exchange and commendation, and the penalties are mainly fines of corresponding amounts, According to the 《Law of the people's Republic of China on the prevention and control of environmental pollution by solid waste 》, formulate the 《Regulations of Anshan Municipality on the classified administration of domestic waste》. Effective from October 2021, the administrative regulations list the penalties for violation of the regulations in many aspects, such as "if domestic garbage is not classified and put into the designated collection points or collection containers, the unit shall be fined not less than 5000 yuan but not more than 50000 yuan; and the individual shall be fined not less than 50 yuan but not more than 200 yuan". These punishment measures will have a certain guiding effect, but they can not fully restrict residents' behavior in practical action, and it is difficult for residents to develop good classification habits for a time [1].

According to the survey data, the effect of domestic waste classification in Anshan City is not satisfactory. There are not only the reasons why the domestic waste classification facilities are not perfect, but also the phenomenon that residents still litter when the domestic waste classification settings are perfect. It also shows that the policy tools of domestic waste classification in Anshan City should be adapted to local conditions and can not be equal.

4.1.2. One Sided Publicity and Guidance

It is not slogans to publicize and guide residents to classify domestic waste. Nowadays, most of the publicity of domestic waste classification in Anshan city adopts banners and posters. Although the coverage in Anshan City is very high, the publicity effect is general in practice. The four categories of domestic waste classification, as the basis and premise, should be the knowledge that everyone should master, However, according to the survey data, only 14.01% of the people answered correctly. It is far from enough that the publicity of domestic waste classification still stays at the stage of calling on people to participate [2].

4.1.3. Participants Are Passive

At present, China's domestic waste classification is dominated by the government. Residents are willing to classify waste and understand the harm of not classifying waste, but their performance in practical action is not satisfactory. The survey data show that 73.89% of residents agree with the policy of implementing domestic waste classification, However, in places with sound waste classification facilities, 47.77% of people did not put waste according to the classification standards. It further shows that the residents are still in the attitude of staying out, their own will is contrary to their actual actions, they do not really participate in it, and they lack the spirit of ownership.

4.2. Improvement Strategy

4.2.1. Give Play to the Leading Role of the Government

On the one hand, while carrying out the pilot work, Anshan Municipal government should achieve the whole chain and scope. The whole chain refers to the domestic waste classification in Anshan City. The source classification, collection and transportation and terminal disposal facilities of waste classification must be closely connected. Otherwise, once the middle of the chain breaks, all previous efforts will be wasted, and residents will question the significance of domestic waste classification and even lose confidence, Affecting the normal progress of domestic waste classification in Anshan City [3]. Full scope means that the classification of domestic waste in Anshan City should be fully covered as far as possible and promoted step by step in a planned way. For example, the pilot work can be started from government organs, schools and enterprises, then the relevant work can be carried out to new residential areas, and finally the popularization and promotion of old residential areas can be carried out. Try to include everything, so as to minimize the avoidance effect and dissatisfaction of Anshan residents in the process of domestic waste classification, assume their own responsibilities and jointly build a beautiful Anshan and a beautiful China.

On the other hand, Anshan Municipal government adopts diversified policy tools to promote the classification of domestic waste. Reward and punishment measures should vary from person to person. For example, the reward for the elderly can use points to exchange quantitative rice flour, grain and oil, change the bonus into commodities loved by the elderly, and apply the right medicine to attract the elderly to participate in waste classification; For enterprises, institutions, schools and properties, medals are awarded in the form of mobile red flags to stimulate everyone's collective sense of honor and work together to promote the classification of domestic waste. Negative incentives can be used to punish young people by means of regular and compulsory sanitation, so that young people can learn the significance of domestic waste classification in practice and urge others to classify waste at the same time; For adults, punishment can be associated with personal credit, which can make people more serious about the classification of domestic waste, and also strictly demand themselves and restrict the people around them [4].

4.2.2. Give Play to the Synergy of Society

On the one hand, we should optimize the publicity content and methods. The top priority of waste classification is to popularize the publicity and education of waste classification standards. The publicity content should not be limited to slogans and basic classification knowledge. The publicity methods should also keep pace with the times. In addition to traditional education lectures and poster publicity, it should also cater to people's love for self media and shoot creative short videos of waste classification Edit the film clips of the harm of garbage siege, track and report the whole process documentary of garbage classification, or invite everyone to visit the publicity activities of garbage treatment, and combine online and offline to arouse people's sense of responsibility and crisis awareness, so as to jointly promote the publicity and education of domestic garbage classification.

On the other hand, we should strengthen publicity. We must not be stingy in the publicity and education of waste classification, because waste classification is a matter of benefit for the present and the future, and the whole society should take action. The government shall allocate special funds for domestic waste treatment and give material rewards to units or individuals with excellent performance in the process of waste classification; The enterprise shall print and distribute garbage classification standards and relevant knowledge on the commodity, such as printing garbage classification standards on the packaging of dairy products and highlighting that the product belongs to recyclables; Schools should set up educational courses on waste classification, hold blackboard newspaper evaluation activities on domestic waste classification and display waste classification knowledge boards, so that students can be imperceptibly familiar with domestic waste classification; Social welfare organizations can also carry out publicity and education lectures in communities or schools or organize volunteer teams to help guide residents to classify domestic waste.

4.2.3. Give Full Play to the Main Role of the Public

The government should play a positive and negative incentive role to help encourage and restrict residents to classify domestic waste [5]. In the process of implementation, we should respect the voice of residents, do a good job of full investigation and soliciting opinions before the implementation, do a good job of two-way communication with residents during the implementation, and do a good job of subsidies in case of loss of residents' interests [6]; The community should also take the responsibility to integrate waste classification into community management, and guide and help residents to classify waste; Finally, the most important thing is for individual residents to start with dolls and instill the knowledge and significance of waste classification into children. Adults should also bear the responsibility to set an example, supervise each other and build a better home. It is the common goal of our 1.4 billion people. As long as we work together, our desire for clear water, blue sky and pure land will eventually be realized.

5. Summary

The implementation of waste classification is not only related to the living environment of the broad masses of the people and the economical use of resources, but also an important embodiment of social civilization. The revolution of domestic waste classification in Anshan City has not been successful. In practice, there are problems of single policy tools, one-sided publicity and guidance and passive participants. It also needs the continuous efforts of the government, society and the public to give play to their leading, collaborative and main role. The actual effect of multi-agent collaborative governance still needs to be tested in practice. There may be problems such as insufficient data and immature suggestions in this paper. I will continue to study relevant knowledge, pay attention to the promotion of domestic waste classification in Anshan City, and strive to make suggestions for it.

Acknowledgments

This achievement is the phased research result of "Anshan Municipal solid waste Classification problem and Countermeasure Research", which is the key research project of philosophy and social science in Anshan City in 2021. The project number is as20212047.

References

- [1] Fan Wenyu, Xue Liqiang Why the previous domestic waste classification has little effect -- Also on the system construction in the era of compulsory classification [J] Exploration and contention, 2019 (08): 150-159 + 199-200. (in Chinese)

- [2] Zhang Jianghai Analysis on the path of multi subjects cooperating to promote the classified treatment of domestic waste -- Taking Xiamen as an example [J] Journal of Fujian agriculture and Forestry University (PHILOSOPHY AND SOCIAL SCIENCES EDITION), 2019,22 (06): 93-98. (in Chinese)
- [3] Tao Xiangsheng Study on the current situation and Countermeasures of municipal solid waste classification in Chongqing [D] Chongqing University, 2016. (in Chinese)
- [4] Su Chunyan, Yu Xin Study on classification of municipal solid waste [J] Journal of Liaoning University of administration, 2020 (03): 63-67. (in Chinese)
- [5] Ye Lin, Du lianfan, Guo Yiwu Why did the policy of municipal solid waste classification change from guidance to compulsion—— From the perspective of policy tools [J] Journal of Tianjin University of administration, 2021,23 (01): 33-45. (in Chinese)
- [6] Bi Xuecheng Dilemma and solution of municipal solid waste classification: from the perspective of residents' community participation [J] Ningxia Social Sciences, 2020 (04): 114-122. (in Chinese)