IMPACTS OF ENVIRONMENTAL POLLUTION BEHAVIORS ON MENTAL HEALTH EMOTIONS AND RELEVANT COUNTERMEASURES

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Abstract

Environmental pollution behaviors pose a serious threat to the daily life and health condition of residents. This paper aims to identify the impacts of environmental pollution behaviors on mental health emotion and put forward effective countermeasures. First, the status quo of environmental pollution in China and the decision-making behavior were discussed, and the necessity of mental health emotion analysis was highlighted. Then, an empirical study was conducted on how environmental pollution behaviors affect mental health emotion. The environmental pollution behaviors and mental health emotion were respectively measured by air pollution and death rate of population. The results show that environmental pollution behaviors suppress the mental health emotion by speeding up the depletion of health capital. On this basis, several management measures were put forward for mental health emotion, including the construction of emergency system, early warning system, assessment system, supervisory system, credit system and insurance system. The research results provide new insights into the control of environmental pollution and the promotion of mental health.

Key words: Environmental Pollution Behaviors, Happiness, Mental Health Emotion, Emergency System, Credit System.

INTRODUCTION

The environmental pollution behaviors of the people directly lead to the aggravation of environmental problems, which not only reduces the quality of people's daily life, but also reduces the health level of people (Sui, Liu, Jia et al., 2018). The individual behaviors are the basis of the overall trend, and the individuals' environmental pollution behaviors will cause an aggregate effect on the environmental pollution. Similarly, environmental pollution behaviors have an aggregate effect on the mental health of the people (Shriver, Cabrera, & Illes, 2017). Emotion, as an important part of people's psychological activities, is widely used in

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psychology. Furthermore, emotion is an important factor affecting people's life and work. People's mental health emotions are easily affected by environments (Shultz, Rechkemmer, Rai et al., 2018; Joyce & Clark, 2018). The mental health emotional problems we study generally include three areas: emotional experience, personality characteristics, and social organization system, which are mainly the impacts of positive effects on mental health emotions (Breland-Noble, 2013).

People's mental health emotions are influenced by environment, society, economy or events, and are closely related to behavioral psychology and economic psychology. Research on mental health and emotional problems is still foreign-oriented (Regina & Nunes, 2017). Both negative and positive events have an impact on people's mental health and emotions, and emotion expression includes four dimensions such as the frequency of emotion expression, concentration of expressing rules,

diversity of emotion expression and emotion disorder. Different events express different dimensional components and proportions (Coley, Lynch, & Kull, 2015; Bourke-Taylor, Pallant, Law et al., 2012). At present, the research on people's mental health emotion mainly focuses on the positive effects brought about by the positive environment, and limited to these positive effects, there is no research on the emotional impact of negative behaviors such as environmental pollution (Holden, Mcgregor, Blanks et al., 2012). Based on the environmental pollution behaviors, this study probes into the impacts of environmental pollution behaviors on mental health emotion, and puts forward the corresponding management measures to regulate the mental health emotion of the people. This study provides a theoretical basis for the impacts of environmental pollution behaviors on people's mental health emotion.

STUDY ON THE STATUS QUO OF ENVIRONMENTAL POLLUTION AND THE PEOPLE' BEHAVIOR DECISION-MAKING

The environmental protection behaviors are an important behavior decision-making. The people's environmental protection behaviors are influenced by people's subjective consciousness. The effect of environmental pollution behaviors on public environmental protection behaviors is achieved by enhancing the environmental awareness or perception of the people (Miller, Cater, Howell et al., 2014). Environmental pollution behaviors have a great impact on people's mental health emotion, and the environment in which the people live is polluted, which is bound to be met with psychological antipathy (Crombie, Stansfeld, & Clark,

2011). Environmental pollution behaviors can generally affect people's psychological perception, and the mental health status is restricted by the degree of pollution, the type of pollution, the level of public education and public opinion (Sansom, Parras, Parras et al., 2017). Environmental pollution behaviors affect people's mental health emotion as well as their behavior decision-making (Mills, King, Watts et al., 2013).

Environmental pollution behaviors affect people's life comfort, reduces people's utility level, changes people's expectation on the future life, and thus causes people to generate the emotional reaction, which affects the physical and mental health. At present, environmental pollution behaviors are mainly analyzed by means of theory of planned behavior.

Figure 1 is a model diagram of theory of planned behavior, and people's attitude controls people's behavior perception, thereby determining people's behavior intention. Environmental pollution behaviors may affect the physical and mental health of the people, thereby accelerating the migration and incidence of the people in the areas affected by environmental pollution. Figure 2 shows the impacts of environmental pollution behaviors on the decision-making of the people, which includes the pushing force and pulling force. The pushing force of the people' decision-making includes impacts on the people' physical and mental health, increase in the people' living cost, reduction in the people' employment opportunities, generation of social conflicts and impacts on social order while the pulling force includes constraints on the potential benefits of the current residence, expectations on environmental governance, and residential inertia and migration costs.

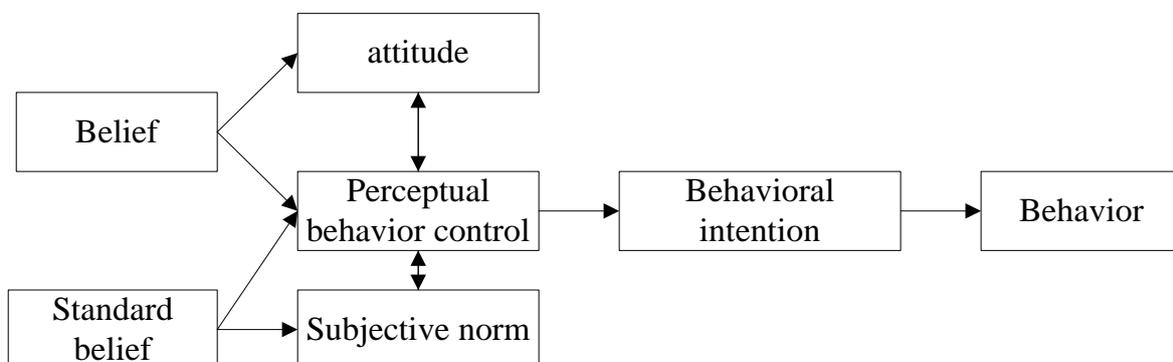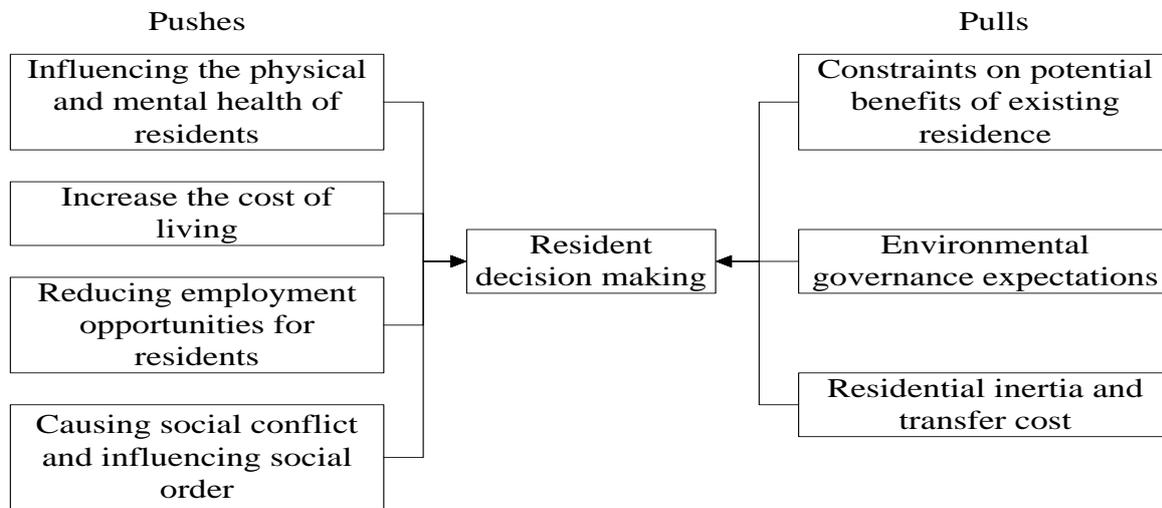*Figure 1*. **Model diagram of theory of planned behavior**

Figure 2. **The impact of environmental pollution behaviors on the people's decision-making**

Pushes

Pulls

| Influencing the physical and mental health of residents | | Constraints on potential benefits of existing residence |

| Increase the cost of living | | Environmental governance expectations |

| Reducing employment opportunities for residents | Resident decision making | Residential inertia and transfer cost |

| Causing social conflict and influencing social order | | |

ANALYSIS ON THE NEEDS FOR THE APPLICATION OF MENTAL HEALTH EMOTION ANALYSIS

Analysis on feasibility and demand

People's mental health emotion can be divided into positive emotion, neutral emotion and negative emotion. However, people's emotion on environmental pollution behaviors can be divided into two types, neutral emotion and negative emotion. With the help of neural network algorithm, high-efficient and high-precision recognition of mental health emotion can be realized, so as to formulate effective measures to improve the mental health level of the people. By means of neural network algorithm, the storage, modification and query of all information of the people are realized, and the normal emotion recognition function of the whole application is realized by the server. As a tool for people's emotion recognition, C-Bil model, as the core model of mental health emotion application, can not only realize the accurate recognition of emotion, but also improve the accuracy of emotion recognition.

General framework design for the application of mental health emotion analysis

In order to reduce the mutual visit between the clients of the application program and the data resource and reduce the memory occupation, according to the general demand analysis of the mental health emotion of the people, this study uses the three-tier separated architecture mode of clients, load balancer and background server as shown in Figure 3 for the general framework design of mental health emotion, and the three-tier architecture mode has clear boundaries and clear correspondence. The server of mental health emotion analysis and recognition is mainly composed of load balance module, professional evaluation module, psychological science module and emotion recognition module. Figure 4 is a framework diagram, after the environmental pollution behaviors occur, people can send a request to the front-end controller, invoke the business object to the model by entrusting the request to the processor, and finally generate a corresponding response to the people by the return control.

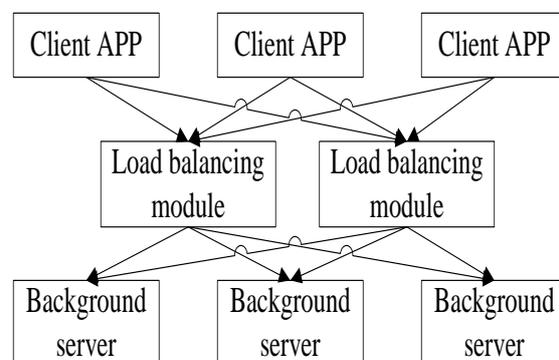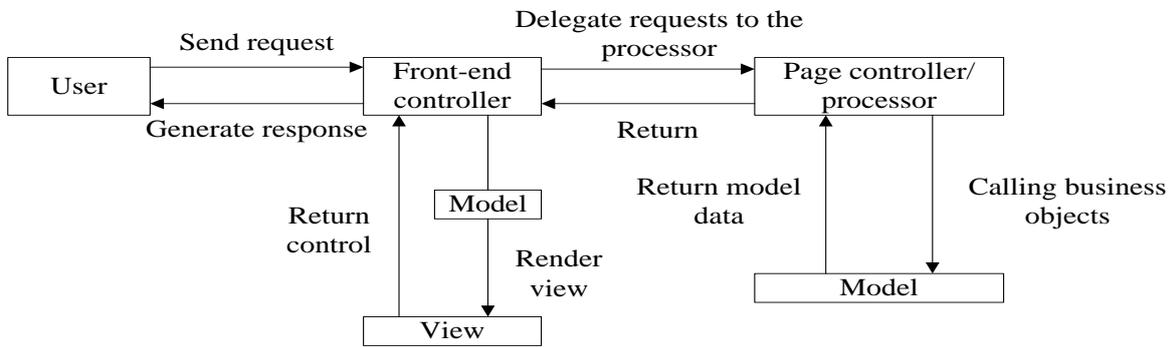*Figure 3*. **Design of the general framework of mental health emotion**

| Client APP | Client APP | Client APP |

| Load balancing module | Load balancing module |

| Background server | Background server | Background server |

Figure 4. **Framework diagram**

STUDY ON IMPACTS OF ENVIRONMENTAL POLLUTION BEHAVIORS ON PEOPLE'S MENTAL HEALTH EMOTION

Mechanism analysis of impacts of environmental pollution behaviors on people's mental health emotion

The environmental pollution behaviors have strong exogenous determinacy and overflow, with the air pollution as the most serious, and the environmental pollution can alleviate the endogenous problems to a certain extent. Environmental pollution accelerates the rate of depreciation of people's physical and mental health, and has a negative impact on the people' mental health emotions. Taking the mental health capital of the people as the research object, each person has a certain stock of healthy capital at first. The healthy capital stock gradually decreases with the acceleration of time, and the environmental pollution behaviors act on the public's mental health emotion in a negative state, and accelerates the depreciation speed of the healthy capital stock, that's, environmental pollution behaviors affect the mental health of the people through the acceleration of health capital reduction.

Empirical study on impacts of environmental pollution behaviors on people's mental health emotion

Figure 5 shows the statistics of air quality in 2008 and 2018. It can be clearly seen that the proportion of days with excellent air quality in 2018 is obviously smaller than that in 2008, and the proportion of days with light pollution is greatly increased, indicating that air quality is declining and environmental pollution behaviors gradually increase, which seriously affects the physical and mental health of the people. Table 1 shows the loss of life expectancy of the people, which clearly shows that the life

expectancy of the people in the clean environment is larger, and the loss of life expectancy gradually decreases with the increase of age.

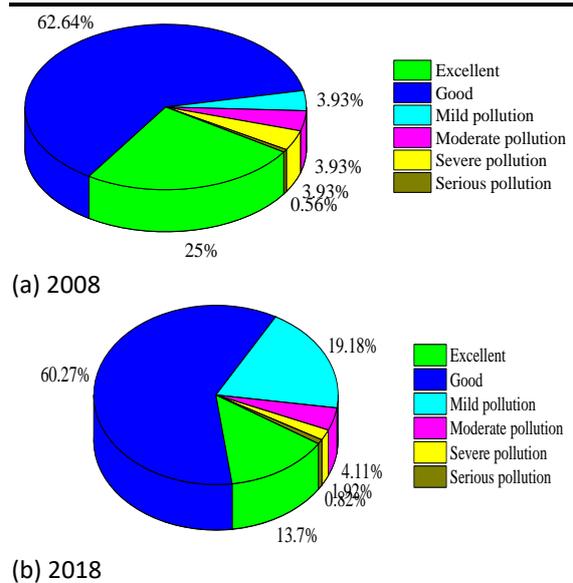*Figure 5*. **Air quality statistics for 2008 and 2018**

(a) 2008

(b) 2018

Table 1. **Loss of life expectancy in population**

Age grouping	Life expectancy /year	Life expectancy in a clean environment/year	Life expectancy loss
1-	79.19	80.47	1.28
10-	70.41	71.67	1.26
20-	60.54	61.78	1.24
30-	50.72	51.95	1.23
40-	41.03	42.23	1.20
50-	31.63	32.78	1.15
60-	22.68	23.75	1.07
70-	14.74	15.68	0.94
80-	8.76	9.54	0.78
>80	7.76	8.49	0.73

Figure 6. **Statistical scale of environmental pollution behaviors and people's psychological emotion in China**
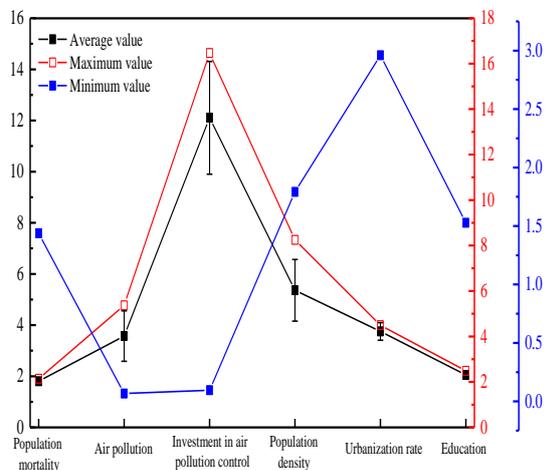
Figure 7. **Regression value of influencing factor data**
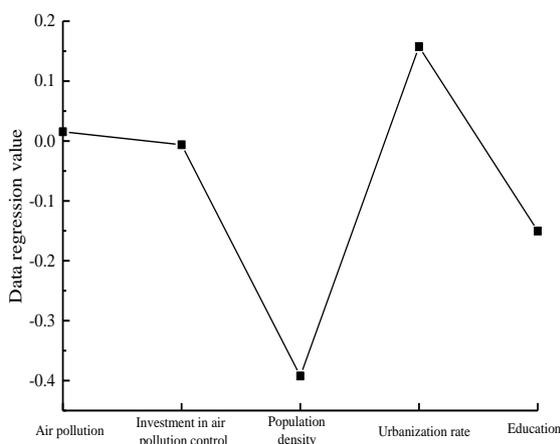
In order to explore the effect of environmental pollution behaviors on people's mental health emotion, this study takes the death rate of population as the measure index of mental health emotion and air pollution as the measure index of environmental pollution behaviors, selects such influencing factors as investment amount, population density, urbanization rate and education years of environmental pollution control. Figure 6 is a statistical scale of environmental pollution behaviors and people's mental emotion in China. It can be clearly seen that the average value and the maximum value of each behavior and mental health

emotion of the people show the same change rule. Figure 7 shows a regression of each influencing factor data, and it is obvious that air pollution is harmful to the health of the people, with significant influence, and there is a negative correlation between population density and educational factors and mental health emotion, which indicates that educational factors can reduce environmental pollution behaviors.

**Management measures of people's mental health emotion**

In general, the causal relationship between the environmental pollution behaviors and the mental health emotion of the people shows that the environmental pollution behaviors have a negative impact on the mental health emotion of the people, and the mental health emotion increases with the increase of the pollution behaviors. But whether the cause-effect chain only affects the physical and mental health still exists fuzziness. The positive mental health emotion is the premise of the high quality life, the damage of environmental pollution behaviors to the mental health damage is far more than the material damage. Moreover, the environmental pollution behaviors and the people's life quality show the direct relationship. In order to manage people's mental health emotion more healthily, this study presents the mental health emotion management system. Figure 8 shows the construction of the mental health emotion management system, including the construction of emergency system, early warning system, assessment system, supervisory system, credit system, insurance system, etc.

CONCLUSIONS

Based on the environmental pollution behaviors, this study probes into the impacts of environmental pollution behaviors on mental health emotion, and puts forward the corresponding management measures to regulate the mental health emotion of the people. The concrete conclusions are as follows:

(1) Environmental pollution behaviors affect the people's life comfort, reduces people's utility level, changes people's expectation to the future life, and thus causes people to generate the emotional reaction, which affects the physical and mental health.

Figure 8. **Construction of mental health emotion management system**
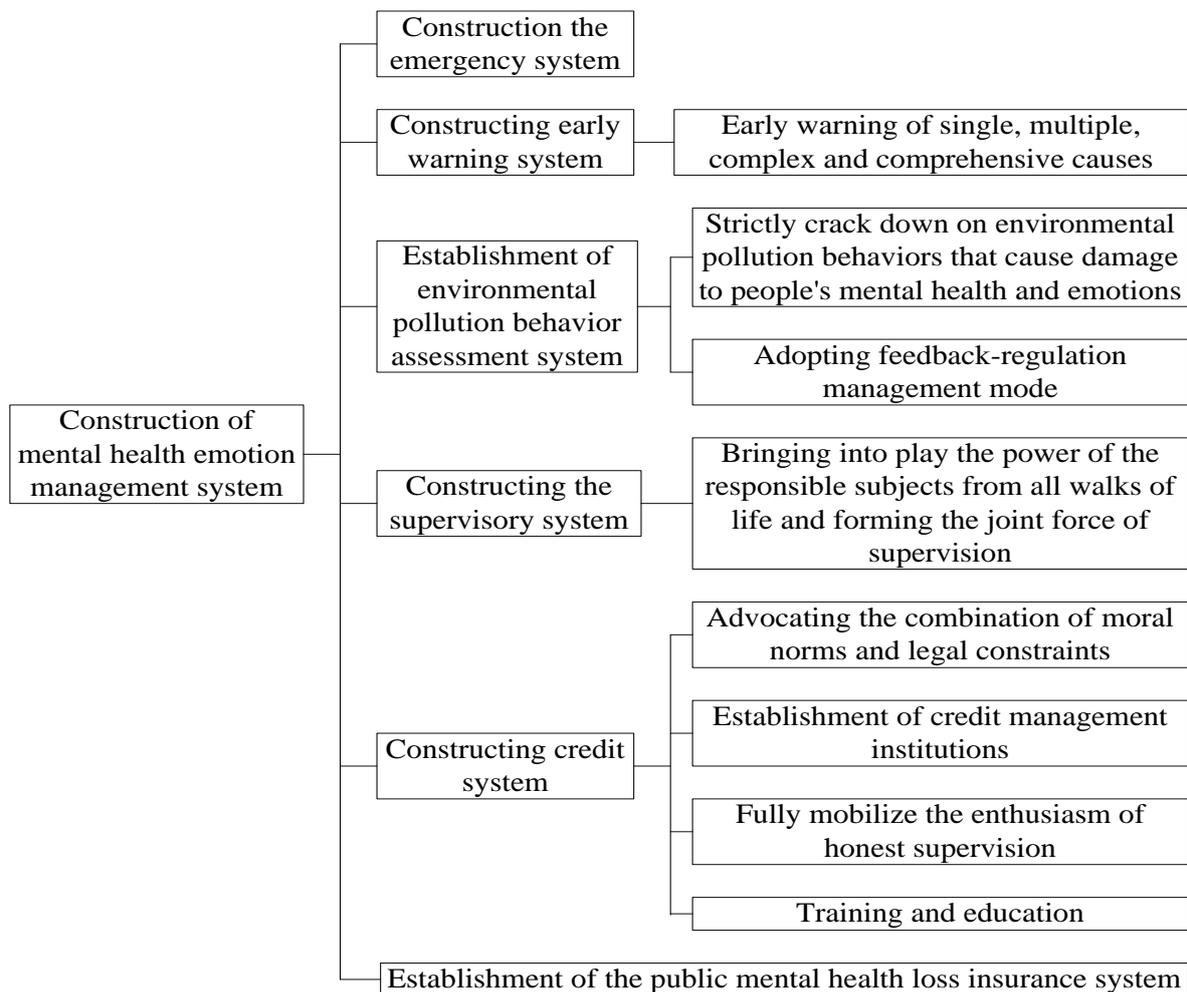
(2) Environmental pollution behaviors accelerate the rate of depreciation of people's health and mental health capital, and has a negative impact on the people' mental health emotion. Environmental pollution behaviors affect the people' mental health through accelerating health capital reduction.

(3) The average value and the maximum value of each behavior and mental health emotion of the people show the same change rule, air pollution is unfavorable to the health of the people, and the impact is significant. There is a negative correlation between population density and educational factors and mental health emotion.

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