An Empirical Analysis on People's Satisfaction and Expectation towards the Environment in Rural China

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Abstract

This paper aims to clarify the status and features of environmental consciousness in rural China by focusing on analyzing people's satisfaction towards the environment and expectation towards the environmental change. Analysis results based on the 508 cases that collected from 51 villages in Ningyang county indicated that people in rural areas were holding positive evaluations towards the environment as well as on their lives. People in rural areas were satisfied with the present environmental quality and were more likely to hold a positive expectation towards the future environmental change.

Keywords: Environmental consciousness, Social survey, Rural-urban comparison

1. Introduction

Western-focused studies indicated that urban residents are more likely to be environmentally concerned than rural residents, since urban residents generally are exposed to higher levels of pollution and other types of environmental deterioration (Tremblay and Dunlap, 1978). However, in present China, urban areas have stricter environmental regulations while in rural areas the regulations remain loose, which lead polluting industries and firms move to rural areas.

In the past few decades, rural areas of China have experienced a remarkable economic growth which significantly improves the welfare of the people in rural areas. However, the economic growth to some extent was derived at the cost of environmental deterioration. Environmental quality in rural China is keeping worsen. Small polluting firms are becoming prevalent in rural areas, household waste greatly increased, and traditional life style and production mode (such as straw burning or unclean cooking energy) are making the rural environmental situation even worse. Under this background, people's environmental concerns and evaluations to these changes in rural areas are the author's concerns.

Environmental consciousness is a subjective judgment towards the environment which is determined by personal cognition and experiences. However, individuals are living in a society where different attitudes towards environmental issues interact. One's environmental evaluation is inevitably affected by other people and hence represents a social facet. The long-time institutional, economic, and social segmentation make rural China becomes a distinctive society from the city (Knight & Song,1999; Chen, 2016). The remarkable distinctions between rural and urban societies, makes the evaluation of environmental consciousness in rural context become an imperative.

This paper focuses on rural residents' evaluations and expectations towards the environmental quality and its change, and tries to clarify the status and features of environmental consciousness in rural China.

2. Measurement and Method

Studies attempting to measure people's level of concern with environmental problems and environmental quality provided a wide range of indicators of environmental concern, which including "perceiving environmental problems as serious, supporting efforts by government to protect environmental quality, engaging in behaviors aimed at improving environmental quality, etc." (Van Liere & Dunlap, 1980). In this paper, rural residents' satisfaction towards the environmental quality and expectations towards the environmental change were investigated.

In the survey, the respondents were asked "how satisfied are you with the quality of environment in areas nearby, such as cleanness of air and the water, lushness of fauna, and the comfort level of the residence" (see detailed questions items in Chen (2016), Q8a~b). The respondents were also asked to predict the change of several environmental issues, such as air pollution, water contamination, decline in forestry and vegetation, degradation of food safety, increase in the volume of garbage from home and industries (see detailed questions items in Chen (2016), Q9a~f,). Furthermore, to fully understand rural residents' environmental consciousness, satisfaction towards their life, and judgments on subjective social status were also investigated. The detailed questions were as follows:

Q1 (Life satisfaction):

How satisfied are you with your life as a whole now?

1.Satisfied

2.Satisfied somewhat

3.Dissatisfied somewhat

4. Dissatisfied

Q2 (Subjective social status):

If the society in China can be divided into the following 5 social classes, which class do you think you are belonging to?

1. Upper

2. Upper middle

3. Middle

4. Lower middle

5. Lower

The areas selected to conduct the survey in 2014 were located in Ningyang prefecture of Shandong province. Shandong is an agricultural province with a population of more than 100 million. In 2014, the census registered population in Ningyang was 830,000, including 629,000 agricultural households and 202,000 non-agricultural households. The urban per capita disposable income in 2018 was CNY 34,707 and rural per capita net income was 16,086 in CNY. For a reference, the socioeconomic information was shown in Table 1.

Table 1. Socioeconomic development in surveyed areas in 2018

		China	Shandong	Taian	Ningyang
	Administrative level	Average	Provincial level (province)	(Prefectural-level city)	County level (county)
Unit: km2	Total area	9,634,057	157,100	7,761	1,125
	Permanent population	1,395,380,000	100,472,400	5,640,000	773,800
Unit: CNY	Regional GDP (billion)	90,031	7,647	3,652	44.36
	Per capita GDP	64,644	76,267	64,714	57,304
	Urban per capita disposable inco	39,251	39,549	35,196	34,707
	Rural per capita net income	14,617	16,297	16,959	16,086
Unit: %	Regional industrial structure	7.2 : 40.7 : 52.2	6.5 : 44.0 : 49.5	7.8 : 44.2 : 48.0	11.8 : 42.7 : 45.5
	Urbanlization rate	59.58	61.18	61.87	45.31

Note: 1. Data was collected from:
2018 Ningyang national economy and society developed statistical bulletin.
2018 Taian national economy and society developed statistical bulletin.
2018 Shandong national economy and society developed statistical bulletin.
2018 China national economy and society developed statistical bulletin.

A carefully designed questionnaire was used by the investigators to interview the respondents who were scientifically selected from 51 villages: First, a list including all 13 township level districts was prepared. Taking the first district as the starting point, seven towns were selected at an equal interval from the list. Second, 51 villages were proportionately selected based on the population in each village. Finally, based on the designated gender and age categories, 10 individuals in each selected village were chosen (Chen, 2017). People who are 18 years or older and living in the selected 51 villages, were taken as the target population, and finally 508 individuals were interviewed successfully. The distribution of demographic characteristics of collected samples is shown in Table 2.

Table 2. Descriptive statistics of the samples

		Frequency	Percent (%)
Gender	Male	254	50.0
	Female	254	50.0
Age	18~29 years	103	20.3
	30~39 years	99	19.5
	40~49 years	102	20.1
	50~59 years	102	20.1
	60 years and over	102	20.1
Education	Less than one year or none	58	11.4
	Elementary school or no graduation	134	26.4
	Junior high school	200	39.4
	Senior high school or vocational school	111	21.9
	University or graduate school	5	1.0
Income	~10,000 yuan	92	19.3
	10,000 yuan~20,000 yuan	95	19.9
	20,000~30,000 yuan	104	21.8
	30,000~50,000 yuan	120	25.2
	50,000~80,000 yuan	66	13.8

In order to give relative criteria to describe the status of consciousness in rural areas, survey data collected from urban areas (Beijing and Hangzhou) were compared in this paper. Same questions were used in this cross-regional survey. Adult citizens living in Beijing and Hangzhou were selected and 1,000 valid samples in Beijing and 1,011 valid samples in Hangzhou were collected respectively (see the detailed information in Zheng, 2012).

Mosaic displays were used to compare the environmental consciousness in rural and urban areas. The mosaic display is similar to a grouped bar chart, where the widths of the bars show the relative frequencies of one variable, and the heights of the sections in each bar show the relative frequencies of the second variable. The shading patterns are based on standardized residuals the exceed the values 2 and 4 in absolute values. The tile in deep blue indicates a stronger tendency in this combination, whereas tile in deep red indicates that this combination is extremely rare under the hypothesis of independence (Friendly,2000).

3. Results

3.1 Simple Tabulation of Life Satisfaction and Subjective Social Status

Regarding the life satisfaction in three surveyed areas, the responses are shown in Table 3.

Table 3. Satisfaction towards the life

	Rural areas	Beijing	Hangzhou
Satisfied	67.1	46.0	50.5
Satisfied somewhat	28.5	42.4	43.0
Dissatisfied somewhat	2.0	7.3	5.4
Dissatisfied	2.4	4.2	1.1

According to Table 3, most of the respondents in all surveyed areas indicated that they are satisfied with their life. Especially in rural areas, around 67% said that they are satisfied. Together with the percentage of “satisfied somewhat”, there were more than 95% of the respondents in rural areas, and more that 83% of the respondents in urban areas indicated that they are satisfied or

satisfied somewhat with their lives. Only very small part of the respondents indicated that they are dissatisfied.

Regarding the subjective social status in three surveyed areas, the responses are shown in Table 4.

Table 4. Subjective judgements on social status

	Rural areas	Beijing	Hangzhou
Upper	5.0	1.8	0.6
Upper middle	15.5	11.6	13.2
Middle	52.1	50.0	58.4
Lower middle	20.9	27.7	24.0
Lower	6.6	8.8	3.9

According to Table 4, there was 5% respondents believed that they belong to the upper social class and this percentage is higher than in Beijing (1.8%) and Hangzhou (0.6%). More than half respondents in all three areas believed they belong to the middle social class. More than 20% believed they belong to the lower middle social class and there was only very small part of the respondents think that they belong to the lower social class.

3.2 Comprehensive Analysis of Life Satisfaction and Subjective Social Status

During the survey, in order to collect more detailed information about the designed questions, 4 or 5 options were provided. However, in the analysis, the options were combined as following. The options of "life satisfaction" were distributed into "satisfied" and "dissatisfied" categories, and the options of "subjective social status" were distributed into "upper" "middle" and "lower" categories.

Regarding people's satisfaction towards the life, the comparison result between rural and urban areas is shown in Fig. 1.

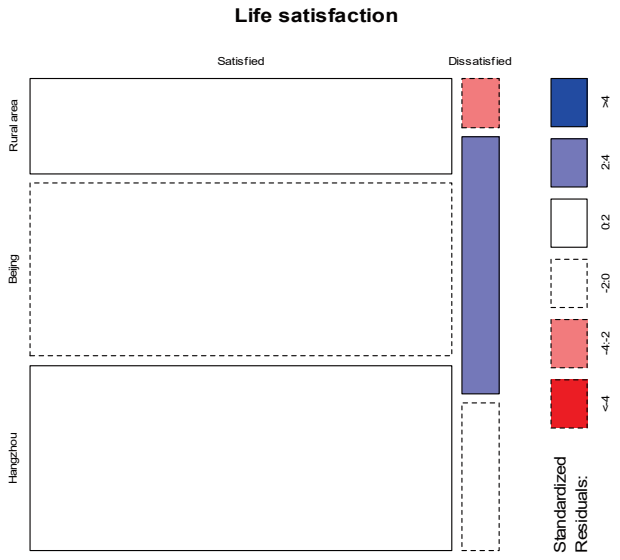

Fig. 1. Rural-urban comparison regarding the life satisfaction

From Fig. 1, the author found no significant difference on the option of "satisfied" among three areas. However, there is a significant lower percentage on the option of "dissatisfied" in rural areas, whereas there were more people in Beijing indicated that they are dissatisfied with their lives.

Regarding people's subjective judgements on their social status, the comparison result between rural and urban areas is shown in Fig. 2.

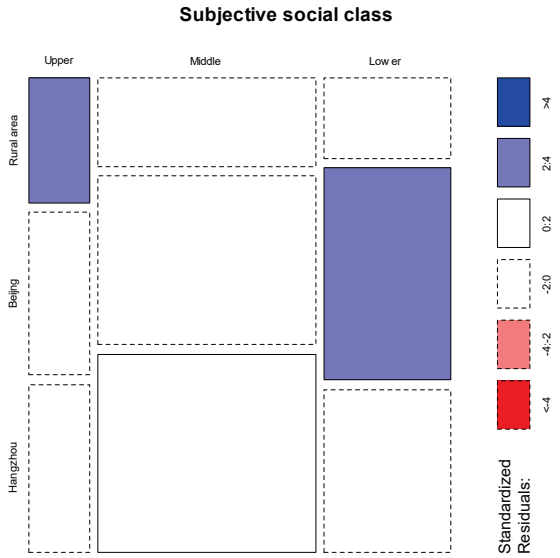

Fig. 2. Rural-urban comparison regarding the subjective social status

According to Fig. 2, there was no significant difference on the option of "middle". However, an interesting finding is that people in rural areas were more likely believe themselves belong to the upper social class, whereas in people in Beijing tend to believe they belong to the lower social class.

3.3 Comprehensive Analysis of Environmental Satisfaction and Expectation

In the analysis, the options of "environmental satisfaction" were distributed into "satisfied" and "dissatisfied" categories, and the options of "environmental expectation" were distributed into "improve", "no change" and "get worse" categories.

Regarding people's satisfaction towards the environment, the comparison results between rural and urban areas are shown in Fig. 3a~d.

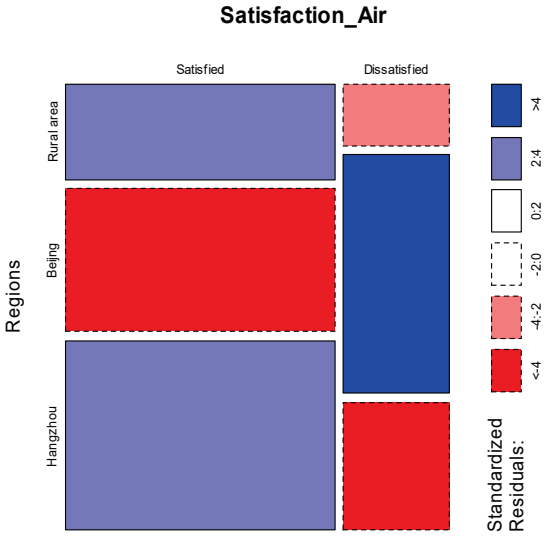

Fig. 3a. Rural-urban comparison regarding the satisfaction towards the environment _Air

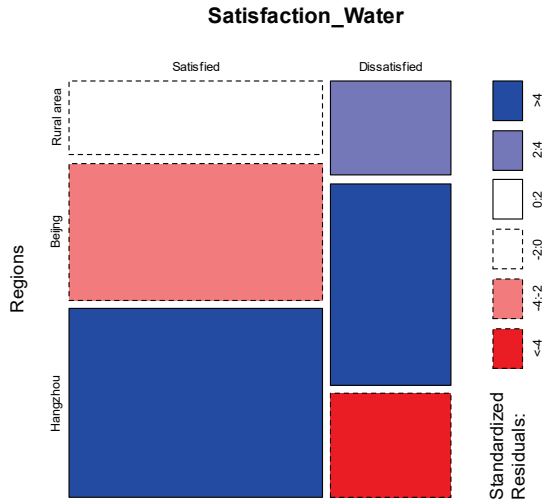

Fig. 3b. Rural-urban comparison regarding the satisfaction towards the environment _Water

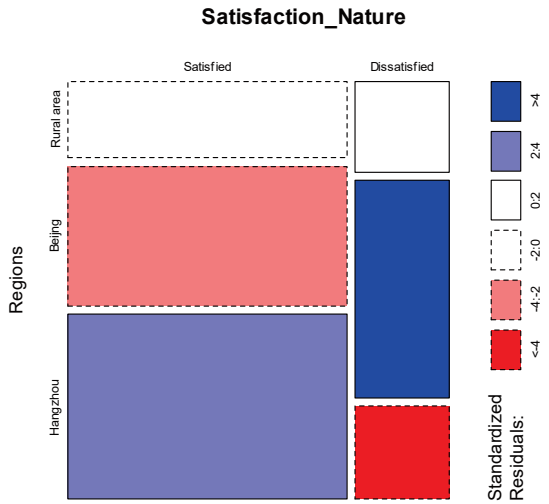

Fig. 3c. Rural-urban comparison regarding the satisfaction towards the environment _Nature

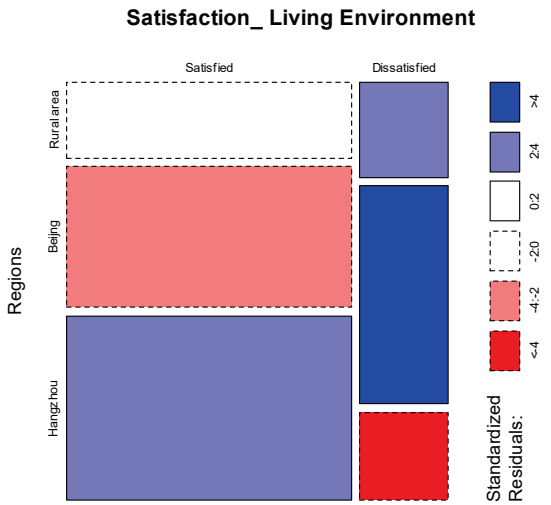

Fig. 3d. Rural-urban comparison regarding the satisfaction towards the environment _Living environment

From Fig. 3a~d, for air purity, the people in rural areas and Hangzhou showed more satisfaction than Beijing residents; for water quality, people in rural areas showed more satisfaction than Beijing residents, while lower satisfaction than Hangzhou residents; For lushness of fauna as well as the comfort level of living environment, people in rural areas showed more satisfaction than Beijing residents, whereas lower than Hangzhou residents. Hangzhou residents generally have higher satisfaction than people in Beijing and rural areas, whereas Beijing residents show a significantly lower satisfaction with all the environmental elements.

Regarding people's expectations towards the environment change in the future, the comparison results between rural and urban areas are shown in Fig. 4a~f.

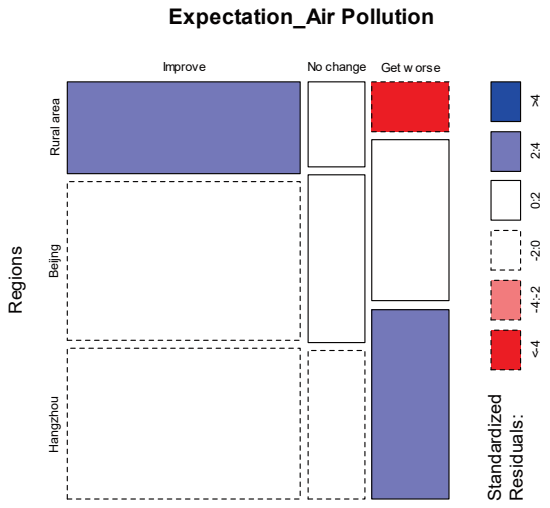

Fig. 4a. Rural-urban comparison regarding the change of environmental issues in the future_Air pollution

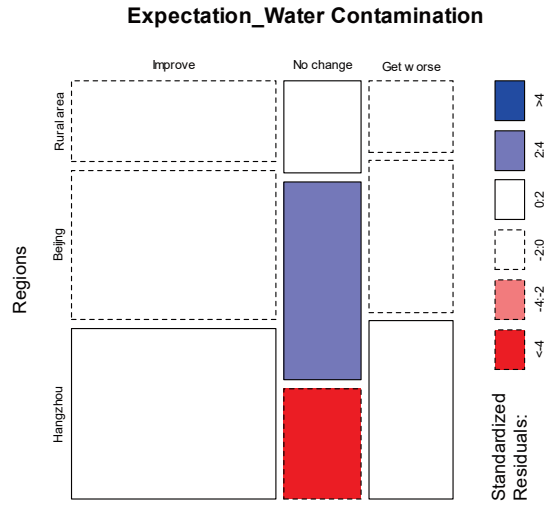

Fig. 4b. Rural-urban comparison regarding the change of environmental issues in the future_Water contamination

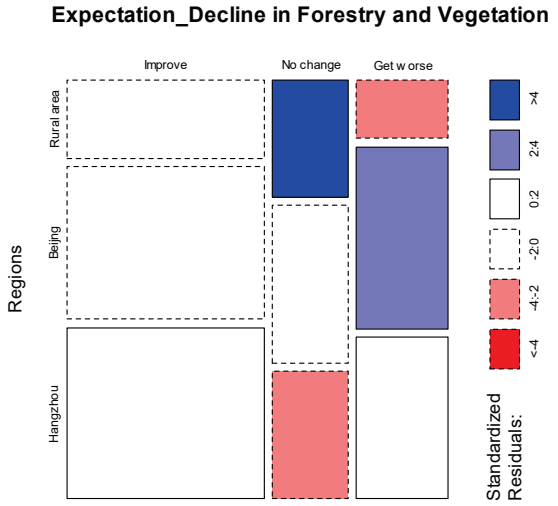

Fig. 4c. Rural-urban comparison regarding the change of environmental issues in the future_Decline in forestry and vegetation

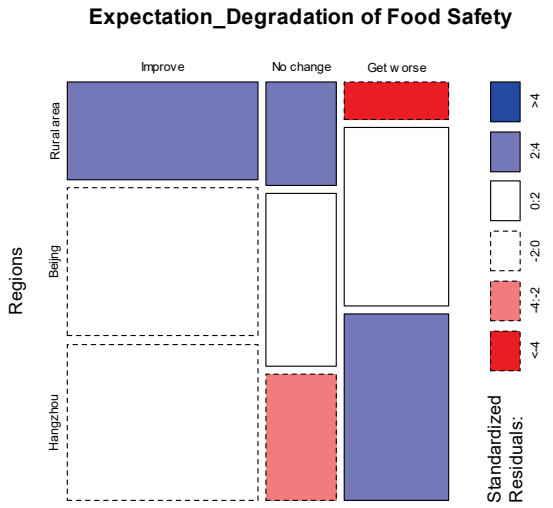

Fig. 4d. Rural-urban comparison regarding the change of environmental issues in the future_ Degradation of food safety

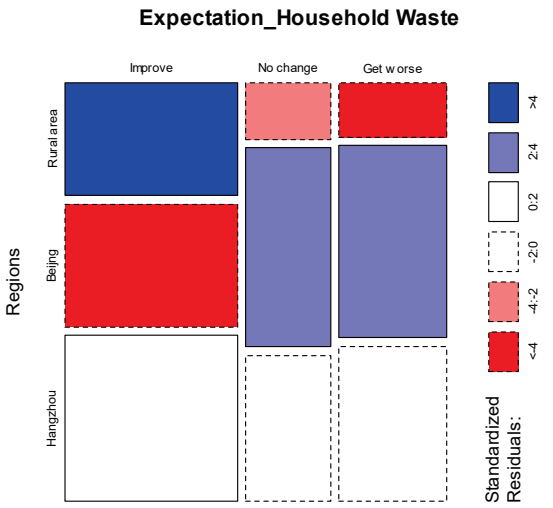

Fig. 4e. Rural-urban comparison regarding the change of environmental issues in the future_Household waste

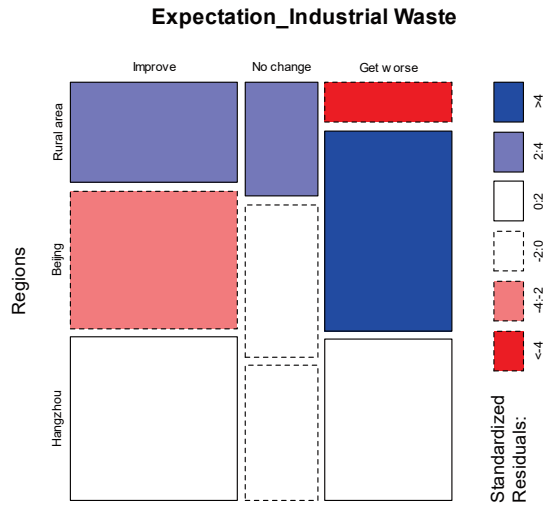

Fig. 4f. Rural-urban comparison regarding the change of environmental issues in the future_Industrial waste

According to Fig. 4, for the change of air pollution, people in rural areas held a more positive prediction than in Beijing and Hangzhou. Especially people in Hangzhou hold an obviously negative attitude; for the change of water contamination, there are no obvious difference among all three regions on "improve" and "get worse" option. However, more people in Beijing believe this issue will have "no change" in the future; for the change of forestry and vegetation, more people in rural areas believe this issue will not change in the future; for food safety issues, people in rural areas hold a more positive prediction than in Beijing and Hangzhou; for household waste issues, people in rural areas hold the most positive prediction than in Beijing and Hangzhou. And people in Beijing hold the most negative perdition on this issue. For industrial waste issues, people in rural areas hold a more positive prediction than in Beijing and Hangzhou. And people in Beijing hold an obviously negative prediction.

4.Summary and Discussion

Based on the analysis of the survey data, the status and features of environmental consciousness in rural areas are clarified from some perspectives. Generally speaking, people in rural areas are holding positive evaluations towards their lives and the environment around. They are satisfied with their lives and inclined to believe they belong to an upper social class. Regarding to the environmental quality and its change, they are satisfied with the present environmental quality, and are inclined to hold more positive expectations regarding the future environmental change.

The socioeconomic developments in rural areas are obviously much lower than in the urban areas. And according to the objective environmental data, rural areas are facing increasingly serious environmental situation. However, the relative positive evaluations on environmental quality and its change were clarified. One important reason may be because the remarkable economic growth in rural areas. According to official report from the central government, in 2014, per capita disposable income of rural residents grew by 9.2%, outpacing that of those living in urban areas. The number of people living in poverty was reduced by 12.32 million, and over 66 million more people gained access to safe drinking water in rural areas (Report on the work of the government, 2015). Rural residents are more likely to have a utilitarian orientation than urbanites toward the natural environment (Van Liere& Dunlap, 1980) and peasants are described as "too concerned with the exigencies of making a meager living to worry about environmental problems" (Bryan Tilt, 2009). Economic growth always is taken as the primary goal in rural areas. The rapid development in economic greatly benefit the life of peasants. The increasing satisfactions stem from the richer life are showing on many aspects of rural life, including the evaluations on the environment (Chen, 2016).

Another possible reason to explain the positive evaluation may stem from the relative closed living environment. Rural residents have less ways to know the environmental information, and have less knowledge to understand the information. Among the respondents, there was only 5 persons who have study experiences in university or graduate school. That means, even the environment got worsened, people may not be able to perceive it. People have less concerns or worries towards the environment. From this point, it can be assumed that the positive evaluations on environmental quality and its change in rural areas, to some extent, indicated a weaker environmental sensitivity towards the environment.

The residence hypothesis indicated that urban residents are more likely to be environmentally concerned the environment than rural residents (Tremblay and Dunlap, 1978, Van Liere, K. D., & Dunlap, R. E., 1980). However, it is not always applicable to all situations. For instance, some of the analysis results showed that, the evaluations towards the environment on some aspects in rural areas were located between the two cities. The differences between rural and urban areas may depend on the specific aspect of environmental consciousness that being examined.

By far, the main focus of environmentalism studies has been urban residents, whereas rare research attention was put on rural environment and rural residents' environmental attitudes (Yu, 2014). As one of the few quantitative studies that focuses on environmentalism in rural areas of China, this paper provides some descriptive information regarding rural residents' environmental consciousness in present-day China. However, some limitations of this study have also be noted. First, China has a vast and heterogeneous population. The surveyed 51 villages are located quite closely with similar economic and geographic backgrounds. Future studies shall expand the survey scope to include diverse cultures and biophysical environments. And furthermore, people's environmental consciousness is complicated and comprehensive. Analyses on only people's satisfaction and perception to the environment change are not enough and further empirical studies on a broad scope are needed.

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References

(1) Bryan Tilt. The Struggle for Sustainability in Rural China: Environmental Values and Civil Society. Bryan Tilt. New York: Columbia University Press, 2009.
(2) Chen, Y. (2017). Practice of Environmentally Significant Behaviours in Rural China: From Being Motivated by Economic Gains to Being Motivated by Environmental Considerations. Behavioral Sciences, 7(3), 59.
(3) Chen, Y. Integrated Studies on Structure and Formation Mechanism of Environmental Consciousness in Rural and Urban China. Ph.D. Thesis, Doshisha University, Kyoto, Japan, March 2016.
(4) Friendly, M., & SAS Institute. (2000). Visualizing categorical data. Cary, NC: Sas Institute.
(5) Knight, J., & Song, L. (1999). The rural-urban divide: Economic disparities and interactions in China. OUP Catalogue.
(6) Report on the work of the government, 2015, http://www.gov.cn/guowuyuan/2015-03/16/content_2835101.htm
(7) Tremblay, K. R., & Dunlap, R. E. (1978). Rural-urban residence and concern with environmental quality: A replication and extension. Rural sociology, 43(3), 474.
(8) Van Liere, K. D., & Dunlap, R. E. (1980). The social bases of environmental concern: A review of hypotheses, explanations and empirical evidence. Public opinion quarterly, 44(2), 181-197.
(9) Yu, X. (2014). Is environment 'a city thing' in China? Rural–urban differences in environmental attitudes. Journal of Environmental Psychology, 38, 39-48.
(10) Zheng (2012). The East Asian survey on people's sense of culture, life and environment-Japan, South Korea and China (2010~2011). Research report No.1, Doshisha Research Center for East Asian Studies.