

Investigation and analysis of family life with energy and environmental awareness of urban residents in Dalian

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Abstract

Based on the questionnaire of family life with energy and environmental awareness of Dalian urban residents, analyses the view of the residents about the environmental awareness in lifestyle, home appliances, cars, living environment, waste disposal situation, and get several relevant conclusions as followed: 1. The rates of energy dependency between developed regions and undeveloped are different. 2. The residents' landscaping awareness is good, but the relevant departments developed few activities on landscaping. 3. The degree of the implement of energy-saving depends on the life standard of the residents. 4. The urban residents have better energy-saving and environmental awareness than rural residents. This survey provides a reference in understanding the current status of the northern residents' energy utilization in order to create a more natural and harmonious society and achieve the energy-saving and emission reduction goals.

1. Introductions

Energy and environment are the two major problems that the mankind together face, China, which is developing so fast, has the problems that are particularly prominent. As the world's industrialized, resulting in a series of worldwide issues such as global warming, energy shortage, environmental pollution and ozone hole and so on. These issues remind us that besides the rapid development of economy, don't forget to protect the environment, save the energy and enhance the awareness of environmental protection. The level of public environmental awareness is an important indication to measure the quality of environmental protection in a country or region [1-3]. The so-called environmental awareness is that people form the consciousness of participation in environmental protection according to their fundamental values, based on the cognitive state of the environment and the understanding of environmental rules, it is eventually reflected in the behavior conducive to environmental protection [2-5]. As the world's second largest consuming country only to the United States, China has got some provinces' electricity and natural gas supply shortage in recent years, due to energy shortages, power peak and valley difference increases, gas price hike, air conditioning and heating energy consumption increased, the situation is not optimistic. So it is necessary to carry out a survey on the family life of residents with energy and environmental awareness. The survey analysis the family's lifestyle, consumer behavior and the feature of environmental awareness and environmental action through the actual state of the investigation related to the ordinary family behaviors, confirming the effective measures for low-carbon action

according to the relationships between city's climate, population, characteristics of economic and industry, social cultural etc. The questionnaire of family life with energy and environmental awareness of Dalian urban residents was carried out in Dalian, Liaoning Province, 2009.

2. Actual survey

2.1 Informant

The survey chose Dalian urban areas and rural areas to investigate. The residences include city parents and students and rural parents and students.

The number of questionnaires received: City parents and students 1561 in each, rural parents and students 887 in each. The investigation has a wide range of degree of education of different parents from never received formal education, primary education and middle education to master's degree or above; occupation of party and masses organizations, state organs, enterprises and institutions staff, professional and technical personnel, the staff, business services, the military and other occupations, Which reflecting the family life with energy and environmental awareness of Dalian urban residents in many aspects. The investigation time is from September to December, 2009.

2.2 Questionnaire method

This survey is for drafting environmental protection and energy saving measures. The questionnaire covers the general public's environmental awareness and life saving actions of the whole family in Dalian, although it covers a lot, the main purpose is to create a more harmonious society and achieve energy reduction. In addition, the survey's content will not be used for any purpose other than research, and the survey is secret ballot. We can get a common understanding through the compare between the citizens and the township residents of the state of environmental awareness of the residents in Dalian in the aspects as followed: the way of life, home appliances, cars, living environment and waste disposal.

3. Survey results and analysis

3.1 on environmental awareness and way of life

when Answering questions about global warming issues, the urban and rural residents had some understanding of the greenhouse effect, as in "sacrificing your own comfortable conditions to prevent the greenhouse effect is necessary", "Yes" "May" "May not" "No" are to be selected, 63.95% of urban parents selected "No", while the rural parents who selected this accounted for 48.0%; compared to 61.47% of urban students, the rural students who selected this accounted for 55.22%, indicating that nearly more than half of the residents can sacrifice their comfortable conditions to stop global warming with their good environmental awareness, but between urban and rural areas, whether these are parents or students, urban residents got much better awareness of environmental protection than rural residents. Another example is "A lot of people around use the energy more than expected, and it can be very difficult not to do so, "Yes" "May" "May not" "No" are to be selected, nearly 50% of urban parents chose "Yes", 25.6% chose "maybe"; 30.01% of rural parents chose "yes", 26.49% chose "maybe", for students in urban and rural areas, the first and the second choices are chosen both nearly 1/3. It shows that parents have higher energy dependence and the urban parents' energy dependence higher than the rural parents', while the urban and rural students' energy dependence almost has no

difference, but there's still some of dependence. Therefore, energy has become the indispensable part of people's daily lives, and developed regions get higher energy dependence than less developed regions (Figure 1).

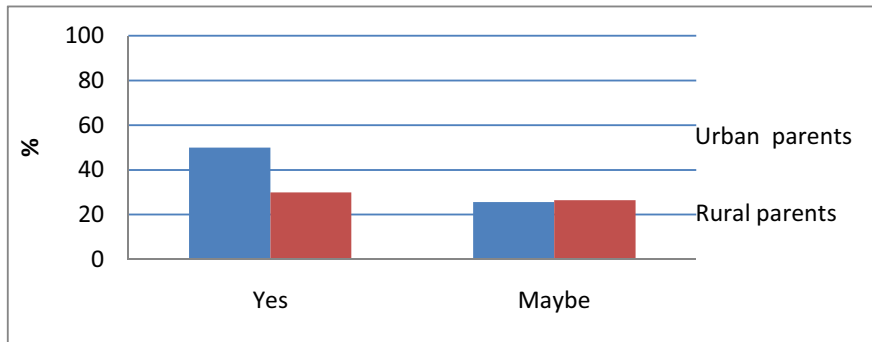


Fig. 1 Energy dependency

There are some of the issues on housing. When asked "Do you have the opportunities to participate in activities like residential landscaping or improvement?" "Yes" "May" "May not" "No" are to be selected. 30% of urban parents chose "No", 25.33% chose "Yes"; 31.05% of rural parents chose "Yes", 26.91% chose "No", for the urban students, the first and the fourth choices are chosen both nearly 30%. 31.63% of rural students chose "No". It shows that the implementation of activities of landscaping in urban and rural communities is not optimistic, and the propaganda about the landscaping activities should be strengthened. When asked "If there were opportunities to participation in residential landscaping or improvement activities, will you take part in?" "Yes" "May" "May not" "No" is to be selected. 63.2% of urban parents, 61.41% of rural parents, 58.09% of urban students and 56.61% of rural students chose "Yes", showing that the residents would be happy to participate in community environmental activities, the overall landscaping awareness of the residents is good.

There are some of the issues on energy-saving methods in daily life. Such as "Will you bring your own shopping bag when you go shopping," "Always" "Sometimes" "aware of but do not do" "Never" are to be selected. (Fig. 2)

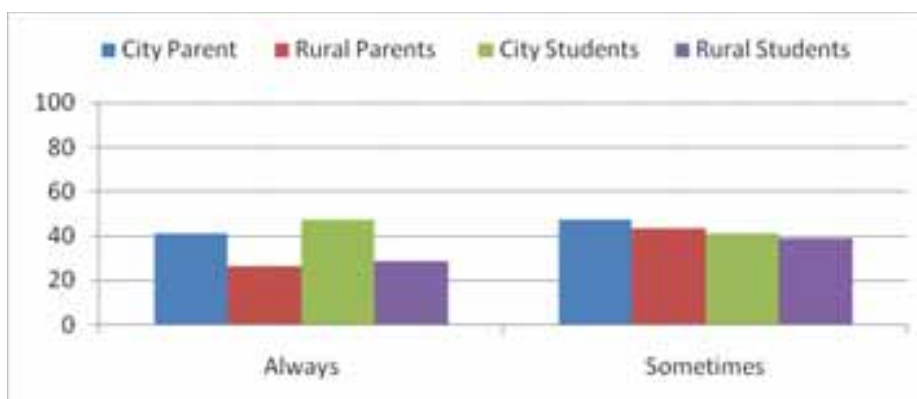


Fig. 2 The degree of implementation with shopping bags

Figure 2 shows a high degree of implementation of "bring their own bags when shopping", but there is a huge gap between urban and rural areas on the degree of implementation, the implementation degree of the urban parents and students is higher than that of rural. So energy-saving behavior is connected in living standards of the area. The higher standard of living, the better the energy-saving behavior is.

2.2 On cars

Reducing private cars use can make environmental improvement. Residents selected the effect of reducing the frequency of the private cars use by the understanding on some conditions, take the urban parents for example (Fig.3).

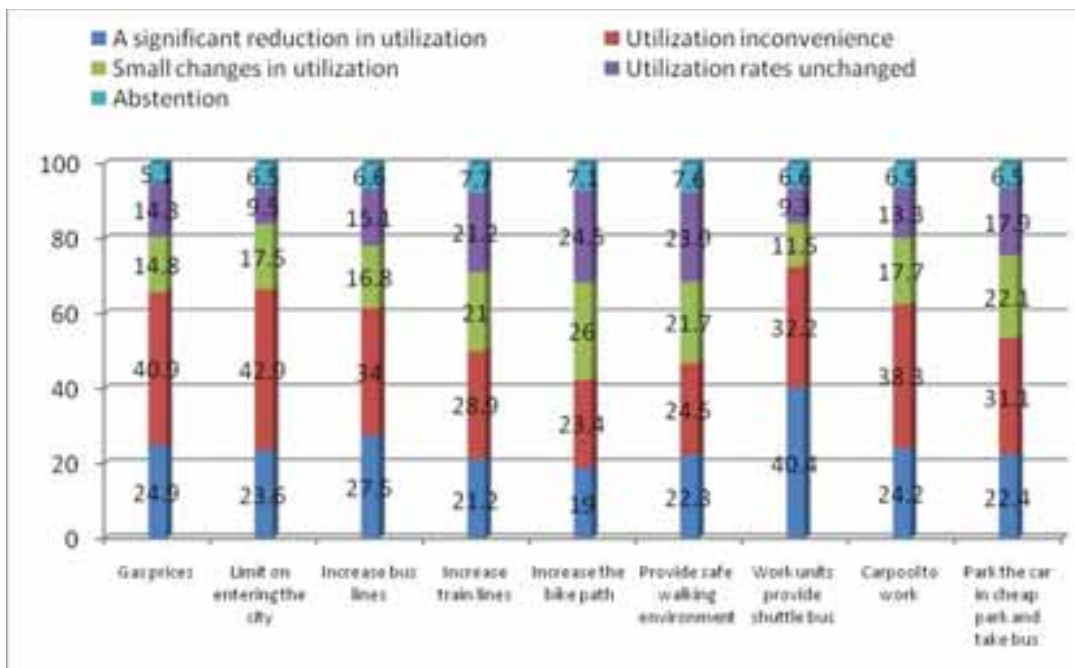


Fig.3 List of conditions on the effect of reducing private car

Fig.3 shows that more than 40% of the residents think that the "work unit provides commuting car" condition can greatly reduce the use of private cars, and the conditions "increasing fuel cost," "limit on entering the city" "car pooling" are 40.9%, 42.9% and 38.3%, more than 50% of the residents think that private car use frequency will "significant decreases" or "decreases" for all of the conditions, even some conditions are up to 60%, indicating that residents think reducing private car use has a relationship with improving the environment, we should promote and put the above conditions into effect to control the number of private cars to improve the environment. The government can reduce the prices and fuel costs of the good environmental performance cars to extend the use of environment-friendly cars.

2.3 On the living environment and energy use in daily life.

Through the contrast between the former and present types of home cooking energy use and the types of bath water heater to understand the energy use situation in daily life, according to the comparative analysis of past and present, the change of China's energy use types as followed (Fig. 4).

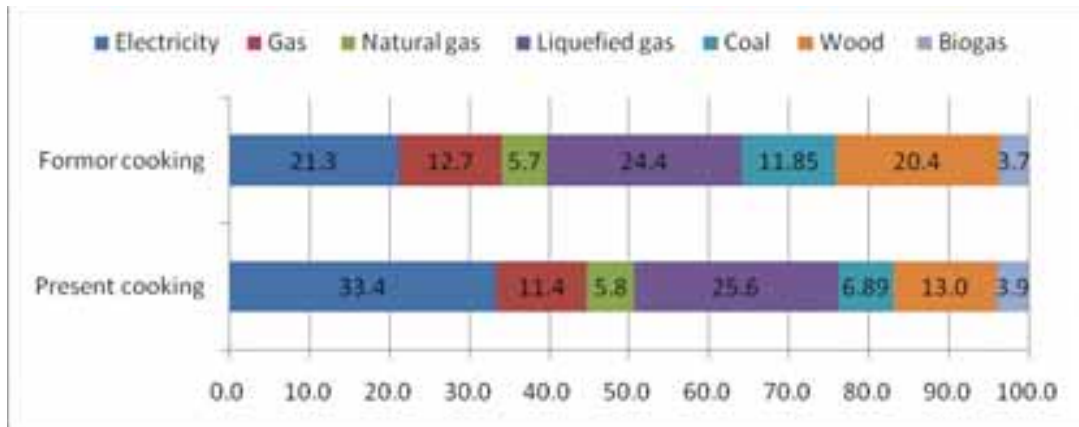


Fig 4 Type of energy use of daily life

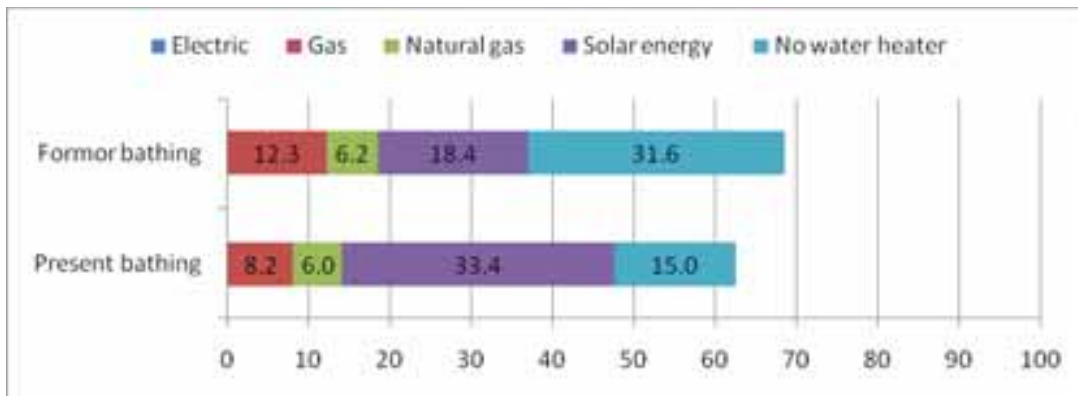


Fig 5 Type of energy use of daily life

From Fig.4 we can figure out the proportion of electricity consumption in cooking is increasing significantly now than ever before, and the proportion of coal and firewood consumption is less, which can be connected with energy use structure. Fig. 5 shows that more and more people are using solar shower and the water heater now, with the improvement of living standard and people's comfort request, more and more people get to use solar energy and water heater, solar energy use can reduce the increase in the use of other disposable energy (as coal, natural gas, etc.), which can make energy conservation improvement.

3. Conclusions

The following conclusions can be drawn through the investigation and analysis above, reflecting the environmental protection awareness of the urban and rural residents in Dalian as well as the inadequacy of the relevant departments.

- (1) The energy dependence of the developed regions and less developed regions is different. Developed regions' dependence on energy is higher than the less developed regions. Therefore, the Government should implement the corresponding energy-saving and environmental protection policies in different regions to achieve the objective of national energy saving.

(2) The landscaping awareness of the residents is good, but the relevant departments developed few activities on landscaping. Many residents would like to participate in environmental activities, so it is necessary for the relevant departments to strengthen the propaganda about the landscaping and hold more environmental activities.

(3) The degree of the implement of energy-saving depends on the life standard of the residents. The result shows that the higher standard of living, the better the energy-saving behavior is.

(4) Many of the questions reflect that the urban residents have better energy-saving and environmental awareness than rural residents, relevant departments should pay more attention to the rural residents' understanding on environmental awareness and strengthen the implementation of relevant policies, so that people can consciously save energy, reducing unnecessary waste of energy.

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