



Journal of Applied Sciences

ISSN 1812-5654

science
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Charging for Plastic Bags Cut Bag Consumption by Half in China

Research from the University of Gothenburg (Sweden) shows that people in China -- the number one consumers of plastic bags in the world -- reduced their consumption of plastic bags by half when stores were forced to charge consumers for the bags.

Use of plastic bags is a growing global environmental problem. As a result, the bags are becoming subject to various regulations in an increasing number of countries, with mixed results. An environmental-economic evaluation of the Chinese ordinance against free plastic bags from June 2008 shows that people in China are the number one consumers of plastic bags in the world that reduced their consumption of plastic bags by half when stores were forced to charge consumers for the bags.

'Our results show that this is an effective policy instrument that can be used to benefit the environment. But we also found that there is further room for improvement. What's most important is to make sure that the ordinance is complied with,' says Haoran He, who studied the effect of the Chinese ordinance as part of his doctoral thesis in environmental and behavioral economics.

In his thesis, "Haoran He" refers to several other countries that have implemented similar regulations aimed to reduce the consumption of plastic bags, for example Ireland and South Africa. Yet, he stresses that his study concerns only the effects observed in China.

'A general reflection based on studies in several countries is that if a country wants to reduce the consumption of plastic bags in the long term, it seems like repeated public information campaigns on environmental problems linked to plastic bags are very important,' says He. The Chinese ordinance allows store owners to price their own plastic bags and then keep the profit. However, the price may not be lower than the acquisition value, which is the equivalent of .10-.60 SEK/bag depending on size and quality.

As competition is fierce in China, many stores choose not to comply with the new ordinance. Haoran He says that four months after the implementation of the ordinance, 60 percent of all plastic bags were still given away at no charge.

'One alternative would be for the government to price the shopping bags, convert the fee to a tax and then use the

revenues to finance various environmental measures,' says He. His study is based on consumer surveys conducted both before and after the regulation went into force. A total of 3000 consumers in Beijing and Guiyang responded to questions about their consumption habits and use and re-use of plastic shopping bags.

Prior to the ordinance, the subjects used an average of 21 new plastic bags per week. They rarely used the same bag twice. Following the implementation of the ordinance, the consumption of bags was reduced by 49 percent and almost half of them were re-used.

Economists rarely encounter a good chance to compare how much consumers claim to be willing to pay in a certain situation with how they actually end up behaving in the same situation. Haoran He therefore seized the opportunity to address the question: How reliable is it to base predictions of reactions to environmental regulations on surveys and interviews? His results suggest a relatively strong link between what the consumers said they would do and what they actually did, so the method seems to be effective at least in the context of everyday consumption items.

Ireland is a country that has been remarkably successful at reducing people's consumption of plastic bags. In 2002 the country implemented a plastic bag tax in combination with long-term informational campaigns. When the Irish consumers were forced to pay 1.50 SEK per bag, they reduced their consumption by an astonishing 90 percent. Since they eventually got used to the price and the consumption consequently went up again, the government increased the price to 2.20 SEK/bag after five years. This clever move made the consumption fall back to a very low level again. People in Ireland now use about 20 bags per year as compared to 330 bags per year when they were given away for free.

The thesis was made possible by Sida's environmental economics capacity-building programme.