

How to Promote Green Purchase: A Behaviour Experiment Analysis based on Game Theory

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Overview

Years have witnessed various environmental pollution events like haze lead to health hazard and resource damage. However, due to the nature of pursuing profits of enterprises and lack of affordability for personal himself in paying for a large number of governance cost, government must take responsibility of solving environmental negative externality in order to sustainable development and earn credibility. And taking personal as the final goods consumer, government could formulate policies to narrow a gap between consumer consumption awareness and behaviour, thereby to promote green consumption behaviour. Although green goods are not complete public goods, but purchasing and using green goods can reduce environmental pollution without any doubt and main resources for sustainable development, which could be regarded as voluntary providing behaviour of public goods. The paper mainly research what kinds of policy or mixed policies could better promote green consumption behaviour and increase cooperation rate of coordinating environmental protection and economic development. Those policies are indirect policies which relate to publicity policy, environmental laws policy and information disclosure policy, and direct policies which include subsidies, and non-green goods quantitative consumption tax, and payment transfer policy.

Methods

Consider interaction function between consumer strategy and government strategy, we take game theory and conception in observing possible influence policies for consumer green purchase behaviour. The idea of game is in a more general conceptual level, and there is a difference between its theoretical thought and model.^[1] After subjects fill in the New Ecological Paradigm^[2], we set various policies experiments with 8 subjects and take limited game of 15 rounds of making purchase decisions according to Ostrom and Smith obviously experimental researches^{[3] [4]}.

Results

In the baseline experiment, consumers' green purchase and non-green buying behaviour cross, and the cooperation rate was 35.51%, the lowest is 21.25% and the highest 45%, which fail to form the green commodity market. Purchase behaviour disclosure experiment, large subsidy policy experiment, quota environmental tax experiment and payment transfer policy experiment can significantly promote green purchase and increase the cooperation rate, which respectively reaches 43.75%, 79.17%, 41.65% and 41.25% respectively. The government green procurement law experiment, small group experiment and small subsidy policy experiment cannot promote green purchase, but instead promote free ride, and the cooperation rate respectively is only 26.25%, 28.75% and 23.75%. As such, we attain results: result 1 is that government Green Procurement Law lacks of credibility, and be related less to consumers' interest so that it only transfers government responsible for sharing environmental protection information and is not conducive to promoting consumers to green purchase; result 2 Although "Green Angel logo" could be supported by many consumers, but it need a a long time to establish its social credibility, and has little influence in promoting green purchase; result 3 Repeated video publicity about environmental protection, which is known to all, will give rise to consumer's sense of fatigue, but does has impact on consumers with lower environmental awareness in promoting green purchase, and video publicity emphasising benefits of environmental governance stimulates high-awareness consumers to green purchase, but lead to free-rider of consumer with middle environmental cognition; result 4 green purchase behaviour information disclosure policy can promote consumers to green purchase, and improve the supply of environmental resources; result 5 small groups which continuously make

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green purchase can promote higher-environmental-cognition consumers to buy green goods, but will result in lower-environmental-cognition consumer's free-rider behaviour; result 6 subsidy policy will cause the wheel effect, squeeze out the consumer's responsibility for environmental protection, and form policy dependence, especially the large subsidy policy; result 7 small subsidy is not conducive to promote green purchase, but lead to consumer's free ride behaviour; result 8 Quota environmental tax policy can promote green purchase, especially low-awareness consumers; result 9 although payment transfer policy express social equity to consumers, it only can promote high-awareness consumers to make green purchases.

Conclusions

When government policies lack of credibility and social equity, consumers could not attain ideal expectation and retain non-green purchase goods purchase behaviour or reduce green purchase behavior. And some consumers in the absence of green purchase cause the degree of environmental pollution has not yet break consumers' psychological bottom, even some subjects suffering from physical injury caused by environmental pollution. So, we suggest that reduce small subsidy policies cost and put more on setting information platform of green market and green goods.

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