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The Social Acceptability of Personal Carbon Trading in China

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Abstract
Whether personal carbon trading (PCT) can be successfully implemented, as a public policy, critically depends on its social acceptability. For China, the biggest carbon emission country, public attitude towards personal carbon trading has a significant impact on its energy strategy or even the world's. The purpose of this research is to investigate the social acceptability of personal carbon trading in China with the method of focus group and questionnaire. In order to understand Chinese citizens' evaluations on personal carbon trading and how these attitudes are generated, researchers interviewed 32 individuals in four groups in-depth. Before and after the interview, questionnaires of almost the same content were sent to investigate whether more information on personal carbon trading will change interviewees' attitudes towards it. A comparison was then made between public attitudes towards personal carbon trading and those towards carbon tax. Two significant conclusions are drawn from this study. First, personal carbon trading has gained more popularity compared with carbon tax. Second, the introduction of personal carbon trading to China still faces great challenges from the social atmosphere.
Keywords: Personal carbon trading; PCT; Carbon tax; social acceptability;

1. Introduction

According to the 2009 greenhouse gas emissions data by Maplecroft, China's annual carbon dioxide(CO_2) emissions exceeded 6 billion tons that ranked the first worldwide. In the same year, the Chinese government committed to a 40%-45% cut by 2020 relative to 2005 levels, showing great determination in energy saving and emission reduction. Compulsory administrative measures were taken to achieve this and brought about a bunch of problems, including, decreased public support, mixed functions of the government and enterprises and deviation from law of market economy. Therefore, in addition to developing practical methods corresponding to the specific situation, China should try to learn advanced concepts like PCT from other countries. PCT is a policy concept which emphasizes individual's responsibility for reductions in carbon emissions; it is an innovative and potentially powerful instrument with which to complete the task (Defra, 2008).

As it is proved that a newly introduced public policy can be successfully implemented heavily relies on the public attitudes towards it. As a consequence, social acceptability of PCT has always been one of the focuses of PCT's policy study. Moreover, figuring out how the Chinese value PCT offers a strong theoretical and practical support at its national acceptability due to its significant role in global carbon emissions. Some experts have already showed their interest in the adaptability of PCT in different national context, such as Fawcett(2010a). Those are the reasons why this article matters a lot.

The main objective of this paper is to figure out the public comments on PCT in China with the method of focus study and questionnaires. To specify, the four sub-objectives of this research are:

- To investigate Chinese citizens' attitudes towards climate change and personal obligation to carbon emission reductions.
- To survey their attitudes towards PCT and carbon tax, and the main factors that affect their attitudes.
- To obtain information about advantages and disadvantages of PCT, as well as its strengths and weaknesses compared with carbon tax.
- To clarify the attitude differences between the Chinese citizens and the citizens of other countries towards PCT.

The remainder of the paper is structured as follows. Section 2 reviews literature related to focus group studies and two methodologies. Next, a description of the focus group experiments is presented in Section 3. In Section 4, the qualitative results for the focus group discussion are analyzed. Conclusions are provided in Section 5. Finally, recommendations are offered in Section 6.

2. Literature on social acceptability of PCT and the two methodologies

The concept of PCT first appeared in UK in late 1990s; two scholars (Hilleman, 1998; Fleming, 1997) put it forward for the first time and envisaged a more radical and strict Contraction and Convergence(C&C) of the state budget to reduce the national carbon emissions. Mayor raised the C&C scheme in 2000 as a response to Agawam and Narain's (1991) proposal to share the responsibility of addressing climate change. By 2004-2005, to perfect PCT, PCAs (Personal Carbon Allowance) (Hilleman, 2004; Hilleman and Fawcett, 2005), DTQs (Domestic Tradable Quotas) (Starkey and Anderson, 2005)and TEQs (Tradable Energy Quotas) (Fleming, 2005) were proposed successively. And DTQs went through some examinations and verifications in terms of its feasibility and applicability. Even the government began to pay close attention to it (Ann,2004).Even so, PCT was not noticed by the public until 2006, when UK's environment minister David Miliband showed strong interest in introducing PCT to reduce carbon emissions, which also triggered scholars and organizational research interests greatly. However, in the mid-2008the Defra claimed PCT to be an immature suggestion (Defra, 2008). Although the government held a negative attitude on PCT program, the academia showed an unprecedented interest in it. Most of the studies discussed cases of UK, while studies on other countries were launched in recent years, such as those about United States (Hilleman et al., 2008; Niemeier et al., 2008), Denmark (Fawcett et al., 2009) and Sweden (Varnas and Nykvist, 2009), etc.

PCT is an umbrella concept, of which the most important two schemes are TEQs and PCAs. Although differences exist between them in some aspects, they share the same main features (Defra,2008; Owen et al., 2008; Fawcett, 2010):

- Initial carbon emission right assigned freely to the individuals in a certain period;
- Covering the carbon emissions from domestic energy and transportation;
- Tradable emission right;
- Descending distribution line along with the country's carbon emissions budget year by year.

The most active area of PCT research is its "social acceptability" (Fawcett, 2010b). It has been regarded as the most important reference standard on whether the government implement a program, however, just a few articles specialized in this specific topic (Howell, 2007; Harwatt, 2008; Owen et al., 2008; Bristow et al., 2010; Von Knobelsdorff, 2008; Wallace et al., 2010; Jagers et al., 2010), while others merely treated it as an aspect of the PCT research. Hence, despite the research popularity, it still lacks theoretical depth. China， which is the biggest carbon emission country in the world but there is lake of research on PCT, let alone research on PCT's social acceptability.

With respect to the methodologies the articles takes, the reasons for using focus study are listed below:

- Compared with other qualitative research method, such as case study, interviews and observation, focus study is more structured, which means the researchers play a more active role. Their role is not to direct the interviewees on how to discuss the topic, but to promote in-depth interview (Owen et al., 2008).
- Focus study encourages more critical thinking as a direct result of interaction between participants and the moderator (Kondyli and Elefteriadou, 2009; Krueger and Casey, 2000; Loukopoulos et al., 2004)
- Focus study can collect large volume of information in a short time and with a limited sample (Morgan, 1997)
- Focus study is especially suitable for exploratory research and survey of attitudes and opinions (Kitzinger, 1995).

Although PCT research has been carried out for many years, it hasn't attracted the Chinese academic or governmental attention. Until recently, the public and even many researchers are unclear about its content. Therefore, combined with the research progress and characteristics of the method, there is no better choice than focus study in this field.

Questionnaire method was used before and after the interview. It aimed to contrast people's attitudes towards PCT and carbon tax, and to figure out why they change their attitudes during the discussion. Unlike focus study, questionnaire method is a quantitative research method to offer us important data. Focus study is superior in figuring out how people' attitudes are formed; the questionnaire has advantages in explaining why people hold certain pre-defined opinions. In this article, focus study served as the main method and the questionnaire served as the assisted one, both working together could take advantage of their strengths to achieve the research aims.

3. Research methods

3.1. Focus group and questionnaire procedure

From April to July 2014, 32 participants (18 males, 14 females, average age 23) were evenly divided into four focus groups for discussion.

A month before formal focus groups, a trial group was held to detect and correct problems in question setting and procedures in advance. The selection of trial group members also followed the formal focus study procedure. As a result, the trial group incorporated 8 members recruited on the basis of the same standard, who

were all low-carbon emitters and environmentalists. One or two weeks before the formal focus groups, each participant was sent a "briefing pack" covering study background, an introduction of PCT and carbon taxation and a comparison between them. The question and interpretation must be as understandable and straightforward as possible, so academic terminologies should be avoided. One host guided the interview, controlled the time distribution on every question and each participant, and raised questions chronologically based on "focus group categories and questions" format (see table3). Each focus group was audiotape with the permission of the participants. Before the discussion, each participant followed a check-in procedure and filled out a questionnaire; at the end of the focus study the participants filled out another questionnaire on almost the same content. We can be clear about whether their attitudes changed during the discussion. By studying and comparing between answers from different participants and different groups, it was concluded that the attitudes towards PCT have been fully attained and no additional focus groups are needed.

3.2 Participants

Since the acceptability of PCT to the Chinese public was the subject of study, all participants were Chinese citizens. They were recruited through 3 university BBS in Hefei, China. Those universities are University of Science and Technology of China, Anhui University and Anhui Agricultural University. Students interested in our topic filled out the questionnaires posted on BBS and sent them back to the assigned email address. Then we selected participates we need according to information obtained from questionnaires. To insure diversity, participants were selected based on gender, the level of carbon emissions, attitudes towards environment, possession of cars and the frequency of long distance travel.

However, it's difficult to get the accurate carbon emission data, as it requires the participant's to calculate their emissions. Consequently, it's hard to determine precisely whether participants emit above or below the average. According to the carbon consumption rate and the prevalence of car in China, air travel and car use are good indicators for individuals' CO_2 emissions (Howell, 2007) . Thus, we asked participants whether they owned a car and how many long flights they had taken during the past year to get a rough estimate of their carbon footprint. We then assigned them to 'higher carbon' (H) or 'lower carbon' (L) groups on the basis of their responses. Furthermore, we assume that people who were members of environmental organizations were more inclined to support PCT than average, whether or not they would be penalized by the scheme. Participants were therefore segregated according to this criterion as well as their transport usage, using 'M' to indicate members of such organizations and 'N' to identify non-members (Howell,2007) . The information of group classification is listed on table 2.

Table 1 Sample characteristics

Variable		Respondents	Chinese average
Female		43.8%	48.7%
Age	18-30	100%	
	>30	0	
Education	Below higher education	0	8.9% of population has higher education qualifications
	Higher	100%	
Car availability	0	50%	20% households have access to 1 or more cars
	≥1	50%	
The frequency of long distance travel, esp. international trip	0	50%	
	≥1	50%	

The sample was over representative on males and younger age groups, with all samples below 30 years old and the percentage of males 6.5% above average. People with higher education levels were also over represented as only 8.93% of the Chinese population has higher education qualifications (National Bureau of Statistics, 2011), which again were anticipated given the method of recruitment. As intended the sample exhibits the same percentage of car availability and frequency of long distance, both are 50%. But car availability was 30% higher than the national average (Junxiu Wang, 2013; National Bureau of Statistics, 2011).

Table 2Group classification

		Carbon emissions	
		Lower	**Higher**
Members of environmental organizations	**Yes**	L/M	H/M
	No	L/N	H/N

L/M, H/M, L/N, H/N are four experimental focus groups. "L" symbolizes the low carbon emitter, "H" represents

high carbon emitter, "M" represents members of environmental organizations, "N" stands for the participants who were not members of environmental organizations. Take L/M for example, it refers to those who are both low carbon emitters and members of environmental organizations.

3.3. Preparation of questions of focus study

The first key question (Table 3-Q4) discussed carbon taxes in detail, trying to tease out its merits and flaws as a carbon reduction policy, as well assist applicability to China's national conditions, which are probably why people support or oppose carbon taxes. The purpose of the second key question (Table 3-Q5) was similar to the former one (Table 3-Q4), but about PCT. A supplementary question followed Q5 to compare the behaviour change under the two schemes. From it we could figure out which was more effective in carbon emission reductions. The third key question (Table 3-Q6) compared the two schemes in general views. Respondents could select their favourite after weighing the two policies with the briefing pack as a reference. This question was followed by aural preference test, which raised some specific questions and let the respondents choose between a carbon tax and PCT according to their own preferences. The number of supports and oppositions on each question are counted later.

Table 3 Focus group categories and question

Q1 Opening question
Briefly introduce yourself. How long have you been in this school? How long have you been concerned about the environment issues?
Q2 Introductory question
What do you think of the idea that individuals should be made more responsible for reducing their carbon emissions?
Q3 Transition question
When you read the briefing pack, what was your first impression on the two policies?
Q4 Key questions
So now in more detail what do you think are the advantages and disadvantages of a carbon tax?
Q5 Key questions
And what do you think are the advantages and disadvantages of personal carbon trading?
[Supplementary: Which of the two schemes do you think would change your personal behavior to a greater extent?]
Q6 Key questions
Overall, how do you compare the two policies? Is there any reason to support your idea?
Statements exercise
Q7 Ending question
Of all the issues discussed, what struck you most about carbon taxes? What about personal carbon trading?
Summarize discussion then ask: is that a fair summary? Anything missing?

4. Analysis of the results

The information obtained directly from the focus groups includes: 1) individual with different background and beliefs probably have different attitudes towards PCT; 2) the reasons why people support or oppose the PCT; 3) different conclusions drawn from this study and those on other countries. The information was then processed and analyzed for research objectives.

4.1 Personal factors affecting the social acceptability of PCT

4.1.1 The level of carbon emissions

As we discussed earlier, the participants were classified by their carbon emissions. During the interview, we found that high-level emitters were more likely resistant to PCT, while low emitters tend to support it. The fundamental reason was that PCT brought certain economic incentives, the below-average emitters could reduce their carbon consumption and sell allowances in surplus to obtain financial benefits, but above-average emitters would be punished since they had to buy additional carbon to maintain daily needs.

4.1.2 Their concern for the environment

Based on answers to the ten questions in the recruiting questionnaire, we chose samples highly concerned with environment issues and samples indifferent to environment. The results indicate that environmental protectors have much more preference on PCT than the environmental indifferent ones, and also more incline to accept carbon-saving policies. Tracing this to its cause, we find that environmental protectors not only set examples on their owns, but also hope public policies constrain others for environment protection. Environmental indifferent individuals seldom consider negative externalities their behaviors bring to the public. Thus, implementing PCT

let them feel like making a sacrifice: they have to undertake financial costs on carbon emissions.

4.2 Factors relating to PCT itself affecting its social acceptability

The most important purpose of this study is to find out why people support or oppose PCT. Clearly knowing what factors affect the opinions of the public and government may help in three aspects. First, policymakers could design PCT more scientifically and reasonably. For instance, if most people think the allocation of initial carbon emission right should take their personal needs into consideration; policymakers should give feedback to public requirements when they design PCT. Second, policymakers could take some measures to turn citizens' negative attitudes towards the positive. For example, if the public complains the lack of laws and regulations cannot guarantee the implementation of PCT, policymakers could enact niche-targeting laws and regulations that are favourable to PCT. Third, the public's viewpoint is a reference index on whether PCT is suitable for China. This part of the study of PCT is in comparison with carbon tax.

4.2.1 Fairness

The PCT quota has lot of support for its relative fairness in the interview. This policy allows low-income individuals to earn money by selling their excessive carbon allowance saved from daily use. At the same time, the high-income individuals buy carbon allowances from them. The trading relationship could partly realize redistribution of wealth, so PCT was thought to be fair. Although carbon tax levies all citizens equally, it didn't improve the conditions of the poor and incurred dislikes from respondents.

When it came to the principles of the initial allocation of emission rights, some people thought the equal allocation was unfair for not reflecting people's needs. For example, in rural areas, the only heating material for farmers is straw, but burning it would consume large amounts of carbon allowances, the participants thought the policy should give privilege to underdeveloped areas while allocating carbon allowances.

4.2.2 Effectiveness

The effectiveness of carbon emission reduction of PCT is higher than carbon tax for two reasons. First, an emission cap for PCT directly guarantees realization of carbon reduction targets. As for carbon tax, from the public viewpoint, levying tax just raises the price of products. For most people paying money is easier than sacrificing the quality of their life, they would accustom to life with tax, which is unfavourable to achieve emission reduction targets. But once the emission cap is set, one cannot buy carbon allowances whatever he wants, and probably the carbon allowance just having a price but no sales. Moreover, the respondents said they would not make financial sacrifices unless they perceive that carbon tax would definitely achieve goals. The other reason is that carbon taxes just raise the price commodities. While under no circumstances can people reduce their consumption of necessities? Considering the experience of other countries, respondents thought that many products currently under carbon tax regulations were indispensible for their basic need, so levying tax could not lead to a decreased carbon emission.

4.2.3 Cost

Ultra-high costs of PCT hesitated the participants. Its implementation costs, participation costs, and transaction costs add up to an extremely large number, which will, with no doubt, reduce the efficiency. But costs of carbon taxes are much lower. The state promulgates some relative laws and regulations about taxing and then citizens just need act in line with them. While in PCT, the use of a carbon card, set-up of carbon exchanges centres and all the expenses will require substantial capital investments. Therefore, carbon taxes have obvious advantages over PCT in terms of costs.

4.2.4 Improvements on people's lifestyle

Long-term implementation of PCT can help people develop a healthier, more environmental friendly lifestyle, earning it extra supports.

PCT scheme help people develop their sense of responsibility and sense of involvement. When people consume carbon products, they need to swipe carbon card. It is easy to see their own consumption and people feel responsible for CO_2 reductions to balance the budget. Besides the consumption process, people can see their involvement in the whole process of carbon trading, such as the allocation of initial emission rights and keeping carbon budget.

Psychological factors play a role in real life. Under PCT, people make more use of public transportation, bicycles and other environmental-friendly equipment when they commute and travel, which can alleviate the current climate change. But this requires the government to take pointed measures, such as increased development of green energy, investment in public transportation, and corresponding education.

In the mean time, carbon tax does not have effect in this aspect. The fact is that Chinese taxes are included in price leading consumers to simply sense an increased price with no idea how much carbon tax they bear while paying the bills. People would get accustomed to the high price of carbon products as long as price does not increase drastically after a relative long time. And carbon tax usually restricts necessity products, it could not play a role of moderating consumption.

4.2.5 Complexity

PCT program is very complex from its concept to transaction process. It takes us a lot of time and efforts to explain what PCT is and how it works, and it seems really hard for the interviewees to understand. Carbon taxes are much easier to understand and implement than PCT. Omnipresence of taxes in daily life makes introduction of carbon taxes a much easier job.

But providing more information to the public can make their attitudes towards PCT more positive. According to the questionnaire surveys before and after the interview, we found that their attitudes changed dramatically, and all the changes were transformation from confrontation to support. Because the host's timely explanation towards any questions and the group interaction offered adequate information to participants, both facilitated members' understanding of the PCT and therefore changed their negative attitudes.

4.2.6 Impact on economic growth

PCT has a negative impact on the economy by increasing burdens on individuals and companies and generating objections from the participants.

PCT's biggest impact on developed countries is that it brings inconvenience to citizens 'daily life. Its impact on developing countries is that it hinders economic growth. As the world's largest developing country, China's economy depends on burning fossil fuels so heavily that its consumption per unit output is very high.

To achieve the 12th Five-Year Plan, China has already closed down high-polluting enterprises in which emissions are easiest to reduce. Meanwhile, China has suffered severe losses in the 2008 global financial crisis, with many businesses not fully recovered yet. In this special period, the urgent task is to keep the economic growth. The trade-off between carbon reduction and economic growth is the reason thatmany people questioned the timing for both PCT and carbon taxes.

4.3 Different results obtained from this study between China and other countries

4.3.1 Citizen's attitude towards the country

In Europe, because of the deeply rooted market economy awareness and people's antipathy to planned economy, citizens are always sceptical of the government's intentions and behaviours. PCT, as a public policy introduced by government, arouse suspicions inevitably. Levett (2005) thought PCT remind Europeans of the state control in Soviet, and the hardship during wartime. Owen L, et al. (2008) insisted that public attitudes towards carbon reduction program have nothing to do with their environmental awareness, but with their attitudes towards the government: they would take PCT scheme as interference on the public life.

In China, the formulation and promulgation of many public policies does not solicit advices from the citizens, this situation becomes better with easier internet access and improved public services but not a lot. Though some people are full of doubts and dissatisfactions about the government, when the government confers with the public on public policies, they always keep silent or remain indifferent; just few citizens have enthusiasms for public affairs. Furthermore, China is a centralized socialist country, state intervention penetrated into all aspects of society activities; people have already become accustomed to it. When confronting social problems, the public even turns to the government at the first time. Hence, scepticism about the nation is not one of the factors affecting the attitude for PCT. At last, respondents got a conclusion that it is barely necessary to research on people's attitudes on policies in China.

4.3.2 Current Status of the Study

Academically, from Chinese academic database CNKI, we could not find articles on personal carbon trading in core journals, not to mention articles of social acceptability of PCT. In contrast, as we look at UK, we find the study begins from the 1990s and lasts for over 10 years, during which so many substantial achievements have been made. We can not only get the articles on social acceptability of PCT from top journals, but also approach reports from the research institutions. The number of research achievements will be greater when considering the international conference and the personal websites of the experts.

Practically, China only carried out pilots of carbon trading in seven cities last year, aiming mainly at corporations instead of individuals. We have not discovered any trial hints in the related study of PCT. While other countries have conducted various pilots in academic, business and community initiatives(Fawcett,2012). There are at least three examples of PCT-related pilots. Carbon rationing action groups(CRAGs) spreading mainly in UK and a handful of them elsewhere, Norfolk Island Carbon/Health Evaluation program taken place in the east coast of Australia, Personal Carbon Allowance Tracking scheme launching by an international engineering and environmental consultancy company based in eight countries.

4.3.4 Respondents' concern

In the interview, there was a hot discussion around the topic on how to distribute responsibility between rural and urban people, between individuals and enterprises; it is the respondents' primary concern on the introduction of PCT， while the discussion of PCT always centres on its equity, efficiency, effectiveness in UK.

With regard to the responsibility distribution between rural and urban groups, there are two reasons. On one hand, that is closely related to China's context, rural residents account for the overwhelming majority of the population,

which decides the public put themselves in peasant position as they are stakeholders of PCT program. The rural population accounts for 50.32 percent (National Bureau of Statistics， 2011), although many rural people registered residence transfers to city accounts due to urbanization, migration, and other reasons, the actual rural population is much bigger than the published percentage. of the 32 respondents, there are 25 respondents with connection to rural area.

On the other hand, the prosperity of the city and the poverty of the rural area make rural residents think the city should take more responsibility in public life. First, the development of the city is at the expense of the peasants' welfare. China's Reform and Opening-up Policy since 1978 declares part of the regions and people can become rich first, then drive and help other regions and other people, and gradually achieve common prosperity. This policy gives many preferential measures to that part of regions and people and the rest parts make great sacrifice. It leads to a huge rural-urban economic disparity after 30 year's development and peasants' growing dissatisfaction with current situation. Second, the contrast in living conditions between cities and rural areas also makes them feel cities should shoulder more responsibilities. To begin with gap in transportation, the main transport mode in rural areas nowadays is still by foot, while many urban families owned cars. Second, the gap in heating or burning material of households, part of the rural areas still rely on wood or straw for cooking or heating, while urban families have used natural gas and electricity for many years, although electricity is also available in countryside, the high electricity price relative to rural residents relative low income prevent its extensive use. Third, gap in the contribution to afforest, many farmers grow crops or trees which absorb carbon dioxide, while urban people almost only generate carbon emissions. Fourth, gap in information, the Internet is not widely used in country side, residents there inevitably suffer losses for lacking of information, while it's so convenient for urban people to access Internet. Based on the above reasons, the first opinion respondents held was that the city should assume more responsibility for carbon emissions than rural areas.

Their second opinion was that enterprises should bear more responsibilities than individuals for carbon emissions. The amount of carbon emissions from enterprises is much larger than that of individuals; China should restrict the enterprise first. In fact, the current carbon trading policy in China acts only on companies. It is estimated, however, that individuals are responsible for around 40% of the UK's carbon dioxide emissions (Defra,2008). When we call for companies to take responsibilities, we should also assume our own duty.

5. Conclusion

Although many individuals thought they should be responsible for climate change and environmental degradation, most of them argues that companies should be more responsible for carbon emissions. Meanwhile, cities were also expected to take more responsibilities than rural areas.

In comparison with carbon taxes, 28 respondents among 32 samples thought PCT was a good proposal in the interview. This mainly attributes to the characteristics of PCT itself, such as the fairness, effectiveness, and also adequate education on environment issues.

The reasons for opposing PCT include internal weakness of PCT, such as low efficiency and complexity, the problems in its implementation, and lack of basic facilities in rural areas，the scarce support from other fields, such as legal protection, service of intermediary institutions has barely started. All these challenge the implementation of the PCT.

We also drew some interesting conclusions of social acceptability of PCT by comparing China and other countries. First, in China, unlike European countries, people's suspect towards government does affect their attitudes towards PCT. Second, China's academic research falls far behind the UK, and third, people's focus on PCT is different.

However, as the respondents' admitted, they simply wanted to give the PCT spiritual support rather than practical actions. In the end, we find although social acceptability of PCT is high in China, yet it's not suitable to introduce personal carbon trading in current situation. We conclude that the research on its social acceptability is ahead of time.

6. Recommendations

The research on PCT's social acceptability remains immature in both quantity and depth. Most of the relevant researches merely serve as a sub-topic of the whole PCT subject. More researches specializing on the subject are in urgent need.

Focus study, like other research methods, inevitably has strengths and weaknesses. Its strengths, which are why we used it as the research method of this article, have been discussed earlier. One of the main weaknesses of it is that the limited sample size brings risks to applying the result to a larger scope. So we'd better combine statistical methods to accurately investigate the attitudes of the Chinese and evaluate this potential risk.

Although many countries have started their studies on social acceptability of PCT, only UK's study is at a relatively higher level. This limits the variability and applicability of the study. Only when more countries start

to do in-depth study and contribute diversified data, the study could possibly become comprehensive and systematic.

References

Agarwal, A., &Narain, S. (1991). "Global warming in an unequal world: A case of environmental colonialism." in Global warming in an unequal world: a case of environmental colonialism: Centre for Science and Environment.

Anon, (2004).Domestic Tradable Quotas (Carbon Emissions) Bill, 53/3. House of Commons, London.

Bristow, A. L., Wardman, M., Zanni, A. M., &Chintakayala P. K. (2010). "*Public acceptability of personal carbon trading and carbon tax*." Ecological Economics 69(9), 1824-1837.

Defra, 2008. Synthesis Report on the Findings from Defra's Pre-Feasibility Study into Personal Carbon Trading. Department for Environment, Food and Rural Affairs, London.

Fawcett, T., Hvelplund, F., & Meyer, N. I. (2009). "*Making it personal: per capita carbon allowances*." Generating Electricity in a Carbon-Constrained World, Academic Press, imprint of Elsevier, Burlington, MA, 87-107.

Fawcett, T. (2010a). "*Personal carbon trading in different national contexts*." Climate Policy 10(4), 339-352.

Fawcett, T. (2010b). "*Personal carbon trading: A policy ahead of its time*?" Energy Policy 38(11), 6868-6876.

Fawcett, T. (2012). "*Personal carbon trading: is now the right time*?" Carbon Management 3(3), 283-291.

Fleming, D. (1997). Tradable quotas: Setting limits to carbon emissions: Lean Economy Initiative, Elm Farm Research Centre.

Fleming, D., & Connection, L. E. (2006). *Energy and the common purpose: Descending the energy staircase with tradable energy quotas (TEQs):* Lean Economy Connection.

Harwatt, H. (2008). "*Reducing carbon emissions from personal road transport through the application of a tradable carbon permit scheme: Empirical findings and policy implications from the UK*." Institute for Transport Studies, University of Leeds, 2008.

Hillman, M. (1998). "*Carbon budget watchers: the implications for individual lifestyles*." Town and country planning-london-town and country planning association-67, 305.

Hillman, M., & Fawcett, T. (2005). "*Living in a Low Carbon World-The Policy Implications of Rationing*." Policy Studies Institute, UK Energy Research Centre.

Hillman, M., & Fawcett, T. (2004). How We Can Save the Planet: Penguin Adult.

Hillman, M. (2008). How We Can Save the Planet: Preventing Global Climate Catastrophe: Macmillan.

Howell, R. (2007). "*Would personal carbon allowances be acceptable to the UK public as a means of reducing individuals'* carbon dioxide emissions." Unpublished MSc dissertation. University of Edinburgh.

Jagers, S. C., Löfgren, Å., &Stripple, J. (2010). "*Attitudes to personal carbon allowances: political trust, fairness and ideology*." Climate Policy 10(4), 410-431.

Junxiu, W. (2013-01-23). *Annual Report on Development of Auto Society in China (2012~2013).*Beijing Social Sciences Academic Press.

Kitzinger, J. (1995). "*Qualitative research: introducing focus groups*." BMJ 311(7000), 299-302.

Kondyli, A., &Elefteriadou, L. (2009). "*Driver behavior at freeway-ramp merging areas*." Transportation Research Record: Journal of the Transportation Research Board 2124(1), 157-166.

Krueger, R. A., & Casey, M. A. (2000). *Focus Groups: A Practical Guide for Applied Research*: SAGE Publications.

Hillman, M., & Fawcett, T. (2005). "*Living in a Low Carbon World–The Policy Implications of Rationing*." Policy Studies Institute, UK Energy Research Centre.

Levett, R. (2005). "*Carbon rationing versus energy taxes: a false opposition?*" Policy Studies Institute, UK Energy Research Centre.

Loukopoulos, P., Jakobsson, C., Gärling, T., Schneider, C. M., &Fujii, S. (2004). "*Car-user responses to travel demand management measures: goal setting and choice of adaptation alternatives."* Transportation Research Part D: Transport and Environment 9(4), 263-280.

Maplecroft. (2009)Maplecroft Climate Change Risk Report 2009/2010. Global Risk Analysis Company：Maplecroft.

Meyer, A. (2000). Contraction & convergence: the global solution to climate change: Green Books.

Miliband, D. (2006). *"Environment, food and rural affairs: House of Commons Debate* 14 December 2006." Hansard, London.

Morgan, D. L. (1997*). Focus Groups as Qualitative Research:* SAGE Publications.

National Bureau of Statistics.(2011).*Main Data Bulletin of the Sixth National Population Census in* 2010 (No. 1).Can be downloaded at: http://www.stats.gov.cn/tjsj/tjgb/rkpcgb/qgrkpcgb/201104/t20110428_30327.html

Niemeier, D., Gould, G., Karner, A., Hixson, M., Bachmann, B., Okma, C., Lang, Z., &Heres Del Valle, D. (2008). "*Rethinking downstream regulation: California's opportunity to engage households in reducing*

greenhouse gases." Energy Policy 36(9), 3436-3447.
Owen, L., Edgar, L., Prince, S., &Doble, C. (2008). "*Personal carbon trading: public acceptability: a report to the Department for Environment, Food and Rural Affairs.*" Opinion Leader &Enviros Consulting, London.
Starkey, R., & Anderson, K. (2005). Domestic Tradable Quotas: A policy instrument for reducing greenhouse gas emissions from energy use: Tyndall Centre for Climate Change Research Norwich, UK.
Wallace, A. A., Irvine, K. N., Wright, A. J., & Fleming, P. D. (2010). *"Public attitudes to personal carbon allowances: findings from a mixed-method study.*" Climate Policy 10(4), 385-409.
Varnäs, A., &Nykvist, B. (2009). "*Effects of personal carbon trading."* Making a Difference: Putting Consumer Citizenship into Action, 33.
Von Knobelsdorff, M. (2008). "*Public acceptability of personal carbon trading. "*Unpublished MSc dissertation. Cambridge University.

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