

## Explaining public participation in environmental governance in China

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### Abstract

This article uses nationwide survey data to answer two questions: who participates in environmental governance in China and why? First, it explores the social structural characteristics that distinguish participants, and finds that city dwellers, the more educated, those with higher incomes and higher social status are more likely to participate while women, the elderly, those with rural residence registration and migrants are less likely. Then it tests two main explanations about why people participate in environmental governance— instrumentality and identity. Participation is associated with attention to conservation issues, the perceived effectiveness of local environmental governance, knowledge of environmental problems, reading newspapers and magazines, voting in local elections, identification with a middle-class lifestyle and observance of Western holidays. Combining the analyses into a structural model shows that instrumental and identity-related variables account for nearly all of the social structural variation in participation. Participation is thus a function both of instrumental considerations and identities.

Key words: participation, environmental governance, China, instrumentality, identity

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## Introduction

In environmental governance, it has been proposed that looking at who the participants are and what motivates them to participate might provide a way of understanding how and when collaborative governance approaches are effective (Bodin 2017: 1f). Understanding who participates and why is thus an important prerequisite for evaluating the importance of public participation. This article seeks to address both of these questions with respect to non-contentious forms of participation under the world's leading authoritarian regime, the People's Republic of China.

The literature on the determinants of public participation in environmental governance mostly deals with participation in democracies. Although early studies focussed on selective costs and benefits (Olson 1965) and on resources as explanations (McAdam 1988), these approaches have been superseded by instrumental or 'collective interest' explanations in which resources count as only one of the factors reducing the selective costs of participation, and in which collective benefits to the community are of equal or greater importance than selective benefits to individuals (Finkel et al. 1989; Finkel et al. 1998; Lubell 2002). Media use has been recognised as an important catalyst of participation (Gamson 1992; Wagner 2007) and identity has been identified as another key driver (Van Stekelenburg & Klandermans 2010). Participation in environmental governance under authoritarian regimes has generally been neglected.

The literature on the determinants of participation sometimes confuses the 'who' and 'why' questions. This has prevented a better understanding the relationship between the kinds of people who participate and their motivations for doing so. For example, in Lubell's (2002: 433) 'collective interest' model of public participation, social structural variables such as income, education, age, gender and ethnic minority status are slotted into an equation for the

expected value of participation by treating them as variables affecting selective costs. Lubell explains (2002: 437) that costs should be lower for educated citizens because they have more ‘civic skills,’ for young people and for women because they have more time and for ethnic majorities because they face less discrimination. Although he finds evidence to support his hypotheses about education, youth and majority status in the general population of the US (2002: 443f), these data do not actually tell us that the reasons why these groups participate more are the reasons which he proposes. Differentials in participation across the social structure give us answers to the question of who participates, but they do not tell us why these differentials exist. Although various explanations have been deployed in studies of participation, there exists no empirical study which looks at the who and why questions as two sides of the same coin and tries to specify the relationships between them.

Given the Chinese government’s focus on increasing popular participation in environmental governance, and intriguing evidence that participation may sometimes ‘work’ (see below) there is a need for empirical research on the nature of participation. Individuals are the basic unit of analysis, for it is they who through their decisions and preferences drive the dynamics of any system where power is distributed (Aligica 2009: 23f). If we are dealing with a system which is designed to function with popular participation, the relevant individuals are members of the public.

The present study takes a conventional approach—analysis of a representative nationwide sample survey—using a recursive form of censored regression which makes simple but realistic assumptions about the structural relations amongst the independent variables. It models both their substantive ‘impact’ and statistical significance.

The study first explores who participates against a standard battery of social structural determinants. It finds that participation is more common amongst city dwellers, the more

educated, those with higher incomes and higher social status and less common amongst women, the elderly, those with rural residence registration and migrants. It tests two main explanations about why people participate—instrumentality and identity. Attention to conservation issues, the perceived effectiveness of local environmental governance, knowledge of environmental problems, the habit of reading newspapers and magazines and voting in local elections are all positively associated with participation. In terms of identities, identification with a middle-class lifestyle and observance of Western holidays show significant positive associations. Structural modelling shows that instrumental and identity-related variables account for nearly all of the social structural variation in participation.

The rest of this article is structured as follows. The next two sections briefly discuss the institutional context of participation in China including the definition of participation, the kinds of participation mandated by government policy, and evidence that participation ‘works’ in the sense of producing better environmental outcomes. Then the article summarises the literature on the determinants of participation and proposes hypotheses, introduces the data and method, and presents results. The final two sections discuss the significance of the results and offer conclusions.

### What Is Public Participation in Environmental Governance in China?

For some authors, the key criterion of participation is the intention of the participants: it thus consists of ‘actions undertaken by ordinary citizens that are intended, directly or indirectly, to influence the selection of government personnel and/or the policy decisions they make’ (Bennett and Bennett 1986: 160). Others focus on the expansion of the ‘normal’ decision-making forum to include ‘actors who are not routinely engaged’ (Fritsch and Newig

2012: 183). Still others emphasise empowerment as a definitional criterion for true participation (Rowe and Frewer 2004: 515).

Following in the same vein, some scholars focus not on participation itself but on its function in governance systems. Understanding the function of participation is not a simple matter either. Participation may achieve no practical result beyond enhancing the governance system's capacity for reflexivity, or ability to 'reconfigure themselves in response to reflection on performance' (Dryzek and Pickering 2017: 353). Participation may be meaningful only as an opportunity for citizens to claim the 'power to define social problems and construct the identities and interests of particular social groups' (Gleiss et al. 2018: 4). Even in cases where there is not an obvious 'way in' to the forum where policy decisions are made, participation may still serve a legitimating function.

Participation in an authoritarian context requires attention to subtle distinctions of style, tone, approach or issue area which can radically change the government's attitude to a particular instance of participation. In China for example, Johnson (2010: 430) contrasts 'rules-based' environmental activism, using channels for public participation provided in legislation, with 'not-in-my-backyard' (NIMBY) activism which sometimes makes use of contentious tactics including protests. Authorities have been more tolerant of the NIMBY activists, even though their activities are contentious, because their concerns are seen as having local rather than national significance. Activists may engage in 'boundary-spanning' protests which walk a fine line between provoking the authorities and using the law to force them to act contrary to their original intentions (O'Brien and Li 2006), and at other times they may choose to play it safe by only engaging in participation explicitly sanctioned by the government. This article is mainly concerned with non-contentious forms of participation.

Since the beginning of this century, a body of legislation has emerged which not only encourages but requires Chinese officials to involve the public in environmental decision-making (Zhang and Wen 2008; Johnson 2010: 431). The government appears to be pursuing two goals: to close the ‘enforcement gap’ by involving the public in policy implementation, and to steer public concern into channels that enhance the legitimacy of the Communist Party and reduce societal conflict (Grano 2016: 132). Public participation first began to be implemented as public hearings or consultations on such matters as environmental assessment, administrative penalties and urban water tariff setting (Bina 2008: 722; Zhong and Mol 2008: 900). This has coincided with an expansion of online participation via public comment and contacting of officials through social media and other digital platforms (Ma et al. 2009: 77).

The current national legislation and policy measures mandate the spread of public participation across the country. Examples of recent measures include the Guidance on Promoting Public Participation issued by the Ministry of Environmental Protection (now the Ministry of Ecology and Environment) in 2014, and the Measures for Public Participation issued by the same ministry in 2015. These build upon a framework of legislation which provides for public consultation, such as the 2000 Legislation Law (revised in 2015), the 1989 Environmental Protection Law (revised in 2015), and the 2002 Environmental Impact Assessment (EIA) Law (revised in 2016). Emerging common practices include public disclosure of environmental pollution information and environmental quality data, public participation in siting decisions for projects and in the identification of polluting enterprises to be shut down, the provision of public complaint lines, ‘public interest’ environmental litigation (even though normally led by prosecutors and government agencies, with only selected NGOs allowed to pursue it), and public participation in setting standards.

Participation is now placed at the centre of proposals for the reform of China's environmental governance (Bergkamp and Xu 2017).

Case studies have raised questions about the quality of implementation of public participation. For example, Tang et al. (2008) carried out a study of social impact assessment and public participation in land requisitions in Guangzhou. Alongside open and transparent systems for valuing property and compensating villagers, and such participatory mechanisms as hotlines, suggestion boxes, public meetings and consultation with village representatives, the local authorities also used such 'mind-engineering' techniques as co-opting opinion leaders such as village officials and clans leaders, exploiting *guanxi* ties into the village, awarding extra payments to those who signed over their land early, pressuring a lawyer not to represent the villagers, and organising high profile visits by senior leaders. Johnson et al. (2018) carried out a case study of environmental impact assessment (EIA) and public participation in a decision on the siting of a waste incineration plant in Hebei province. There, community campaigners discovered evidence of systematic fraud in the public participation element of the EIA, and with the help of a network of activists from Beijing, were able to launch a successful legal challenge leading to suspension of the project as well as highlight widespread problems with the EIA process for a national audience.

### The Impact of Participation in Environmental Governance

In China, at the end of the twentieth century, leading scholars held that public participation in environmental governance was of little note because NGOs were tightly controlled, and the population too indifferent to play any significant role (Lo and Leung 2000: 679). Indeed, the first large scale survey of environmental awareness, conducted by the Research Centre for Contemporary China in 1998, showed that the population's

understanding of environmental issues, the priority assigned to them, acceptance of shared responsibility with government and levels of participation were all very low (Wong 2005: 41-44). In the view of one author, China had an ‘anthropocentric’ world view (Harris 2004: 147). However, it has been argued that China’s traditional value system, Confucianism, is compatible with strong environmental ethics (Nuyen 2011: 550).

Does participation matter in terms of environmental outcomes? Wang (2013: 370) argues that China’s environmental protection efforts are one way in which the Chinese regime attempts to enhance its legitimacy, but their effects are not confined to legitimacy. He contends (2013: 381) that the chief mechanism for promoting environmental protection is the cadre evaluation system, which determines promotion criteria for all senior public officials in China. The system includes three basic types of targets, distinguished by their degree of obligatoriness: soft targets (*zhidaoxing zhibiao*), hard targets (*ying zhibiao*), and veto targets (*yipiao foujue mubiao*). From the beginning of the 11<sup>th</sup> five-year plan (2006-2010), environmental targets were increasingly classified as binding, and some even as veto targets. Wang (2013: 372) further argues that ‘public supervision’ reforms including public participation as well as measures to promote transparency and broaden the possibilities of public interest litigation, are among the most significant measures in support of the cadre evaluation reforms. This is because public supervision is aimed at addressing the principal-agent problems inherent in the use of cadre evaluation, such as ‘goal specification, goal displacement, data falsification and collusion’ (2013: 374). Public participation adds an extra layer of accountability. In theory, this could mean both more accountability to the central government, because public supervision can short circuit the reporting chain, and more accountability to the public, because participation provides various means for them to voice concerns. Compared to the top-down accountability of bureaucratic monitoring systems and

to market incentives, Wang argues that public supervision is a ‘more diffuse and independent accountability that is less susceptible to gaming and political manipulation’ (2013: 439).

There is some, albeit not entirely conclusive, evidence that public participation produces positive environmental outcomes, at least at the aggregate level of provinces. Wu et al. (2018) tested the effects of letters and visits and numbers of NGOs on two air and two water pollution indicators, controlling for whether or not the province had implemented performance assessment, its GDP per capita, industrial structure, foreign investment and size of fiscal deficit. They found (2018: 235) that the number of petitions reduced wastewater, but not other types of pollution. Zhang and Chen (2018) studied the impact on pollution of numbers of complaints per capita, controlling for government investment in pollution control, industrial investment in pollution prevention, the proportion of FDI in GDP and the proportion of the technological market turnover in GDP. They found (2018: 12-14) that participation was associated with less pollution for each of four types of pollution, SO<sub>2</sub>, NO<sub>x</sub>, COD and NH<sub>4</sub>. SO<sub>2</sub> pollution fell more sharply than water pollution, with more and stronger pollution reducing effects in the eastern region than in central and western China. Moreover, the effects of participation on reduction of SO<sub>2</sub> was stronger than the effects of government and enterprise investment in pollution reduction.

#### Literature on Determinants of Participation and Hypotheses

It is a staple of the participation literature that an individual’s resources determine his or her availability and capability to participate (McAdam 1988). In a study of environmental activism using the US General Social Survey (GSS) and local survey data, Lubell (2002) treated resources as elements affecting selective costs of participation. He found (2002: 443) that youth and education have positive effects.

The empirical literature on Chinese participation tends to confirm that position in the social structure matters, but how it matters seems to depend in part on the degree to which participation is contentious. Thus, Munro (2013) used China General Social Survey (CGSS) data from 2006 to explain willingness to join environmental NGOs. Similar to Lubell's study, he found (2013: 69) found that youth and education were associated with more willingness to join environmental NGOs. However, Zeng et al. (2018) used 2010 CGSS data to explain whether or not respondents who were aware of protests, strikes, boycotts or other forms of collective action, took part either as an organizer, participant or supporter. They found (2018: 1568) that education was associated with less involvement in collective action and age had no effect. Alongside age and education, we need to consider gender, social status, income, urbanisation and, in China, whether the individual has an agricultural or non-agricultural residence registration (*hukou*) and has migrated from their home town or province.<sup>1</sup> Higher income presumably makes public participation easier to afford, but it may also define class interests which militate against joining environmental causes. Munro (2013: 68) found that income associated with less willingness to join environmental NGOs, but Zeng et al. (2018: 1568) found it had no effect. We can note that in Liu et al.'s (2018: 29) survey-based study of protest, petitioning, and taking part in cyber discussions and community meetings to resist locally unpopular land use (LULU) decisions in Hong Kong, income was associated with greater willingness to get involved in protests. Since we are mainly dealing with non-contentious forms of participation in this article, the following hypothesis is proposed: *(H1) people occupying favourable positions in the social structure (men, youth, non-migrants, those with non-agricultural residence registration, living closer to city and town centres, with*

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<sup>1</sup> Type and location of hukou registration determines access to local services in China. The agricultural/non-agricultural distinction, sometimes called 'rural/urban,' was abandoned in 2014, but place of registration still determines access to services in most locations.

*higher status and incomes and more education) are more likely to participate in environmental governance.*

Van Stekelenburg and Klandermans (2010: 179) point to instrumental motives as a key driver of participation. Lubell's (2002: 433) formula for calculating the expected value of participation includes both selective and collective benefits, as well as a term for efficacy. This approach builds on work by Olson (1965) who argued that motives mainly take the form of selective benefits, available to the participant only, and also on work by Finkel et al. (1989, 1998), who argued that collective benefits are equally important. Lubell (2002: 443) finds that severity of environmental threat and personal efficacy, treated as part of the collective benefit of participation, as well as environmental values and environmental knowledge, treated as part of selective benefits and costs respectively, are predictors of activism and intended activism in the US.

Studies of public participation in China provide some support to the instrumental explanation. Munro (2013: 68) found that the belief that oneself or one's family has suffered harm from pollution, identification of the local environment as a priority, satisfaction with the neighbourhood and recognition of the seriousness of global environmental problems were all associated with willingness to join environmental NGOs. Zeng et al. (2018: 1568) found that having an interest in an issue predicted taking part in collective action. Case-based studies likewise emphasise the importance of collective interests (Li et al. 2012: 66). Liu et al. (2018: 28-32) found that seeing oneself as a victim of a LULU siting decision predicted participation in protests in Hong Kong, as did area of residence and distance from the site (Liu et al. 2018: 32). Instrumental explanations lead to the following hypotheses: *(H2a) people who assign environmental issues a high priority, and/or (H2b) positively evaluate the environmental*

*capacity of the local authorities, and/or (H2c) are knowledgeable of environmental issues are more likely to participate in environmental governance.*

Media use exposes people to collective action frames which can inspire and legitimate participation (Gamson 1992; Wagner 2007). Steinhardt (2015) argued that in the first decade of this century the Chinese mass media increasingly took a sympathetic attitude towards protest activities, reflecting structural transformations in the public sphere, and taking advantage of a shift from censorship to pro-active propaganda. Munro (2013: 69) found that frequency of reading periodicals and watching television predicted willingness to join environmental NGOs in China. Media use can be thought of as part of the selective costs term of Lubell's equation: people participate because they have been cued, stimulated, mobilised or inspired by the information they receive from the mass media, thus lowering their threshold for action. This leads to: *(H2d) people who engage with the media intensively are more likely to participate in environmental governance.*

Political engagement in spheres other than environmental governance can be expected to enhance an individual's efficacy, as the experience gained is presumably transferable. Munro (2013: 68) found that those who expressed in willingness to vote, recommend a candidate, or attend sessions of the local people's congress were more willing to join environmental NGOs in China. 'Bridging' social capital which links different communities and, within that category, social capital which links people across power gradients in society is thought to be especially useful in sustaining capacity for collective action (Sztreter and Woolcock 2003: 129). Munro (2013: 69) found that Communist Party membership and knowing public sector workers enhanced willingness to join environmental NGOs. However, Zeng et al. (2018: 1568) found that Communist Party membership had no significant association with involvement in collective action. Given that this article is focussed on non-

contentious forms of participation, we would expect that: *(H2e) people who participate politically in other spheres and (H2f) Communist Party members are more likely to participate in environmental governance.*

Van Stekelenburg and Klandermans (2010: 179) point to social identity as a key driver of participation. Identity is thought to provide the basis for collectively experienced emotions linking perceived injustice to the need for collective action, for politicising such action, channelling it into specific forms of organization, and for predicting structural and incidental collective disadvantage (Van Zomeren et al. 2008: 510). Tsang and Lee (2013) note the connection between middle-class identity and environmental NGOs in China, although they exhibit scepticism about the genuineness of these NGOs' social conscience. Rocca (2017: 175) has pointed to the connection between 'middle-class' identity, Inglehart's (1990) concept of 'postmaterial' values and environmentalism. According to this line of argument, China's emergent 'middle-class' has satisfied their basic material needs, and internalised some 'higher' aspirations, including a better environment.

The problem with using the term 'middle-class' in China is that it has no agreed definition. While a variety of objective and subjective criteria have been proposed—for a review see Miao (2017)—none is fully satisfactory. As Rocca (2017: 11) puts it the middle-class 'is less a group of people than a way of thinking and foreseeing the structures of Chinese society, a part of the new social imaginary China is elaborating.' Goodman (2014: 49) argues that the middle-class is 'more a discourse than social structure.' Since we have already considered the role of social structure, which includes both income and social status, the missing dimensions of discourse which capture 'middle-classness' need to be defined.

Two dimensions appear salient in the literature. The first is the extent to which Chinese citizens identify themselves as middle-class (Zhang 2017). This is related to what

Weber calls an ‘acquisition class,’ determined by the opportunity its members have to ‘exploit services in the market’ (Weber 1947: 424). The context for this is that China’s period of ‘Reform and Opening Up’ in the 1980s and 1990s coincided with neoliberal economic policies which delivered improved standards of living and allowed some Chinese to enjoy high consumption lifestyles (Nonini 2008). As Simpson (2014: 827) argues, this development trajectory has demanded from its citizens that they ‘re-imagine’ themselves, no longer as workers and peasants, but as global consumers, able to afford a high quality of life. Consumption for this class may be not an end in itself, but a marker of identity.

The second important discursive dimension of ‘middle-classness’ is the degree to which citizens identify with what in the Chinese context is sometimes called ‘joining rails’ (*jiegui*), meaning catching up with global trends. The associations between development, environmentalism and globalisation in the sense of ‘joining the world’ became a part of the Communist Party’s constitution in 2017, with the adoption of the concept of the ‘community of common destiny’ (Lams 2018). However, the association was evident in Chinese discourse long before that. Munro (2013: 69) found that support for China’s involvement in UN peacekeeping missions, sending medical teams to Africa and acceptance of foreign books, films and music were all associated with greater willingness to join environmental NGOs. We can see in this example the associations between environmentalism, openness to foreign cultures and acceptance of the political demands of globalisation. On the basis of the foregoing discussion, we can offer the following two hypotheses: *(H3a) people who identify themselves with a middle-class lifestyle and (H3b) people with a ‘cosmopolitan’ identity are more likely to participate in environmental governance.*

Data and Method

This study uses data from the China General Social Survey (CGSS) of 2013, conducted by Professor Li Lulu's team at Renmin University of China (<http://cgss.ruc.edu.cn>). Part of an annual programme running since 2003, CGSS focusses on economic conditions and value change. The 2013 round included a module on participation in environmental governance.<sup>2</sup> The survey targeted adults age 18 and over, using face to face interviews. The sample was designed in two parts. First, a core group of 36 provincial-level cities, provincial capitals and important second tier cities were chosen based on their GDP, numbers of teachers per capita and level of foreign direct investment. This included the five biggest cities: Beijing, Shanghai, Guangzhou, Shenzhen and Tianjin. Within the 36 cities, a three-stage random sampling process identified streets, neighbourhoods and households, with an overall target of 2000 households. Second, a further 19 cities and 31 counties from those outside the core group were randomly selected with probability of being selected weighted by their factor score computed from population density, urban population ratio and GDP per capita. Within each of these PPS sampling identified streets or townships, villages or neighbourhoods; and households, with a target of 10,000 households. The proportion of urban to rural households was set at a ratio of 6:4, and target sample sizes were adjusted to make up for differential response rates across the various strata. These procedures resulted in a sample covering 28 provinces and provincial-level cities; 127 counties, county-level cities or districts; 350 townships or streets; and 452 villages or neighbourhoods. The unweighted sample size was 10,724 respondents. With post-stratification weights applied to achieve a closer match to census data, the effective sample size was 10,746. The response rate was 72.2%. For reasons of 'secrecy,' the names of the jurisdictions at county level and below were suppressed from the publicly available version of the file.<sup>3</sup>

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<sup>2</sup> The 2015 round of CGSS, which is the latest publicly available dataset, did not include any of these questions.

<sup>3</sup> Email communication from CGSS ([cgss@ruc.edu.cn](mailto:cgss@ruc.edu.cn)) dated 14 January 2019.

The survey included the following item: *Q. I would like to ask, in the past year have you engaged in any of the following activities or behaviours? (Never; Sometimes; Often):*

*Refuse sorting; Discussing environmental problems with friends and relatives; Taking a shopping basket or bag with you when going shopping for necessities; Re-using plastic bags; Donating money to environmental protection; Seeking out broadcasts, TV programmes and news reports on environmental issues and environmental information; Enthusiastically joining environmental education activities organised by government or your employer; Enthusiastically taking part in environmental protection activities organised by NGOs; Cultivating trees or green spaces at own expense; Enthusiastically joining environmental petitions and lawsuits.* None of these activities are contentious, with the possible exception of the last depending on the target of the petition or lawsuit and the nature of the respondent's involvement. The survey item thus focusses on forms of participation which are mandated by the authorities as well as on environmentally responsible behaviours. Replies are summarised in Table 1.

[Table 1 about here]

A principal components analysis shows that the different forms of participation correlate with two main factors (Table 2). Five forms of participation correlate at above 0.60 with the first factor. These are: taking part in environmental protection activities organised by NGOs, taking part in environmental education activities organised by government or by employers, joining environmental petitions or lawsuits, donating money to environmental causes and taking part in tree planting or cultivation of green spaces at one's own expense. These actions all involve some kind of organizational effort directed at influencing others through example or advocacy to protect the environment and are not simply individual consumer behaviours. The intention to influence is a feature shared in common with Lubell's

(2002) measure of participation in the US, which tapped being a member of a group that aims to protect the environment, signing an environmentalist petition and taking part in a protest or demonstration on an environmental issue. Two forms of participation correlate at above 0.60 with the second factor. Both are concerned with the reduction of plastic bag waste. The remaining three behaviours—discussing environmental issues, refuse sorting and following environmental issues in the media—cross-load on both factors, although more strongly with the second than the first. The variables loading stronger on the second factor are thus more concerned with personal consumption and lifestyle choices than with influencing.

[Table 2 about here]

To construct a measure of participation in environmental governance, the five items loading on the first factor are averaged, with ‘never’ coded zero, ‘sometimes’ coded one, and ‘often’ coded two, producing a scale from zero to two, with a Cronbach’s alpha score of 0.76 indicating good reliability (Table 3). On this scale, the median respondent scores zero and the mean respondent scores 0.19, with a standard deviation of 0.32.

[Table 3 about here]

The hypotheses are operationalised with a selection of measures commonly used in Chinese social science surveys. Hypothesis 1 is tested with gender, age, social status, income quintile and education scales. In addition, the measures include whether or not the respondent has rural residence registration (*hukou*) and whether he or she is a migrant from another city or county. Hypothesis 2a concerning environmental priority is tested using a question on whether respondents have heard of a list of 12 environmental problems and how serious they are. Principal components analysis shows that these problems load on two factors: the first is concerned with pollution issues and the second with nature conservation. Scores for the seriousness of the problems loading on a common factor are multiplied by the answer for

whether the respondent has heard of each, and then the products are averaged to form scales (see note 1 in Table 4). Hypothesis 2b concerning performance uses an assessment of local government environmental capacity, and Hypothesis 2c uses a measure of knowledge of environmental problems. Hypothesis 2d draws on a set of measures of frequency of use of print media, television and the internet. Hypotheses 2e is tested by whether the respondent voted in the most recent village committee or community council elections, which are the highest level at which electoral competition is allowed in China. Hypothesis 2f is tested by whether the respondent a Communist Party or Communist Youth League member.

Hypotheses 3a and 3b concerning ‘middle-class’ identity and cosmopolitanism draw on two multi-item scales. The first is a measure of whether the respondent identifies with the type of high consumption lifestyle which has only recently become available to people with good paid employment or independent sources of income. It is based on a list of 13 statements, six of which concern a high consumption lifestyle and load on a common factor in a principal component analysis (see note 5 in Table 4). The items exhibit good reliability (Cronbach’s alpha 0.82) and so are used to form a scale. The second scale is a measure of ‘cosmopolitanism’ based on whether the respondent celebrates five Western holidays from a list of 14 traditional and Western holidays. Again, celebrating these five holidays shows good reliability (Cronbach’s alpha 0.79). Details of coding, scale construction, and summary statistics for all the independent variables are given in Table 4 below.

[Table 4 about here]

The author uses maximum likelihood estimation with robust standard errors to carry out two regression analyses which are censored from below on the assumption that participation can never fall below ‘zero.’ The first regression focuses on the ‘who’ question and includes only the social structural determinants needed to test Hypothesis 1. The second

focuses on the ‘why’ question and includes also the instrumental and identity measures needed to test Hypotheses 2a-f and 3a and 3b. To identify and remove influential cases, Cooks Distance was calculated for the second model and the model was then re-run repeatedly to discover the threshold value above which the inclusion of the outliers caused changes in the significant variables. Twenty-four influential cases were then excluded from the analysis.

The second model assumes that social structural determinants can have indirect effects via the other variables in the model, with the coefficient for an indirect path being computed as the product of the coefficients of the connecting paths. All other effects are assumed to be direct. Because of the large N of the survey, the minimum significance level is set at  $P < .01$ .

## Results

The results support Hypothesis 1 because the effects of social structure are substantial and in the expected directions (Table 5). Since all the social structural variables except rural residence registration and urbanisation are significant at .01 level in Model 1, we can conclude that participation in environmental governance is highly structured. Women, the elderly and migrants are less likely to participate, while those with higher social status, income and education are more likely to participate.

To understand the reasons for participation, we need to look at Model 2. All of the social structural effects except for migrant status lose significance, which suggests that who participates is almost completely accounted for by the instrumental and identity explanations. In terms of instrumentality, the seriousness of conservation issues, local government

environmental capacity, reading newspapers and magazines, voting and Communist Party membership are positive influences, and watching television is a negative influence. All these findings, except the last, confirm the hypotheses. In terms of identity, both middle-class lifestyle and cosmopolitanism have significant effects in the expected directions, again confirming the hypotheses.

Model 2 allows for indirect effects, since all of the social structural variables are assumed to influence the ‘instrumentality’ and ‘identity’ variables. This allows us to gauge the direct and indirect effects of all the variables and compare their magnitude by computing impacts, calculated as the mean of the independent variable multiplied by the sum of the estimates for all direct and indirect effects significant at .01 level. This procedure shows that the biggest positive impacts are from middle-class lifestyle (impact .38), education (impact .28), reading newspapers and magazines (.21), local government environmental capacity (.10), the seriousness of conservation issues (.09), self-assessed social status (.09) and urbanisation (.05), and the biggest negative impacts are from watching television (-.09) and age (-.07), with rural residence registration and migrant status as minor negative influences (-.02) and female gender as a cross-pressured influence with a small net negative effect (-.01). The notes in the Table detail which intervening variables mediate the indirect effects of social structure.

[Table 5 about here]

## Discussion

Confirmation of the instrumental hypotheses does not distinguish China much from, for example, US environmental participation as analysed by Lubell (2002). This is not surprising in the light of the studies reviewed above which suggested that participation ‘works’ in the sense of sometimes producing better environmental outcomes. It would only

be a surprise if our prior expectations were that participation under an authoritarian regime is all a charade, aimed at legitimising the government, and does not really affect outcomes.

Lubell's rationalistic explanation of why people participate is therefore to some extent applicable in China, once one allows for the more conservative nature of Chinese society, and its more restrictive approach to participation. More broadly, the analysis corroborates instrumental models of political participation based on assumptions that people participate in order to pursue collective benefits (Finkel et al. 1989; Finkel and Muller 1998).

The non-confrontational, government-led nature of most participation in China's environmental governance is underlined by the positive association between government environmental capacity and participation. We can interpret this as an indirect corroboration of Johnson's (2010) distinction between 'rules-based' environmental activism, which has worked with the spirit of government legislation to institutionalise public participation, and NIMBYism, which has occasionally adopted more contentious tactics to force local officials to adhere to procedural rules allowing participation. However, just as 'environmental distribution conflicts' have from time to time exposed sub-standard forms of participation which aim to frustrate rather than facilitate genuine public input into decision-making (Johnson et al. 2018), we can also interpret the finding to mean that those who give a low evaluation to government capacity may stay away from public participation.

Scholars have argued that the Chinese mass media, as a servant of the Chinese government, has promoted efforts to expand orderly participation in environmental governance (Ma et al. 2009; Steinhardt 2015). A study using comparable data from the US and China found that breadth of media use associated positively with local and global environmental concern and willingness to sacrifice for the environment in China, and with local concern and willingness to sacrifice in the US (Zhao 2012: 150f). Other studies in the

US looking at the relationship between intensity of television watching and environmental concern and willingness to sacrifice for the environment find a negative relationship (Shanahan, Morgan et al. 1997; Good 2007; Good 2009). The present study thus corroborates the finding that breadth of media use is a positive influence but watching television is a negative influence, and underlines, again, that Chinese citizens are not that different from their US counterparts. It is noteworthy that the indirect impact of education operates in part through consumption of newspapers and magazines (indirect impact .08 out of total indirect impact of .28).

The perceived seriousness of pollution does not seem to matter, whereas the seriousness of conservation issues associates positively with participation in environmental governance. Environmental groups in the West have long known that images of pristine wilderness and emblematic species have more motivating power than the nitty gritty of pollution control. However, it is likely that the explanation for this difference is more complicated. Lubell (2002) argues that 'environmental activism' is a function of citizens' beliefs about collective benefits, ability to determine collective outcomes and the selective costs and benefits which accrue from activism. Later work by the same author makes the connection between trust in policy elites' ability to deal with a specific issue and willingness to act over that issue (Lubell et al. 2006: 140). We should note that Chinese citizens regard pollution as a more serious problem than nature conservation (see Table 4). It seems likely that they have less trust in the government's ability to tackle polluting industries than its ability to save endangered habitats and wildlife, and this could explain why the seriousness with which conservation issues are viewed is a better predictor of activism.

Confirmation of the identity hypotheses is striking, particularly the huge impact of identifying with a middle-class lifestyle. Inglehart (1995: 57) contended that 'Public support

for environmental protection is ...shaped by subjective cultural values.' The cultural values he was referring to, emphasizing self-expression and quality of life, are also consistent with middle-class aspirations in China, even if environmentalism as a social movement has not escaped the controlling tentacles of the state (Rocca 2017: 177). It is ironic that the path to a more engaged, environmentally active Chinese citizen lies through the spread of middle-class aspirations, because realising those aspirations involves heightened consumption, but that is part and parcel of the logic of post-materialism: only after achieving a certain level of prosperity do people focus on more 'spiritual' values including environmental aesthetics, quality of life and wellbeing (Inglehart 1990, 1995). At least with respect to environmentalism, cosmopolitanism in China seems to align with a middle-class lifestyle.

## Conclusion

The contribution of this study is to provide an empirical account of participation in environmental governance as the Chinese regime encourages it to be. By separating the who question and the why questions, the article is able to offer an explanation of participation which combines the advantages of the collective interest model which seeks to locate the motives for participation in instrumental rationality and the advantages of identity models which engage with the psychology of participation and its cultural politics. The study also encourages a more nuanced understanding of what participation means in an authoritarian context and challenges stereotypical views of participation under authoritarianism.

This study has a number of limitations. First, as a cross-sectional study, it can only tell us about associations, not processes of causation. Second, the measure used taps a certain kind of participation, within the limits imposed by China's political system and what questions can be asked in a publicly available survey. It does not capture contentious

activities. Third, it does not provide the institutional analysis which could tell us to what extent and in what circumstances public participation actually matters in determining environmental decision-making.

Further study is needed in a number of areas. First, we need to better understand the effects of context, including spatial and temporal variations in economic and social development, industrial structure, policy and leadership. Because the Chinese government suppresses much granular data about local government performance, it is unlikely that the breakthrough will come using statistical approaches. Qualitative studies and institutional analyses based on game theoretic models are required to deepen our understanding of the relationship between context and participation. It also remains to be discovered exactly why different forms of media consumption affect participation in the way they do: whether it is because of the way environmental issues are covered, the values conveyed by the media, or the nature of the consumption activity itself. Finally, further research is needed to understand the expectations of Chinese citizens, in particular which problems they expect government to solve, and how and why they see their own participation contributing to the solutions.

TABLE 1. Frequency of Forms of Participation in Environmental Governance in China

	Never	Sometimes	Often
	(percent)		
Re-using plastic bags	19	31	50
Taking a shopping basket or bag with me when going shopping for necessities	24	35	41
Refuse sorting	56	31	13
Seeking out broadcasts, TV programmes and news reports on environmental issues and environmental information	51	36	13
Discussing environmental problems with friends and relatives	52	40	8
Enthusiastically joining environmental education activities organised by government or employer	78	18	4
Cultivating trees or green spaces at own expense	86	11	3
Donating money to environmental protection	83	15	2
Enthusiastically taking part in environmental protection activities organised by public-organised NGOs	84	14	2
Enthusiastically joining environmental petitions and lawsuits	91	8	1

China General Social Survey 2013, weighted N=10746 (missing data less than 1% for each question, omitted)

TABLE 2. Principal Components Analysis of Different Forms of Participation

	F1	F2
Enthusiastically taking part in environmental protection activities organised by NGOs	<b>.78*</b>	.17
Enthusiastically joining environmental education activities organised by government or employer	<b>.74*</b>	.27
Enthusiastically joining environmental petitions and lawsuits	<b>.69*</b>	.01
Donating money to environmental protection	<b>.64*</b>	.20
Cultivating trees or green spaces at own expense	<b>.60*</b>	-.07
Taking a shopping basket or bag with me when going shopping for necessities	-.04	<b>.77*</b>
Re-using plastic bags	-.11	<b>.75*</b>
Discussing environmental problems with friends and relatives	.38	.57
Refuse sorting	.32	.53
Seeking out broadcasts, TV programmes and news reports on environmental issues and environmental information	.44	.51
<i>Eigen values:</i>	3.47	1.53
<i>% variance explained:</i>	34.7	15.3

China General Social Survey 2013, weighted N=10746 (missing data coded to mean; varimax rotation with Kaiser normalization completed)

TABLE 3. Distribution of Measure of Participation in Environmental Governance

	Frequency	Valid Percent	Cumulative Percent
0 never any of five	6719	62.6	62.6
>0, ≤0.20	1564	14.6	77.2
>0.20, ≤0.40	949	8.8	86.0
>0.40, ≤0.60	559	5.2	91.3
>0.60, ≤0.80	393	3.7	94.9
>0.80, ≤1.00	284	2.6	97.6
>1.00, ≤1.20	126	1.2	98.7
>1.20, ≤1.40	62	0.6	99.3
>1.40, ≤1.60	50	0.5	99.8
>1.60, ≤1.80	12	0.1	99.9
>1.80, ≤2.00 often all five	10	0.1	100.0
Total	10728	100	

China General Social Survey 2013, weighted N=10746 (missing data 0.1%, omitted)

TABLE 4. Coding and Summary Statistics of Variables Included in the Analysis

	Min.	Max.	Mean	S.D.
Participation	0 Never	2 Often	0.19	0.32
Hypothesis 1. SOCIAL STRUCTURE				
Female	0 No	1 Yes	0.50	0.50
Age in deciles	2 18-29	7 70s	4.62	1.62
Self-assessed social status	1 Lowest	8 High	4.22	1.66
Income quintile	1 Lowest	5 Highest	3.00	1.41
Education	1 Primary-	4 University+	2.14	1.10
Rural residence registration ( <i>hukou</i> )	0 No	1 Yes	0.53	0.50
Migrant from another city/county	0 No	1 Yes	0.11	0.31
Urbanisation	1 Rural	5 Urban	3.14	1.79
Hypotheses 2a-f. INSTRUMENTALITY				
Seriousness of pollution <sup>1</sup>	0 No problems	5 Many serious	2.02	1.37
Seriousness of conservation issues <sup>1</sup>	0 No problems	5 Many serious	0.98	1.15
Local gov't environmental capacity	1 Superficial	5 Many successes	3.15	1.05
Knowledge of environmental problems <sup>2</sup>	0 None	7 Strong	3.04	1.95
Watches TV	1 Never	5 Very often	4.07	1.01
Reads newspapers, magazines <sup>3</sup>	1 Never	5 Very often	1.96	1.03
Uses internet, customised news on mobile <sup>4</sup>	1 Never	5 Very often	1.87	1.16
Voted in community election	0 No	1 Yes	0.45	0.50
Communist Party/CYL member	0 No	1 Yes	0.14	0.35
Hypothesis 3a-b. IDENTITY				
Middle-class lifestyle suits me <sup>5</sup>	1 Not at all	4 Completely	1.65	0.57
Cosmopolitan: observes Western holidays <sup>6</sup>	0 None	5 holidays	0.68	1.26

China General Social Survey 2013, weighted N=10746; missing data less than 1% for all variables except for income (19.0%), local government environmental capacity (16.9%), and voting (4.96%).

Notes:

1. From questions asking respondents first if they have heard of a list of 12 environmental problems, and second to what extent they think these problems are serious. To construct scales, a principal component analysis is used to identify two factors. The first correlates with perceived seriousness of air (0.83), water (0.79), noise (0.76), industrial (0.70) and household waste (0.67) pollution, and the second with perceived seriousness of loss of wild plants and animals (0.76), forest damage (0.76), desertification (0.74), decline in soil quality (0.73) and water shortages (0.59). Scores loading on each factor are multiplied by the answers for having heard of the problem, coded zero or one, and then averaged. Cronbach's alpha for seriousness of pollution is 0.84 and for conservation 0.80.

2. From a list of ten true or false statements about dangers of exhaust fumes, excessive fertilizer use, phosphorus containing detergent, fluorine gas from refrigerators, sources of acid rain, ecological connectedness, air and water quality standards, monocultures, and global warming, the number of correct answers is used as a scale, with the top three points collapsed.

3. Average of newspaper and magazine reading (Cronbach's alpha 0.79).

4. Average use of the internet (including mobile internet) and customised news services on mobile phones (Cronbach's alpha 0.67).

5. From a list of thirteen statements concerning lifestyle, a principal component analysis shows six statements correlating at above 0.60 with a common factor: buying things at famous stores (0.76),

buying famous brands of consumer durables (0.76), always riding in a taxi or private car (0.72), marking special occasions in restaurants (0.69), decorating our home with works of art (0.69) and enjoying art and music in one's spare time (0.60). Agreement with all six exhibits good reliability (Cronbach's alpha 0.82) and so they are averaged to form a scale measuring identification with a middle-class lifestyle.

6. From a list of fourteen traditional Chinese and Western holidays, celebrating five Western holidays—Christmas, April Fools, St Valentine's Day, and Mother's and Father's Day—forms a scale with good reliability (Cronbach's alpha 0.79).

TABLE 5. Regressions on Participation in Environmental Governance

	Model 1		Model 2		Impact†
	Est.	S.E	Est.	S.E	
Hypothesis 1. SOCIAL STRUCTURE					
Female	-.07***	.02	-.04	.02	-.01 <sup>1</sup>
Age in deciles	-.04***	.01	-.01	.01	-.07 <sup>2</sup>
Self-assessed social status	.03***	.01	.01	.01	.09 <sup>3</sup>
Income quintile	.03**	.01	-.01	.01	.08 <sup>4</sup>
Education	.15***	.01	.04**	.01	.28 <sup>5</sup>
Rural residence registration ( <i>hukou</i> )	-.07	.03	-.03	.03	-.02 <sup>6</sup>
Migrant from another city/county	-.13***	.03	-.12***	.03	-.02 <sup>7</sup>
Urbanisation	.02	.01	-.004	.01	.05 <sup>8</sup>
Hypothesis 2a-f. INSTRUMENTALITY					
Seriousness of pollution	-	-	-.001	.01	
Seriousness of conservation issues	-	-	.09***	.01	.09
Local gov't environmental capacity	-	-	.03***	.01	.10
Knowledge of environmental problems	-	-	.03***	.01	.08
Watches TV	-	-	-.02***	.01	-.09
Reads newspapers, magazines	-	-	.11***	.01	.21
Uses internet, customised news on mobile	-	-	.01	.01	
Voted in community election	-	-	.11***	.02	.05
Communist Party/CYL member	-	-	.05	.02	
Hypothesis 3a-b. IDENTITY					
Middle-class lifestyle suits me	-	-	.23***	.02	.38
Cosmopolitan: observes Western holidays	-	-	.04***	.01	.03
Model fit statistics: Model 1: R-Square: 15.3%; Model 2: R-Square: 24.3%.					

Regression parameters average five imputations of missing data (n=8608 each). Significance levels are shown as \*\*\* (P<.001), \*\* (P<.005), \* (P<.01). †Impact is calculated as the mean of the independent variable multiplied by the product of estimates for all direct and indirect effects significant at .01 level. Total impact may not equal the sum of individual impacts due to rounding.

Notes:

1. Indirect impact via: Party membership (-.002), cosmopolitanism (.002), seriousness of conservation issues (-.007), and reads newspapers (-.007).
2. Indirect impact via: Party membership (.003), voting (.027), middle-class lifestyle (-.053), cosmopolitanism (-.039), seriousness of conservation issues (-.031), local government environmental capacity (.009), watches TV (-.004) and reads newspapers (.017).
3. Indirect impact via: Party membership (.002), middle-class lifestyle (.055), cosmopolitanism (.010), local government environmental capacity (.007), watches TV (-.005) and reads newspapers (.022).
4. Indirect impact via: middle-class lifestyle (.053), reads newspapers (.024).
5. Indirect impact via: Party membership (.013), middle-class lifestyle (.061), cosmopolitanism (.017), seriousness of conservation issues (.033) and reads newspapers

(.081).

6. Indirect impact via middle-class lifestyle (-.007), watches TV (.002) and reads newspapers (-.011).

7. Sum of direct impact (-.013) and indirect impact via voting (-.003).

8. Indirect impact via voting (-.019), middle-class lifestyle (.028), cosmopolitanism (.010) and reads newspapers (.027).

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