

Promotion for Performance? The working incentive of Chinese provincial environmental agency heads in pollution reduction

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Promotion is argued to be the primary working incentive for Chinese officials. Different from previous studies that focus on the provincial governors and party secretaries, this paper makes the first attempt to examine whether the career turnover of China's provincial environmental agency heads (PEAHs) is affected by the environmental performance within their jurisdictions. The results show that the performance in reducing nationally targeted pollutants—i.e., sulfur dioxide (SO₂) and chemical oxygen demand (COD)—is not necessarily correlated with political turnover, which only depends on political factors such as the age when assuming office, tenure of the office, and if they are local people. Therefore, a lack of promotion incentive is found among China's PEAHs in local environmental management. Their working incentive is straightforward top-down control, making them merely the implementers of economy-dominated local public policy. A more robust and transparent performance management system, to connect the provincial environmental performance with the PEAH's political career, is supposed to be beneficial for China's environmental management.

Keywords: performance management, promotion incentive, environmental governance, environmental agency head, China

INTRODUCTION

Under China's political system, the cadres play a dominant role and exert significant influence on local governance (L. Liu, Wu, Li, de Jong, & Sun, 2017; Yao & Zhang, 2015). According to the public choice theory, the behavior of local officials is determined by their rational self-interest, which is shaped by their institutional context (Edin, 1998). Across all external incentives to the behavior of government officials, whether positive (such as bonuses and promotions) or negative (such as demotion, inspection, filing of lawsuits, and judgments of subordinates) (Edin, 1998), promotion is arguably the primary factor that influences, if not determines, the behavior of Chinese officials (Zhou, 2007). In order to gain recognition from their superiors and thereby promotion opportunities, local officials spare no effort in improving their performances. Although criticized by some studies as being over-

simplified, over-ideal, and ignoring specific career motivation of local officials (Gao, 2017; Kostka & Yu, 2015; Mei & Wang, 2017; Zheng, Kahn, Sun, & Luo, 2014), promotion has still been the most prevalent and dominant explanation of the political rules and incentives in China's bureaucratic system. For this reason, promotion as a reward for the economic performance of local officials is regarded as one of the most important theories in explaining the economic miracle of China since reform in 1978 (Zhou, 2007).

Amidst China's economic boom, the effects of its success have been increasingly offset by its severe environmental pollution. In fact, an estimated 0.5 to 1.3 million premature deaths per year are caused by air pollution (Zhu Chen, Wang, Ma, & Zhang, 2013; J. Liu, Han, Tang, Zhu, & Zhu, 2016). Moreover, more than 80% of the water from underground wells used by farms, factories and households across the densely populated plains in China is unsuitable

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for drinking or bathing because of contamination (Buckley & Piao, 2016). The graveness of China's environmental problem is also evident in global data. In the *Environmental Performance Index 2016 Report* published by Yale University, China ranked 109th among 180 countries (Hsu et al., 2016).

In 1996, the State Council approved the "9th Five-Year Plan for National Environmental Protection" made by the National Environmental Protection Bureau at the time, which proposed that all the provinces and cities should control the emissions of 12 major pollutants within a certain limit by 2000 (J. Wang et al., 2018). In 2001, the reduction of sulfur dioxide (SO₂) and chemical oxygen demand (COD), excluding other pollutants, was formally prescribed in the "10th Five-Year Plan for National Economic and Social Development", the highest level of China's national plans. Since 2006, the reduction of SO₂ and COD has been listed in the Five-Year Plan for the National Economic and Social Development as a "binding target", which means the pollution reduction is legally enforceable. To implement the pollution reduction, the national target is decomposed and assigned to each province, the provinces then have the legal responsibility to fulfill the target. In 2005, an executive order titled the "Decision of the State Council on Implementing the Scientific Development View and Strengthening the Environmental Protection" stressed that environmental protection should be brought into the assessment criteria for the selection, appointment, and award of local cadres. The system aims to rectify local cadres' inaction on environmental protection by basing in part their career progression on their efforts in local environmental management (L. Liu, de Jong, & Huang, 2016). However, with the continuously severe pollution problem, it remains questionable whether the existing public personnel system has provided local cadres sufficient incentive to take pollution control seriously.

Officially, local leaders are responsible for the environmental quality in their jurisdictions. However, for local leaders, pollution reduction is only one of the public affairs in local socio-economic development, and it must be coordinated with other affairs. In

general cases, pollution reduction is not prioritized on local government agendas. So, the impact of local leaders on pollution reduction is both critical and limited to some degree. In contrast, for the head of the local environmental agency, environmental protection is their only duty. The local environmental agency head is the sole department cadre responsible for the making and implementation of the environmental policies at the local level. Compared with local leaders, the impact of the local environmental agency head on pollution reduction is more direct and substantial. In addition, in the eyes of the public, the environmental agencies are also principally held accountable for the declining environmental conditions. As an illustration, "inviting the environmental agency head to swim in the river" became an internet buzzword in 2013 when the chairperson of a company in Hangzhou vowed to offer a 200,000 RMB reward to the head of the local environmental agency if the head would swim in a polluted river.¹

Admittedly, the role that the local environmental agency head can practically play in local environmental management is disputable, because their administrative power still falls short of their responsibility to safeguard the local environment. On the one hand, the appointment of the local environmental agency head and the operation of the environmental agency, including personnel and budget, are controlled by the local government. So, if the decision-making of the environmental agency contravenes the policy priority of the local government (e.g., economic growth and some big projects), it is likely that the environmental decision-making must be a compromise. On the other hand, the current legislation only generally states the power of the environmental agency without detailed and specific explanations of enforcement, leading to ambiguous approaches and procedures in environmental regulation, thus making the environmental agency head to safeguard the local environment as expected (Lo, Liu, Li, & Wang, 2016). Furthermore, effective cooperation between different

¹ "The environmental protection bureau head is swimming in the river" has become a buzzword. <http://cpc.people.com.cn/pin-glun/n/2013/0221/c241220-20555932.html> (Accessed August 23, 2019) (in Chinese)

government departments, which is necessary to environmental management given the complexity of the problem, is also hindered by the institutional design where the environmental agency is parallel to other relevant departments, such as land resources, water, and urban management. The hierarchical bureaucratic structure renders it difficult and time-consuming for the environmental agencies to coordinate their policies with other authorities (L. Liu et al., 2016).

Nonetheless, this by no means implies that the environmental agency is entirely powerless in local environmental management. Since the reform in 1978 and the decentralization to maintain and consolidate national political stability through regionalized management, the provincial governments have become the “first stops” of decision-making. When it comes to environmental management, provincial governments are the primary enforcers of national environmental policies and makers of local policies. The environmental agency does hold authoritative power in some aspects, including the supervision of enterprises, the regulation of industrial access to local environmental resources, and the environmental assessment of local planning. Also, the local environmental agency has full implementation power of an environmental policy if it is formulated by the local government (L. Liu et al., 2016; L. Liu et al., 2017). Furthermore, recent years have seen an increase in the power of environmental agencies to monitor enterprises (Huang & Liu, 2014). So while local environmental agencies do not have absolute control over major local decision-making involving environmental impacts and are to some extent subject to the overall development strategy of the local leaders, the environmental management performance of the region is largely related to the attitude and capacity of the head of the local environmental agency. In this sense, based on the promotion incentive assumption, whether the local pollution reduction is positively correlated with the promotion of the local environmental agency head may determine the degree of enthusiasm possessed by the official for doing their duties, which in turn affects local environmental policy-making and implementation (L. Liu et al., 2017).

Therefore, this paper hypothesizes that the political turnover of provincial environmental agency heads (PEAHs) is affected by provincial pollution reduction. We examine the correlation with a novel database of China’s PEAH, which could be critical in understanding the institutional incentive in China’s local environmental management. The remaining parts of the paper are organized as follows. Section 2 first discusses the literature on government performance and its relationship with cadre promotion. Section 3 presents the methodology of the study, followed by the empirical results in section 4 and a discussion of the key findings in section 5. This paper concludes with a discussion of the theoretical contributions and policy implications of the study.

GOVERNMENT PERFORMANCE AND CADRE PROMOTION IN CHINA

Performance measurement remains a central theme of the new public management (NPM) reform since the 1980s (Hood, 1991), which involves the setting of explicit standards and indicators to ensure that publicly funded services are properly evaluated. Since then, different countries have adopted NPM reforms for better government performance and efficiency. In China, performance measurement has been officially adopted into the public sector in the 1980s. This system was supposed to be an evidence-based and result-oriented method to select competent candidates while retaining operational efficiency and asserting authority over all sectors (Bromberg, 2009; Mu & De Jong, 2018). Regarding the criteria, some studies find that the promotion prospects of an official are largely determined by their performance within the jurisdiction, particularly economic performance (Y. Chen, Li, & Zhou, 2005; Li & Zhou, 2005); Pu, 2018). For instance, Mei and Wang suggest that the career development of local leaders is positively correlated with economic policy innovation, but not other policy domains (Mei & Wang, 2017). Meanwhile, others suggest that political connections and factionalism play a dominant role in officials’ evaluations (Shih, Adolph, & Liu, 2012). To reconcile the contradictory views, empirical studies have been conducted, which suggest that the selection and promotion criteria

of officials at higher ranks include a mixture of benchmarks, such as economic performance, loyalty, and political connections (Choi, 2012; Jia, Kudamatsu, & Seim, 2015). In contrast, lower-ranked officials' prospects are mainly evaluated based on economic performance (Su, Tao, Xi, & Li, 2012). This disparity in the promotion standard allows the ruling elite to simultaneously maximize economic growth, as well as minimize the advancement of potentially disloyal officials (Landry, Lü, & Duan, 2017).

Since major officials in China are not selected through general elections, and their promotion is highly dependent on the decision of senior officials, the key criterion for officials to climb up the political ladder is not linked to their accountability to the citizenry, but rather competence and loyalty to their superiors (Li & Zhou, 2005; Ma, Tang, & Yan, 2015). In this system, the legitimacy of an official is based on the recognition of higher-level government, which in turn forms his/her dominant incentive to work. Recent literature on political incentives has elaborated that, in a non-electoral setting, officials who desire promotion tend to subject themselves to, and execute the will of, the governing core, even at the expense of other aspects (Liang & Langbein, 2015; Ran, 2013). This echoes the observation that, in the past two decades, the Chinese government's unilateral focus on economic development has driven officials, especially local ones, to strive for outstanding economic performance.

Since 2006, the Chinese central government has begun to set more diverse social development goals to replace the sole emphasis on economic development, covering aspects such as environmental pollution, social inequality, and safety. Thus, the government has established more tangible and quantifiable assessment criteria for officials and their performance, thereby increasing their incentive to work (Burns & Zhou, 2010; Kahn, Li, & Zhao, 2015; A. L. Wang, 2013). Some studies have evaluated the relations between the promotion of cadres and their performance in other non-economic aspects. For example, through analyzing data from 31 provincial governors from 1978 to 2012, X. Chen, Qin, and Wei (2016) suggest that the higher the provincial energy productivity, the more likely it was

for the governor to be promoted. Similarly, Cao, Kleit, and Liu (2016) argue that provincial party secretaries with a strong motivation to be promoted would work harder to promote renewable energy, as prescribed by the central government. Zhigang Chen, Tang, Wan, and Chen (2017) highlight that the promotion of local officials and their terms in office significantly impact the land scale and efficiency of urban construction. As for environmental performance, Zheng et al. (2014) find a positive correlation between mayoral promotion and the air pollution control in the respective regions in examining data from 86 cities between 2004 and 2009. Both Pu and Fu (2018) and Liang and Langbein (2015) suggest that the promotion of local leaders was more significantly related to visible pollutants than invisible pollutants. However, J. Wu, Deng, Huang, Morck, and Yeung (2013) find no correlation between environmental performance and the promotion of local leaders, as the latter still tend to be heavily biased towards GDP growth.

Delving deeply into the issue, it is worth noting that in the political reality of China, promotions are not a simple upward movement along the hierarchical ladder. In many cases, horizontal movement or even a step down in the administrative ranking could also be considered a promotion. For example, Li and Zhou (2005) see a shift from the post of a provincial governor to a head of a state department as a promotion because the official is approaching the power core, despite that both posts share the same administrative ranking. In a similar vein, Tao, Su, Lu, and Zhu (2010) deem it a lateral move when a provincial governor becomes a deputy head of a central department with a lower administrative rank. There is not a unified standard among the current literature on what should be considered a promotion within the Chinese political context. This study, however, would consider not only the administrative ranking of a position, but also the perceived political importance and power when determining a political promotion.

In summary, it is generally accepted that there is a positive correlation between economic performance and local officials' promotion, which also provides an institutional incentive for officials to maximize their

inputs. Regarding social aspects, such as pollution control, a few research initiatives have examined the impact of environmental performance on local officials, but so far, the studies exclusively focus on provincial and prefectural party secretaries and administrators. This paper is the first attempt to focus on provincial environmental agency heads (PEAHs) and provides a statistical portrait of the characteristics of this group of officials, thus shedding light on how the bureaucratic system of China could be further enhanced to improve local environmental management.

METHODOLOGY

Model

In the Chinese political context, local leaders, including governors, mayors, and local party secretaries, are responsible for holistic socio-economic development; in contrast, heads of environmental agencies concentrate solely on environmental management. Therefore, the career prospects of environmental agency heads supposedly depend on their local environmental performance, but not other economic indicators. To empirically test for any positive correlation between the career turnover (CT) of PEAHs and provincial environmental performance during their terms of office, we may formulate the following empirical model:

$$CT_i = \beta_0 + \beta_1 EP_i + \varepsilon \quad (1)$$

where EP_i is the environmental performance of the PEAH i . In this paper, EP_i is calculated according to the changing rate of sulfur dioxide (SO_2) and chemical oxygen demand (COD) during the term of office of a PEAH, i.e.,

$$EP_i = \frac{PE_{i,t_1} - PE_{i,t_0}}{PE_{i,t_0}} \quad (2)$$

Although the 5-Year Plan plays an important role in China's environmental management, *inter alia*, target-based environmental performance management, the timing of the career turnover of the PEAH is usually not consistent with the end of 5-Year Plan. The tenures of many PEAH span different 5-Year Plans. Therefore, we cannot measure their performance with target fulfillment, but rather only their performance during their tenure. In other words, this paper does

not answer how the career mobility of the PEAH is affected by the target fulfillment of 5-Year Plans, but simply their working performance in pollution reduction during the term of the office. SO_2 and COD have been selected because they have been specifically and consistently identified as indicators for China's national environmental target. Specifically, in 1996, the "9th Five-Year Plan for National Environmental Protection" proposed the reduction of the major pollutants, including SO_2 and COD. In 2001, the reduction of SO_2 and COD, excluding other pollutants, was listed in the "10th Five-Year Plan for National Economic and Social Development". Since 2006, the reduction of SO_2 and COD has been listed in the Five-Year Plan for the National Economic and Social Development as a "binding target". In the 12th Five-Year Plan (2011-2015) and 13th Five-Year Plan (2016-2020), the reduction of SO_2 and COD was still one of the planning targets, although several new environmental indicators were added. Therefore, over the past two decades, the reduction of SO_2 and COD has consistently been one of the most important environmental policies in China, although the environmental policies and targets in different periods have been adjusted. As the samples in the database of the paper cover the PEAHs leaving the office from 2000 to 2018, the paper chooses SO_2 and COD as two consistent and comparable indicators.

In formula (2), for officials taking or leaving office in the first half of the year t , we use the year $t-1$ as the statistical year; for officials taking or leaving office in the second half of the year t , we use the year t as the statistical year. The performance of a PEAH is measured by the difference between the pollution emissions before and after the PEAH takes and leaves the office. So, the basic principle for this method is, if there are two PEAHs in the year t , the environmental data of the year t is attributed to the PEAH who works over half of the year t . For example, if a PEAH takes office in the first half of year t , the environmental data of year t is thought not to reflect the situation before he/she comes, so the data of the year $t-1$ is used as the starting point of his/her performance; if the PEAH takes office in the second half of year t , the data of the year t is used.

We acknowledge that it may not be entirely accurate to attribute the local environmental performance, i.e., EP_i , solely to local environmental agency heads. However, in China's target-based environmental performance management system and hierarchical bureaucracy, upper-level governments tend to simply equate the performance of a local environmental agency head to the environmental performance of the concerned region.

In addition to working performance, previous studies have suggested that the personal attributes of China's cadres have a significant impact on their political turnover. These attributes include general demographic indicators (Pu & Fu, 2018; Yao & Zhang, 2015), and political network and mobility (Choi, 2012; Jia et al., 2015; Landry et al., 2017). To address the issue, we have included the necessary personal attributes of the PEAHs (PA_i) as control variables. Particularly, we have included time and spatial variables to control for the fixed effects of the region and time. Standard errors are clustered by areas. The model finally becomes:

$$CT_i = \beta_0 + \beta_1 EP_i + \beta_2 PA_i + \varepsilon \quad (3)$$

Data and Coding

Pollution data of this study, including the amounts of SO_2 and COD, are obtained from national and provincial statistical yearbooks in different years. For the personal and career information of the PEAHs, there is no systematic database currently. Instead, we utilize search engines to extensively compile the information of the incumbent and past heads. The PEAH in this paper only includes department heads. Unlike local party-government, where the party secretary is more powerful than the administrative head, in the administrative department such as the environmental agency, the administrative head has decisive power in environmental policymaking and implementation, while the party secretary is mainly responsible for the party affairs and has very limited impact on environmental governance. Besides, the deputy PEAH who oversees the pollution reduction work may share the responsibility with the PEAH. However, the information about the deputy head is largely unknown.

After eliminating samples with insufficient information, we ultimately obtained 108 samples of PEAHs: 30 incumbents and 78 past PEAHs. To the best of our knowledge, all the publicly available information of China's PEAH has been included in this database. Six of the past PEAHs were terminated because of power abuse or serious dereliction with serious environmental and social impacts, which is classified as abnormal turnover in this study. Since what we aim to examine is the correlation between the cadres' political turnover and local pollution reduction, the 30 incumbent and six terminated PEAHs have been excluded from the regression model and only presented as part of the descriptive statistics. We have also collected other personal information on the PEAHs to better define the groups of officials, including their major subjects in college and their working experience in the respective environmental agency. Other general demographic indicators like gender, ethnic origin, and party affiliation were not considered, because over 90% of PEAHs are men, Han ethnic group, and communist party members. Table 1 lists the variables in the regression model.

As shown in Table 1, in the career turnover, "promotion" refers to the transfer of a new position which is closer to the power core of the government at different levels. As mentioned, promotion to a new position in the Chinese political context could be either the elevation of administrative ranking or the increasing perceived political importance and power. Specifically, two types of positional displacement for PEAHs are considered as a promotion. The first form of promotion is taking up a legally higher-ranked position according to China's Civil Service Law—e.g., from PEAH (department level) to the minister of a national ministry (ministerial level). The second form of promotion is a lateral transfer to a position at the same legal level but one that is considered more powerful—e.g., from PEAH to departments responsible for the finances or economy at the provincial level, or prefectural party secretaries or mayors, or a position in the Ministry of Ecology and Environment at the central level. Conversely, if the new position is legally ranked lower or less

Table 1. The Variables in the Regression Model and the Coding Rules

Variables		Coding
Dependent variable	Career turnover	Promotion: 1, Lateral move/retirement: 0, Demotion: -1
Independent variables (EP_i)	SO ₂	Changing rate of SO ₂ emissions during the tenure
	COD	Changing rate of COD emissions during the tenure
	Age1	Age when assuming office as PEAH
	Education	Junior college: 1; Bachelor: 2; Master: 3; Doctor: 4
Control variables (PA_i)	Age2	Age when promoted to department level for the first time
	Tenure	Term of office as the PEAH (months)
	Birthplace	If the birthplace is the same as where the PEAH works: 1; Otherwise 0.
	Network	If the head has working experience in provincial or municipal Party committee or government before holding the post of PEAH: 1; Otherwise 0.
	Area	The area where the PEAH works. East: 1; Central: 2; West: 3; Northeast: 4
	Year	The time when the PEAH left the office.

powerful than a PEAH, or further away from any level of the power core, like the local People's Congress or Political Consultative Conference, for instance, the cadre is considered as being demoted. However, if a PEAH moves to the local People's Congress or Political Consultative Conference after the age of 59, the turnover is regarded as a lateral move, because the required age of their retirement is 60. In addition, if a PEAH moves to a new position that is legally ranked identically, or retires after the age of 60, it is also defined as a lateral move.

For the control variables, "Age1" is the age when the cadre was promoted to department level for the first time. This variable can be regarded as an instrumental variable for an official's political capacity in the bureaucratic system, which is decisive in one's political career. For example, Hu Chunhua, the current Vice Premier of the State Council, is thought to be one of China's most prominent officials because he has been the youngest provincial governor in China's history. "Education" is also a general indicator of a cadre's work capacity. "Age2" is the age when the cadre assumed the position of PEAH. "Tenure" is the duration the cadre held the position of PEAH. This variable is related to an official's career prospects in two ways. First, existing studies on Chinese officials have suggested that the longer an official holds a position, the larger possibility of inertia (Han &

Zhao, 2016). Second, if the upper-level government intends to cultivate and promote an official, the tenure for him/her in a certain position should be relatively short. Supposedly, the longer an official holds the same position, the possibility for his/her promotion is smaller. "Birthplace" and "network" are proxies for an official's political connections. Regional identity is supposed to be more advantageous in local bureaucracies because of their connections to local society. Similarly, it is likely that the official with working experience in the local party committee and government has a greater likelihood of being promoted due to their political connections with the power core. "Area" is a dummy indicating the region of the PEAH. This is particularly important considering the large regional differences in China's socio-economic development.² "Year" is the time variable to control the impact of time on the career turnover of officials.

² According to China's statistical policy, eastern area (10 provinces and direct-controlled municipalities) includes Beijing, Tianjin, Hebei, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong and Hainan; central area (6 provinces) includes Shanxi, Anhui, Jiangxi, Henan, Hubei and Hunan; western area (12 provinces, autonomous regions and direct-controlled municipalities) includes Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang; north-eastern area (3 provinces) includes Liaoning, Jilin and Heilongjiang.

Table 2. Descriptive Statistics

Variables	Observation	Category	Frequency	Percentage	
Promotion	72	Demotion	12	16.67	
		Lateral move	43	59.72	
		Promotion	17	23.61	
Birthplace	72	Same as working area	41	56.94	
		Different from working area	31	43.06	
		East	20	27.78	
Area	72	Central	19	26.39	
		West	27	37.5	
		Northeast	6	8.33	
		Junior college	2	2.78	
Education	72	Bachelor	28	38.89	
		Master	33	45.83	
		Doctor	9	12.5	
Network	72	Experience in Party committee/government	28	38.89	
		No experience in Party committee/government	44	61.11	
		Mean	Std. Dev.	Min	Max
SO ₂	72	-0.06	0.53	-0.96	3
COD	72	0.12	0.57	-0.83	1.81
Age1	72	50.43	4.52	34	58
Age2	72	41.65	5.00	30	56
Tenure	72	62.83	34.46	10	145
Year	72	2012.51	4.86	2000	2018

RESULTS

Descriptive Statistics

Table 2 summarizes the descriptive statistics of the variables in the regression model. The geographical distribution of our sample is even, with about two PEAHs per province.

For the social and political network, local officials (56.9%) who were born in the provinces they work tend to have a higher chance of taking up the role as the PEAHs. However, cadres who have experiences in party committees or governments do not possess obvious advantages in taking up the position. Regarding education, a master's degree is the most common for PEAHs, accounting for 45.8% of the sample, followed by a bachelor's degree at 38.9%. Overall, 97% of the PEAHs have at least a bachelor's degree. However, looking deeply into the data, being a PEAH does not

require much professional knowledge and relevant experience on environmental management. Only 13.6% of the PEAHs holds a degree in environmental studies, and only 26.5% of the heads had previously worked in environmental agencies. These low percentages indicate that in the provincial bureaucratic system, PEAHs are not considered a professional role.

Figure 1 shows the age of the cadres when assuming office as PEAH, with 51.9% being over the age of 50, and an average age of 51.1. According to the statistics in Hu (2009) and on people.cn,³ the average age of China's provincial party secretaries and ministers of provincial organization departments upon their first appointment are 52.6 and 51 respectively. This implies

³ Analyzing the growing path of the 31 provincial Party committee secretaries: The average age at the beginning is 57 years old. <http://politics.people.com.cn/GB/1026/16602887.html> (Accessed August 23, 2019) (in Chinese)

Figure 1. Age of the PEAH when Assuming Office

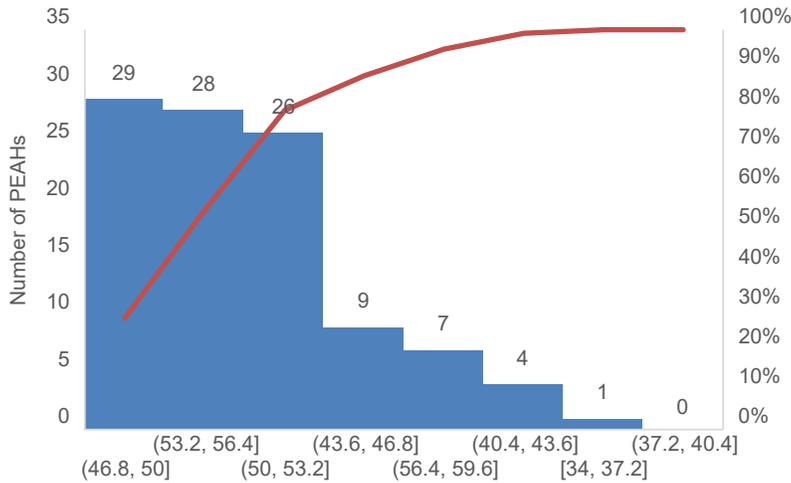


Figure 2. The Pollution Reduction of the PEAHs in Different Regions

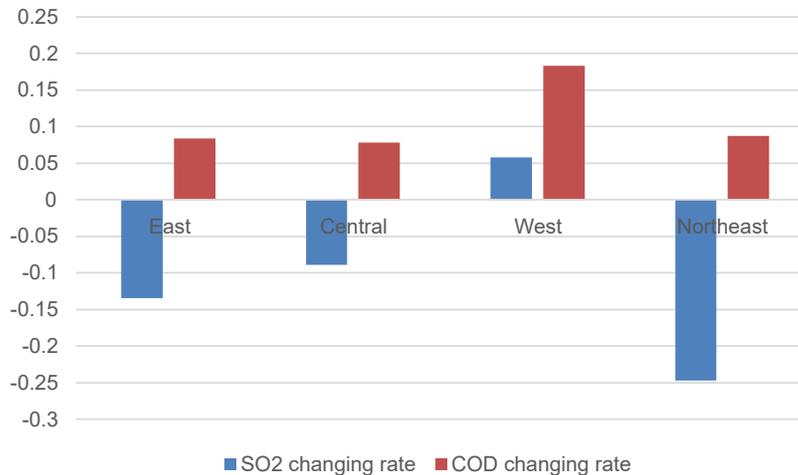
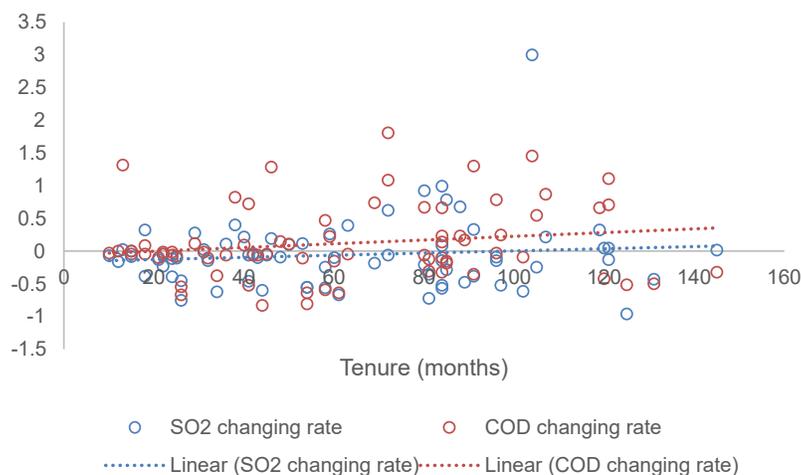


Figure 3. Tenure and Environmental Performance of PEAHs



that being appointed as the PEAH means that the prospect of getting into many higher-ranked positions is closed. In our samples, no PEAH was ever promoted to a legally higher-ranked position. All the promoted PEAH were horizontally moving to a more powerful position.

As shown in Figure 2 about pollution reduction, the management of SO₂ was generally better than that of COD. Liang and Langbein (2015) attribute this to the local governments' strategic implementation of the central policy, because SO₂, as an air pollutant, is more visible and attracts more public concern than COD. Similarly, Pu and Fu (2018) find the reduction in air pollution was more significantly correlated with the promotion of local cadres than water pollution. When comparing among the four regions in China, the environmental performance of the PEAHs in the western area was the worst, having increased emissions of SO₂ and COD. This finding aligns with H. Wu, Guo, Zhang, and Bu (2017) work, which suggests that the spatial-socioeconomic structure of China is being reshaped by the westward movement of pollution. Meanwhile, the performance of the PEAHs in the northeastern region, i.e., Jilin, Liaoning, and Heilongjiang province, appears to be the best, having over 20% reduction in SO₂. This may be due to the northeast revitalization strategy implemented by the central government since 2003, which stressed industrial restructuring and upgrading that was more environmentally friendly, the development of modern agriculture and the service industry, and protecting the ecological environment.

Previous studies of the Chinese local cadres have found that the longer the tenure of a cadre in a position, the larger the possibility of inertia (Han & Zhao, 2016). That is to say, the length of the tenure has an inverse relationship with the cadres' performance. Figure 3 examines

Table 3. The Model Estimation (1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
SO ₂	0.549*** (0.154)		0.712 (0.498)	0.518 (0.471)	0.508 (0.467)	0.387 (0.340)	0.393 (0.342)	0.371 (0.317)	0.407 (0.305)
COD		-0.0172 (0.320)	-0.270 (0.498)	-0.392 (0.425)	-0.422 (0.409)	-0.410 (0.408)	-0.421 (0.402)	-0.371 (0.403)	-0.369 (0.383)
Age1				-0.0835*** (0.00593)	-0.0776*** (0.0109)	-0.0902*** (0.0105)	-0.0908*** (0.0109)	-0.115*** (0.0171)	-0.117*** (0.0191)
Birthplace						0.431*** (0.144)	0.420*** (0.136)	0.435*** (0.106)	0.478*** (0.142)
Education							-0.0498 (0.0765)	-0.0771 (0.0889)	-0.102 (0.102)
Tenure								-0.00720* (0.00434)	-0.00783* (0.00434)
Network									-0.277*** (0.0695)
Year	-0.000179 (0.0326)	-0.0317*** (0.0111)	-0.00129 (0.0310)	-0.0205 (0.0339)	-0.0264 (0.0423)	-0.0380 (0.0385)	-0.0375 (0.0395)	-0.0362 (0.0354)	-0.0282 (0.0409)
2.area	0.765*** (0.149)	0.828*** (0.107)	0.762*** (0.148)	0.957*** (0.153)	0.898*** (0.0741)	0.882*** (0.0869)	0.883*** (0.0861)	0.845*** (0.108)	0.882*** (0.120)
3.area	0.403*** (0.0970)	0.520*** (0.0333)	0.405*** (0.0912)	0.514*** (0.0973)	0.507*** (0.0862)	0.532*** (0.0777)	0.533*** (0.0785)	0.492*** (0.0695)	0.508*** (0.0765)
4.area	0.348* (0.178)	0.435*** (0.0850)	0.373*** (0.140)	0.651*** (0.156)	0.652*** (0.158)	0.650*** (0.160)	0.670*** (0.161)	0.698*** (0.156)	0.737*** (0.179)
Constant cut1	-1.056 (65.60)	-64.39*** (22.43)	-3.338 (62.43)	-46.07 (68.19)	-58.49 (85.70)	-82.06 (77.79)	-81.32 (79.88)	-80.16 (71.77)	-64.56 (82.96)
Constant cut2	0.758 (65.35)	-62.62*** (22.18)	-1.509 (62.22)	-44.16 (67.97)	-56.58 (85.48)	-80.10 (77.57)	-79.36 (79.66)	-78.15 (71.51)	-62.53 (82.70)
Observations	72	72	72	72	72	72	72	72	72

Note: Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

whether a similar pattern applies to PEAH. The result shows that the longer the PEAHs' tenure, the worse their performance in controlling SO₂ and COD. A possible explanation is that as their tenure extends, the official's motivation to work decreases along with their expectations of being promoted, leading to worse performance. Although previous findings also suggest that local officials with shorter terms of office are likely to select quick and low-quality approaches to implement the environmental policies (Eaton & Kostka, 2014), it is agreed that when terms are shorter and mobility is higher, the officials may expect

promotion more and be motivated to take measures to improve the environment.

Testing the Hypothesis

Table 3 shows the results of the ordered probability model. It needs to be pointed out that, in the Chinese political context, when approaching the required retirement age of 60, some PEAHs may not want to hold the current position, for reasons such as health or low expectations of promotion. Therefore, they will move to the local People's Congress or the Political Consultative Conference to take a back seat at the

Table 4. The Model Estimation (2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
SO ₂	0.807** (0.401)		0.930 (0.779)	0.761 (0.861)	0.746 (0.833)	0.582 (0.620)	0.582 (0.621)	0.896 (0.796)	0.973 (0.823)
COD		0.0847 (0.358)	-0.256 (0.684)	-0.410 (0.654)	-0.522 (0.656)	-0.440 (0.628)	-0.440 (0.627)	-0.324 (0.625)	-0.339 (0.642)
Age1				-0.126*** (0.0258)	-0.105*** (0.0375)	-0.130** (0.0543)	-0.131** (0.0530)	-0.208*** (0.0691)	-0.211*** (0.0722)
Birthplace					-0.0460 (0.0294)	-0.0403* (0.0209)	-0.0403* (0.0213)	-0.0174 (0.0256)	-0.0200 (0.0206)
Education						0.770** (0.372)	0.770** (0.371)	0.877** (0.418)	0.895** (0.439)
Tenure							-0.00381 (0.162)	-0.0214 (0.156)	-0.0331 (0.173)
Network								-0.0208*** (0.00324)	-0.0214*** (0.00341)
Year									-0.228 (0.283)
2.area	-0.0305 (0.0412)	-0.0687*** (0.0213)	-0.0316 (0.0378)	-0.0561 (0.0521)	-0.0680 (0.0633)	-0.0928 (0.0605)	-0.0928 (0.0605)	-0.0888* (0.0520)	-0.0815 (0.0601)
3.area	0.427*** (0.0956)	0.502*** (0.0517)	0.429*** (0.0836)	0.719*** (0.127)	0.527*** (0.129)	0.607*** (0.230)	0.608*** (0.221)	0.606** (0.236)	0.663** (0.288)
4.area	-0.0265 (0.0766)	0.134*** (0.0364)	-0.0225 (0.0646)	0.105* (0.0552)	0.0708 (0.0451)	0.104** (0.0519)	0.104** (0.0495)	-0.186** (0.0893)	-0.149 (0.0963)
Observations	72	72	72	72	72	72	72	72	72

Note: Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

age of 58 or even 57. In this case, it is difficult to judge whether the move is regarded as a retirement or demotion. If we consider the PEAH going to the local People's Congress or Political Consultative Conference after age 57 as normal retirement, the number of demotion cases will be only four, making even fewer cases of abnormal turnover. So, to control such uncertainty and check the robustness of the regression results in Table 3, we re-coded the career turnover as 1 for promotion and 0 for non-promotion, and gave estimates again with a probability model. The result is shown in Table 4, which is consistent with Table 3.

Returning to our key research question of whether there are promotion incentives for China's PEAHs, our

empirical findings suggest that the correlation between SO₂ or COD emissions reduction and career turnover of PEAHs is not statistically significant. In other words, when controlling for other influencing factors, the PEAHs' career turnover is not affected by their performance in pollution reduction. Instead, the career turnover of PEAHs was positively correlated with their birthplace. This verifies our assumption that local cadres have more connections to local bureaucracies, and thus have greater chances for promotion. The career turnover of PEAHs was negatively correlated with "Age1" (the age of assuming office as PEAH) and "Tenure" (the term of office). If PEAHs want to secure a higher position in the hierarchical system, they have to climb up the bureaucratic ladder faster than their peers, as old age and long terms are clearly

disadvantageous to promotion. Finally, if PEAHs previously worked in the local government or the party committee before assuming office, they potentially had a lower chance of promotion. Although the significance level of the coefficient of “network” is different in Table 3 and Table 4, the signs of the coefficients are consistent. A possible explanation is that leaving the local government or the Party committee may be regarded as a demotion because the government and the Party committee are the power center of the local bureaucracy, therefore, promotion after a demotion is more difficult.

DISCUSSION

China has witnessed a recent trend of incorporating environmental performance into the assessment criteria of cadres. However, the effectiveness of incentivizing PEAHs to improve their performance remains unknown. This study is the first attempt to investigate the institutional incentives of the local environmental agency head at the provincial level.

This research obtains three major findings. First, Chinese officials’ appointment as PEAHs implies that they nearly have no chance of promotion to legally higher rank positions. At most, some of them are “promoted” to more powerful positions that is still the same rank, such as the mayor or the party secretary in a prefectural city. Second, the position of PEAH is not a professional role in the bureaucratic system, as PEAHs are more likely generalists instead of specialists. Third, the longer the PEAHs’ tenure, the worse the performance in controlling SO₂ and COD emissions. All the findings indicate that environmental issues in China are being marginalized in public personnel management, receiving insignificant attention in the bureaucratic incentive system.

With respect to the lack of a significant correlation between pollution control and career turnover, this reflects that for PEAHs, their incentive to reduce pollution mainly comes from top-down command in the local bureaucratic hierarchy, instead of the opportunity for promotion. For quite a long time, there have been discussions about speeding up environmental reform

by implementing a vertical management system, like transferring the jurisdiction power over local environmental agencies from the local governments to the Ministry of Ecology and Environment (L. Liu & de Jong, 2017). This study supports that the incentives for improving the performance of the PEAHs would be enhanced by a vertical management system because the agencies would then be compared with other similar units. Therefore, the system provides a more equitable standard than if comparing with other kinds of departments.

As pointed out by Ran (2013), the incentives set by the central government regarding environmental policy implementation at local levels are perversely structured, causing a significant gap between the central government’s policy and its implementation outcomes at local levels. This implementation gap cannot be overcome by the local governments unless the central government corrects the perverse incentive structure for local environmental politics (Ran, 2013). Therefore, based on this research, what is crucial to China’s environmental management is a more robust performance management system that adequately bases the career prospect of the local environmental officials on their performances in environmental management.

Similarly, we find that PEAHs who had worked in the local government or the party committee before assuming office had lower chances of promotion, which implies that PEAHs are considered an unimportant position in the public personnel system in China. Leaving the local government or the party committee may be regarded as a “demotion” because they are the central organizations in the local bureaucracy. Getting a promotion after being “demoted” is more difficult. Furthermore, according to the estimation in Table 3 and Table 4, the promotion of PEAHs is negatively correlated with “Age1”, meaning that the earlier a PEAH was appointed, the greater the possibility for their promotion.

CONCLUSION

To summarize, in the current Chinese political structure,

a PEAH is just an implementer of local government policy, who neither has a positive incentive for their work nor has enough autonomy in local environmental management. This conclusion can be attributed to this research and the fact that local environmental agencies are affiliated with local governments, and thus cannot resist putting economic growth above environmental protection (L. Liu et al., 2017). This paper makes two contributions to the current debates on China's environmental management by examining the institutional design, specifically in relation to the PEAHs and their promotion incentives.

On the one hand, this study expands work on promotion incentives to include PEAHs and environmental performance, as previous work had been limited to analyses of China's local leaders and economic performance. Because of their relatively narrow career path, the PEAHs are less incentivized to advance environmental goals when compared to local cadres focusing on economic development. Worse still, their career progress is not correlated with working performance but other political factors, such as the age when assuming office, tenure of the office, and if they are local people.

On the other hand, this study offers an institutional explanation of the notable incomprehensiveness of China's environmental management. At the provincial level, the PEAHs can only function when their efforts do not jeopardize their superordinate's policy goals. Although theoretically, local leaders attempt to strike a balance between economy and environment, in reality, the latter is usually compromised when conflicts arise. Without a positive working incentive and enough autonomy, the PEAHs become mere implementers of economy-dominated local policies and can only exert limited influence on local environmental management.

Last but not the least, this paper is a novel but preliminary exploration of the promotion incentive for this special group of cadres, PEAH. So, there are several limitations of the research that may be better addressed in future studies with more available data. First, the sample size is relatively small for an empirical study. As the officials are not receiving

much attention, the publicly available information for PEAH is scarce and fragmented. Second, national environmental policy has changed over time, so the reduction of SO₂ and COD may not precisely capture all the key performance of provincial environmental management in different periods, particularly after the "Air Pollution Prevention and Control Action Plan" in 2013 and the 13th Five-Year Plan (2016-2020), when the central government emphasizes more on the importance of air pollutants. Third, a similar investigation at the prefectural level would be a good complement to understand the career turnover of the PEAH, who are supposed to have greater flexibility in claiming or justifying their performance.

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