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Does Rigorous Government Regulation on Nonprofits Improve Their Outputs? Evidence from China

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Abstract: This study mainly takes China as an example to explore the logic between government regulation and outputs of nonprofit organizations in the context of authoritarian countries. Based on the theory of embeddedness and organizational legitimacy, using the panel data of 29 mainland provinces from 2010 to 2019, and applying the fixed effect model, it is found that government regulation has a positive effect on outputs of non-profit organizations. However, it is also found that there exists a single threshold, only government regulation intensity keeps in a certain range, the positive effect is made. Further research finds that government regulation positively impacts nonprofit outputs through encouraging social donations. Our findings fill the gap of exploring the logic between government regulation and nonprofits outputs, giving some enlightenment to regulators of similar regimes countries. We also have improved the current government regulation theory based on legitimacy and embeddedness theory empirically, extended and enriched embeddedness theory.

Keywords: government regulation; nonprofits outputs; social donation; mediating effect model; panel threshold model

1 Introduction

Market failure and government failure jointly create space for the survival and development of nonprofit organizations. With the development of the nonprofit sector, they play an increasingly prominent role in creating and financing public services. Compared with other types of organizations, nonprofit organizations have

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comparative advantages, such as cost-effectiveness, innovation ability, etc.¹ Based on the Civil Code of the People's Republic of China, nonprofits' income must be used for specified mission-orientated organization activity, rather than for distribution within internal organizational members. Therefore, compared with the private sector, they are easier to garner more trust from the consumer (Hansmann 1980). Given this reason, the government is more likely to enter into contracts or establish partnerships with nonprofits, as theoretically, they have a lower risk of seeking for profits excessively leading to mission drift (Malloy and Agarwal 2008). Nevertheless, the nonprofit is not a panacea, instances of inglorious things happen in this field from time to time. Instances such as corruption incidents in non-profit organizations and failure to operate in accordance with legal regulations. In compliance with 'The Statistical Bulletin on the Development of Civil Affairs in 2020', a total of 6,935 cases of violations of laws and regulations of nonprofits were investigated and dealt with, and 6,707 cases of administrative penalties were imposed.² In other countries, such as the United States, around one-sixth of fraud cases (financial crimes) occur in the nonprofit industry (Stephens and Flaherty 2013). In order to make use of public resources effectively raised by nonprofit organizations from various subjects, the government has the obligation to supervise them. Given the special circumstances, the Chinese government also regulates nonprofits for the purpose of political stability. In the context of China's "big country and small society", the authoritarian government deeply influences the development of nonprofit organizations. As a result, the legal framework has reshaped the structure and practice of nonprofit organizations invisibly and significantly (Ren and Gui 2022). Many neo-institutionalist theorists believe that government support and tolerance are positively related to the development of civil society, while oppressive regulation is the opposite (Ren and Gui 2022). However, they lack empirical evidence to confirm and explore the relationship between government regulation and the development of non-profit organizations from non-western countries.

In authoritarian regimes, any political or social organizations not associated with the dominant regime are banned or allowed only limited participation (Casey 2016). Under the drive of the modernization of the national governance system and capacity, "macro encouragement, micro restraint" is the core principle of Chinese government management to nonprofit organizations at present. Although China's nonprofit organizations have a relatively favorable development environment, they are still subject to strict government regulation. Notably, the number of nonprofit

1 Pratt, B. 2014. 40 Years of NGO Development: Time to Rediscover a Purpose? International NGO Training and Research Centre. <https://www.intrac.org/briefing-paper-40-40-years-of-ngo-development/>.

2 Statistical Bulletin on the Development of Civil Affairs in 2020. <http://images3.mca.gov.cn/www2017/file/202109/1631265147970.pdf>.

organizations in China has grown vigorously over the past 40 years, from less than 5,000 in 1988 to nearly 900,000 in 2022. In the face of a huge nonprofit sector, if the government can play its role properly, it will inevitably bring huge benefits to the whole society. However according to our fieldwork and literature combing, public criticism and questioning of the government's regulatory effectiveness of nonprofit organizations has always existed, both in practice and in the academic field. Most of the existing studies focus on the relation between government regulation and donations received by nonprofit organizations. Only a few studies involve the interaction between government regulation and the output of nonprofit organizations. And there is no direct discussion on the relation between government regulation and outputs of nonprofit organizations. Nonprofit outputs, to a large degree, are an important indicator of the development situation of one nonprofit. Since many nonprofits undertake some abstract jobs, their outputs are hard to measure, in most cases, we are just able to observe surface outcomes, such as how many people they have served, and how much time they have dedicated to. Our research aims to explore the causal logic between government regulation and nonprofits outputs.

In light of the discussion above, the remaining structural layout of this article is organized into six sections. Section 2 reviews and comments on related literature. Section 3 analyzes the logic between government regulation and nonprofits outputs, based on these basic theories, making corresponding hypotheses. Section 4 includes two parts: model design and variable choice. Section 5 operationalizes our hypotheses and presents the results of our empirical model and the robustness, and heterogeneity test. Section 6 is a deeper analysis of the mechanism between government regulation and nonprofits outputs. Section 7 contains the conclusion.

2 Literature Review

In terms of government regulation of nonprofit organizations, many scholars have conducted in-depth research through different perspectives and methods. In general, the existing research mainly focuses on conceptual perspectives and the relation between regulation and nonprofits development. This includes issues such as the relation between government regulation and nonprofits' donation, revenue, the issue of voluntary disclosure, organization operation, the nonprofits' operational efficiency, etc. For instances, Mitchell (2023) identified three models of state-level charity regulation, broad regulation, limited regulation and asset oversight. Lott et al. (2022) derived a state-level charity regulatory breadth index (RBI). Regarding to the relation between government regulation and aspects about nonprofits development, in early relevant studies, nonprofit organizations in states with poor government oversight have managerial compensation that is more highly correlated with inflows of donations and allocate a smaller percentage of donations to the endowment for future expenditures relative to organizations in strong oversight

states (Fisman and Glenn Hubbard 2005). Besides, as a way of government regulation, embedded government control can help charitable foundations obtain more government subsidies, donations and market revenues (Ni and Zhan 2017). In terms of specific audit regulation, financial audit regulation contributes to reducing information frictions, thus affecting the allocation of resources for charitable donations. The audit authorization is related to the higher proportion of taxpayers' donations. However, this situation only occurs in some charities with high internal information asymmetry (Duguay 2022). As nonprofit organizations are not directly controlled by funders, it is easy to cause voluntary failure. Information asymmetry is the core reason for the government to supervise nonprofit organizations. Harris, Petrovits, and Yetman (2015) finds that with the increase of supervision, agency theory claims that the quality of financial reports will be improved. To some extent, supervision, that is, more information disclosure, can reduce information asymmetry. Some studies have found that the level of information disclosure is positively related to the number of donations received in the future (Buchheit and Parsons 2006; Christensen and Mohr 2003; Gordon and Khumawala 1999; Trussel and Parsons 2008).

Compared with the benefits brought by government regulation to nonprofit organizations, many scholars believe that government regulation has low efficiency or side effects. For instance, in the context of western countries, relevant research pointed out that no obvious accountability pathologies were found between nonprofit organizations with state regulation with nonprofit organizations that are without regulation (Irvin 2005). Moreover, the Nonprofit Integrity Act, as a way of an audit, did not increase California nonprofit donations, nor did it improve the quality of financial reporting (Hrywna 2006). Hale (2013) also found that formal regulation did not fully play its due role. Instead, they needed to seek other informal ways, such as trust and cooperation, to build the corresponding public image of nonprofit organizations. Wherein, voluntary disclosure is one of the most important ways shaping their images. The corresponding research has found that voluntary disclosure is more likely to be provided by relying more on donations, collecting more restricted funds, accepting less government funds, and operating under less government control (Nie, Liu, and Cheng 2016). In other words, government control may be detrimental to voluntary disclosure by nonprofit organizations. Furthermore, if regulation costs are high, but public trust and confidence do not improve, then it may be well-intentioned (in the public interest) but ineffective, or simply a tool to advance the interests of politicians/regulators, not necessarily effective (as argued by public choice theory) (Cordery, Sim, and van Zijl 2015). In addition, regulation may lead to unexpected consequences. Requiring the return of financial information leads to a decrease in the remuneration paid by charitable organizations to employees (Desai and Yetman 2005), which may lead to the recruitment of employees with insufficient ability or experience and unable to effectively manage the organization (Cordery 2013). At the same time, government regulation is also an obstacle for nonprofit organizations to participate in the policy process (Carroll, Myser, and An 2022).

In short, the existing research has made great contributions to the study of conceptual government regulation, the relation between government regulation and the donation, voluntary disclosure and operation of nonprofit organizations, nonprofits' efficiency. However, the logic between government regulation and outputs of nonprofit organizations are still lacking. Our research takes China as an example to explore whether government regulation can stimulate outputs of nonprofit organizations in the context of authoritarian countries to fill the gap in this field. Our results can be generalized to countries with the same institutional background.

3 Basic Theories and Corresponding Hypotheses

3.1 Government Regulation and Nonprofits Outputs

According to relevant research, government regulation means the regulators (government), who are independent of regulated entities, set standards governing the regulated entities according to legal mandates relating to public spending levels, transparency, quality assurance, and so on, using a wide range of instruments to regulate the regulated entities by sanctioning or rewarding (Amirkhanyan, Meier, and O'Toole 2016). The public interest theory of regulation claims that regulation is necessary to protect the general public (Hantke Domas 2003). Information asymmetry is a key reason for governments to regulate the operation of nonprofit organizations. Government regulation aims at restraining the illegal actions of nonprofit organizations, stimulating them to improve efficiency and advance the quality of products or services they provide. The regulatory model of the Chinese government on nonprofit organizations has evolved over time, from "graduated control" (Kang and Han 2008), "multidimensional control" (Jing 2015) to "administrative absorption" (Kang 2018) and so on. Facing the severe regulatory environment, nonprofit organizations need to adopt flexible strategies to survive and develop. The theory of embeddedness claims that human economy is embedded in economic and non-economic systems and is affected by economic and non-economic factors (Polanyi 1944). If nonprofit organizations want to achieve long-term development, they also need to be deeply embedded in the national structure and the whole society. The reason is obvious. Only when nonprofit organizations are embedded in the social structure can they provide what the public and the government need, win a favorable living environment, and obtain the resources they need in the operation process. Salamon, Sokolowski, and Haddock (2017) estimate that in the study of 41 countries, government funds accounted for an average of 35 % of the income of the nonprofit sector. In recent years, the Chinese government has also significantly formulated funding policies to support nonprofit organizations in providing public

services (Shen and Yu 2017; Zhang 2018). Based on this situation, in the face of government supervision, they will take it seriously and take corresponding corrective measures in time. As the resource theory says, the development of any organization cannot be separated from the support of external resources. In order to obtain these resources, organizations need to obey and meet the needs of the corresponding subjects who have the resources they need.

In addition to access to resources, seeking organizational legitimacy is also a critical incentive for nonprofits to respond positively to government regulation. Organizational legitimacy is a basic component in the development of any organizational population (Stinchcombe 1965). Organizations have a high possibility to survive if they obtain legitimacy and support from their institutional environment and patrons (Baum and Oliver 1991).

Suchman (1995) defines organizational legitimacy as “a kind of hypothesis or broad concept, that is, the behavior of entities is appropriate, desirable and acceptable under the definition, norms, values and belief system of specific social construction.” The theory of organizational legitimacy proposes that the development of an organization needs the triple recognition of system, profession and substantive achievements (Suchman 1995). As for nonprofit organizations, legitimacy means more reliable, meaningful and predictable (Suchman 1995). Their resource acquisition and mission attainment are inseparable from organizational legitimacy (Harris, Dopson, and Fitzpatrick 2009). When the operation of nonprofit organizations deviates from the original track or social structure and policy institutions, nonprofit organizations may violate the law (Dimaggio and Powell 1983), plunging themselves into a crisis of institutional legitimacy.

Especially under China's authoritative system, the legitimacy of nonprofit organizations is particularly necessary and important. This is because China lacks the tradition of non-governmental entities that participate in public affairs like many western countries. Without the authorization of the government, it is difficult for non-governmental entities to get the trust of the public, so they will face various challenges in the process of participating in the provision of public goods or services. In order to achieve organizational legitimacy, and thereby ensure the smooth development of nonprofit organizations, nonprofits are more inclined to actively rectify their own behavior and increase outputs of the organization to meet the expectations of the government. At the same time, outputs of the organization will also be stimulated.

Combining the theory of embeddedness and organizational legitimacy, nonprofit organizations can achieve long-term development only if they are embedded in the institutional, cultural and economic fields where they are located. In the context of China's system, government regulation is a powerful external correction machine that can regulate nonprofit organizations so that they will not

deviate from the designated track. For the regulation of nonprofit organizations, annual inspection is their common way. This regulatory method can shape the development of nonprofit organizations and make them operate in specific fields, thus stimulating outputs of nonprofit organizations. However, according to the conclusions of previous theories and practices, the Chinese government's regulation of nonprofit organizations is prone to fall into the situation of "too strict regulation will easily inhibit the development of nonprofit organizations, and too loose regulation will lead to chaos in the development of nonprofit organizations". Therefore, the relation between government regulation and outputs of nonprofit organizations may be non-linear.

Therefore, we make **Hypothesis 1a**: Government regulation can spur nonprofits outputs; Hypothesis 1b: the relationship between government regulation and nonprofit outputs is not linear, when regulation intensity reaches a certain critical value, a negative effect would happen.

3.2 Government Regulation, Social Donation, and Nonprofits Outputs

As mentioned above, we continue to explore potential mechanisms that can help explain the specific logic between government regulation and outputs of nonprofit organizations. In China, the government's regulatory measures for nonprofit organizations are strict and comprehensive. From its establishment to its financial situation, especially the funds obtained from the public, are within its regulatory scope. Social donation is one of the important sources of income for nonprofit organizations. The limited nature of this resource can lead to competition among nonprofits (Shizong, Chengcheng, and Lu 2016). Since the preferences and behaviors of organizations or individuals are embedded in the social structure, formal and informal institutions play an important role in shaping the behavior choices of nonprofit organizations (Turner 1999; Meyer and Rowan 1977). Among them, formal institutions, represented by government regulation, play an important role in the management of almost all public affairs. The regulatory results are the key criteria for judging the legitimacy of nonprofit organizations, which will also affect the reputation of nonprofit organizations. In organizations, especially nonprofit organizations that rely on external resources to maintain their lives, the reputation of organizations as intangible assets has an important impact on their survival and development (Rindova and Martins 2012). The corresponding research found that the foundation highly controlled by the government may be easier to improve its legitimacy or reputation (Baum and Oliver 1991; Pfeffer and Salancik 1978), and thereby to attract more donations.

As donors will give priority to their performance when considering which nonprofit organizations they will donate to (Gaskin 1999; Sargeant and Jay 2010). In addition to expressing the actual performance of the organization, the result of government regulation is also an important reference factor. From the perspective of donor status, the government can control the institutional environment of nonprofit organizations through funding (AbouAssi and Bies 2017). At the same time, from the perspective of the symbolic authority of the state, the state is the only entity qualified to grant legitimacy to nonprofit organizations, so its regulatory results represent the strength of the organization's legitimacy, and obtaining formal certification can also improve the reputation of nonprofit organizations (Feng, Neely, and Slatten 2015; Peng, Kim, and Deat 2019). In a non-symmetry information (information-scare) environment, reputation becomes a proxy for an organization's effectiveness (Mitchell and Stroup 2016). Donors prefer to donate to nonprofits that have a good reputation for being efficient and functioning well (Bekkers 2003; Beldad, Snip, and van Hoof 2014; Breeze 2010; Furneaux and Wymer 2015). Hereon, the public is more likely to reference the regulation situation, making decisions about donation willingness and quota. Because public donors want the cause they are donating to benefit and thrive (Bekkers and Wiepking 2011; Duncan 2004), as well as, want their donations to be used effectively (Furneaux and Wymer 2015). Therefore, in the Chinese governance field, nonprofit organizations regulated by the government will enhance organizational legitimacy and organizational reputation, and while releasing these information to the public to attract them to donate more money to nonprofit organizations.

That means government regulation acts as a signal tool that moderates the willingness of the public to donate. This situation can be explained by signal theory. The information asymmetry between funders and nonprofit organizations exists as mentioned before, government regulation plays a role connecting information between funders and nonprofit organizations by disclosing the annual inspection status of non-profit organizations to the public.

Generally, the reputational crisis of an organization is discovered by the organization's self-review or external subjects (excluding formal supervision), and the crisis will be suppressed or hidden as far as possible. In most cases, crisis has become big enough when the public can perceive it. Because it is expensive to deal with the reputation crisis, in addition, disclosing the negative information of the organization may cause them to lose potential donations or volunteers (Harris, Petrovits, and Yetman 2017). In addition, it can make other nonprofit organizations suffer from the spillover effect of trust reduction (Bradley 2015). However, the regulatory results of the government on nonprofit organizations are open to the whole society, and the corresponding data are available and accessible. Undoubtedly, the impact of this is more far-reaching. In particular, government regulations give the public a direct

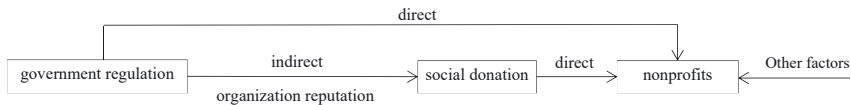


Figure 1: Function mechanism between government regulation and nonprofits outputs.

impression of a nonprofit organization and directly affect their willingness to donate. The fluctuation of donated resources will inevitably affect the prosperity of nonprofit organizations, thus affecting outputs of nonprofit organizations. In this process, social donation plays an intermediary role. Therefore, forming a theoretical logic chain (as exhibited in Figure 1). Government regulation can directly affect outputs of nonprofit organizations, or first (through the organizational reputation mechanism) on social donations, and then on outputs of nonprofit organizations. In other words, the impact of government regulation on outputs of nonprofit organizations may include the causal chain of “government regulation – social donation – outputs of nonprofit organizations”.

Based on the discussion above, we put forward **Hypothesis 2:** social donation is the mediating effect of government regulation on nonprofit organizations.

4 Data and Research Methods

4.1 Data

The data used in this paper are from the Statistical Yearbook of China’s Civil Affairs from 2011 to 2020 and the Statistical Yearbook of China’s Social Affairs from 2011 to 2020. In order to reduce the collinearity between variables and the impact of measurement unit differences on regression results, we took logarithms of some variables and standardized all variables. Because the dependent variable data of Jilin Province has been missing for many years, and the dependent variable data of Tibet Province has no statistical data, we deleted these two provinces. The description of variables and the descriptive statistics of variables are shown in Tables 1 and 2.

4.2 Dependent Variable

The output of nonprofit organizations means the final service results of the organization. In the existing research, some scholars have described in detail the measurement dimensions of service objectives of nonprofit organizations, such as

Table 1: Description of variables.

Variable	Specification	Source
Nonprofits outputs	Numbers of people serviced by nonprofits (1 person)	The statistical yearbook of China's civil affairs
Annual inspection	Annual numbers of nonprofits checked by government (1 nonprofit organization)	The statistical yearbook of China's civil affairs
Voluntary service time	Logarithm of service time of nonprofits	The statistical yearbook of China's civil affairs
Organization scale	Total members of nonprofits/total numbers of nonprofits, and then take the log of them	The statistical yearbook of China's civil affairs
Nonprofits income	Annual income of nonprofit organizations (ten thousand yuan), takes 2009 as the base period for inflation treatment and takes the logarithm	The statistical yearbook of China's civil affairs
Nonprofits' professionalization	Numbers of nonprofits' members holding professional qualification certification and takes the logarithm	The statistical yearbook of China's civil affairs
Nonprofits' female members proportion	The proportion of female members of non-profit organizations to the total number of non-profit organization members (%)	The statistical yearbook of China's civil affairs
Social donation	Social donations accepted by nonprofits (100 million yuan), takes 2009 as the base period for inflation treatment and takes the logarithm	The statistical yearbook of China's social affairs

Table 2: Descriptive statistics of variables.

Variable	Observations	Mean	SD	Min	Max
Nonprofits outputs	280	22,566.51	39,232.7	1	247,647
Annual inspection	280	10,725.26	10,672.06	87	65,717
Organizational scale	280	2.468	0.317	1.609	3.914
Voluntary service time	280	8.714	2.848	1.609	13.91
Nonprofits income	280	12.358	1.572	7.354	16.177
Nonprofits' professionalization	280	-1.203	1.397	-6.357	2.286
Proportion of nonprofits female members	280	30.327	8.517	10.744	59.433

service quality, quantity and satisfaction of service objects, policy initiative, residents' community awareness and community social capital (Mosley 2012; Sharkey, Torrats-Espinosa, and Takyar 2017). Since the service scope of nonprofit organizations is the direct reflection of their outputs, and considering the availability of data, the number of people who enjoy the services provided by nonprofit organizations is selected as the proxy variable of outputs of nonprofit organizations.

4.3 Independent Variable

As for the choice of the proxy variable of government regulation, existing research chose the headcount of powers of the corresponding state institution (Fisman and Glenn Hubbard 2005) represented it. However, this only means that they have regulation subjects, and it is difficult to reflect the regulation intensity. The number of nonprofit organizations participated in annual inspection organized by government is a good reflection of the intensity of government regulation. Based on 'Regulations on the Administration of Social Organizations', 'Provisional Regulations on the Administration of Private Non Enterprise Units', 'Charity Law of the People's Republic of China', 'Regulations on the Administration of Foundations', and 'Measures for the Annual Inspection of Foundations', nonprofit organizations in China should be participated in annual inspection from March of every year. While this regulation is forced, there are still part of nonprofit organizations unparticipating in it. To ensure nonprofits' operation is under the government control, Civil Affairs Departments at all levels increase continuously the ratio of nonprofits annual inspection. Therefore, the number of nonprofits annual inspection can represent government regulation intensity, when more and more nonprofit organizations inspected by government divisions, the scope of government regulation has achieved full coverage. Therefore, we choose the number of annual inspections of non-profit organizations as the proxy variable for government regulation.

4.4 Control Variables

The theory of resource dependence (McCarthy and Zald 1977) claims that organizations need resources to survive and develop. Although the legitimacy of organizations plays an important role in China, as long as they have sufficient financial resources and have no political troubles, they can maintain their operations regardless of whether they have legal status (Zhang and Tang 2011). Generally, material resources are the basis for the operation of nonprofit organizations. The income of nonprofit organizations is in direct proportion to the scope of services they provide. That is, the more income they receive, the broader the services they provide. In addition, the number of people receiving services from nonprofit organizations is also closely related to the total service time of nonprofit organizations. The longer the total service time, the wider the range of services they can provide. In consideration of the endogenous problem, the relation between the number of people who enjoy the services provided by

nonprofit organizations and the service time may be mutual causality. We use fixed effect model to solve this problem.

In addition, Marshall explained the relation between organizational size and organizational performance in his book “Principles of Economics”. He believed that when an organization is larger, there will be more detailed division of labor. The improvement of organizational professionalization can reduce organizational costs and improve organizational profits (Marshall 1989). Although nonprofit organizations have the nature of nonprofit, more and more nonprofit organizations realize and practice the service concept of “cost minimization”, and the pursuit of organizational scale has become the driving force for continuously improving outputs of nonprofit organizations. In addition, positive relationships between female board leadership and defined measures of board performance have been found (Dula, Nicholson-Crotty, and Gazley 2020), indicating that female members of non-profit organizations have a positive impact on the operation of non-profit organizations. Here, we also include the female member ratio in a nonprofit organization into one of our control variables. Besides this, organization members have a significant influence on the operation of nonprofit organizations. Relevant research found that there is a positive effect of professionalization on revenue generation capability, and a ‘U-shaped’ relationship between professionalization and reach more beneficiaries with lower assets (Sanzo-Perez, Rey-García, and Álvarez-González 2017). Hence, we should also control the influence of professionalization on nonprofits outputs. Therefore, voluntary service time, organization scale, nonprofits income, nonprofits’ professionalization, nonprofits’ female members proportion are finally selected as the control variables.

4.5 Model Specification

Based on theoretical hypotheses, our research focuses on the impact of government regulation on outputs of nonprofit organizations, we set the model as below:

$$\text{Nonprofit outputs}_{it} = \beta_0 + \beta_1 \text{annual inspection}_{it} + \beta_2 \sum X_{it} + \varepsilon_{it} \quad (1)$$

In this model, i represents the individual province, t shows different years. The output $_{it}$ is the dependent variable, means nonprofits’ output of province i , period t ; annualinspection $_{it}$ is the independent variable, means government regulation status of province i , t period; X represents control variables, includes voluntary service time, organization scale, nonprofits income, nonprofits’ professionalization, nonprofits’ female members proportion. β_0 is a constant term, β_1 , β_2 are being estimated parameters, ε_{it} is a random disturbance term.

5 Analysis of Empirical Results and Robustness Test

5.1 Analysis of Empirical Results

This article uses stata15.1 software to do empirical analysis, before proceeding with the model examination, examining the multicollinearity, the variance inflation factor is less than 5, and there is no multicollinearity problem, conforming to the requirement of regression. Then, outputs of nonprofit organizations are regressed by mixed OLS, random effect and fixed effect models. LM test was conducted to determine whether individual random effects existed, and the test results showed that the null hypothesis of “no individual random effects” was strongly rejected. Therefore, mixed regression should not be selected. In the selection of the random effect model or fixed-effect model, the Hausman test strongly rejects the null hypothesis that disturbance terms are not correlated with explanatory variables at the significance level of 1 %, so the fixed-effect model was selected for analysis. The mixed OLS and fixed effect regression results are shown in Table 3:

Table 3: Results of mixed regression and fixed effect model.

	Model 1	Model 2
Annual inspection	0.356*** (3.42)	0.086** (2.08)
Organizational scale	0.004 (0.09)	0.096** (2.12)
Voluntary service time	0.503*** (4.52)	0.415*** (3.74)
Nonprofits income	−0.088 (−1.14)	−0.083 (−0.69)
Nonprofits’ professionalization	0.055 (1.24)	0.101** (2.32)
Proportion of nonprofits female members	−0.022 (−0.49)	0.021 (0.45)
Constant	0.000 (0.00)	−0.000 (−0.77)
F	14.041***	3.667***
r ²	0.530	0.225
Hausman test chi2 value		23.16***
N	280	280

t statistics in parentheses *p < 0.1, **p < 0.05, ***p < 0.01.

In Table 3, Model 1 is the result of mixed OLS model, and Model 2 is the result of fixed effect model. Model 1 is only a reference framework. From model 1 to model 2, the core independent variable coefficient has dropped from 0.356 to 0.086, and the positive level is also dropped from 1 % to 5 %. The influence of fixed effect model on dependent variables is significantly reduced, indicating that fixed effect model controls other factors not considered more comprehensively. According to the fixed effect regression results, from the perspective of the impact of government regulation on outputs of nonprofit organizations, the coefficient of the core independent variable is significantly positive at the level of 5 %, that is, with the increase of government regulation, the output of nonprofit organizations will be better encouraged. Hypothesis 1 is valid.

5.2 Robustness Test

Considering the measurement error, we replace the independent variable administrative warning with another variable (administrative expenses) to test the robustness of the regression results. The administrative expense means the expense the government used to manage nonprofits. In the context of China's increasing regulatory efforts, the government will inevitably increase its regulatory investment in nonprofit organizations. Theoretically, administrative expenses can broadly reflect the regulation of the government. Therefore, we chose the administrative expense as the alternative variable of the independent variable. In addition, considering the particularity of municipalities directly under the Central Government (including Beijing, Shanghai, Tianjin and Chongqing), they may interfere with the robustness of our regression due to their unique political, economic and cultural characteristics, so we delete them from the sample. Specifically, in China, Beijing, Shanghai, Tianjin, and Chongqing are four municipalities directly under the central government. These four municipalities have advantages in the following three aspects: firstly, the level of economic development is also much more developed than in other provinces. Secondly, these cities enjoy better central policy support and tax incentives, and all four municipalities have bonded zones, indicating a high degree of reform and opening up. Thirdly, these cities have first-class higher education resources and high-quality educational environments. Therefore, the development of nonprofit organizations in economically developed areas is better, and they can more easily access rich resources. Excluding these four municipalities directly under the central government is mainly to eliminate the interference of outliers on the regression results, and even after exclusion, the results remain robust. The results are shown in Table 4. Model 3 is the regression result of replacing independent variables, and model 4 is the regression result of deleting municipalities. It can be

Table 4: The result of the robustness test.

	Replace independent variable (model 3)	Delete municipalities (model 4)
Administrative expenses	0.113** (2.14)	
Organizational scale	0.091** (2.22)	0.113** (2.25)
Voluntary service time	0.411*** (3.75)	0.460*** (3.73)
Nonprofits income	−0.072 (−0.58)	−0.092 (−0.71)
Nonprofits’ professionalization	0.088** (2.08)	0.100** (2.07)
Proportion of nonprofits female members	0.016 (0.33)	0.010 (0.17)
Annual inspection		0.089** (2.14)
Constant	−0.000 (−0.67)	0.052*** (3.96)
<i>F</i>	3.754***	3.483**
<i>R</i> ²	0.227	0.236
<i>N</i>	280	240

t statistics in parentheses **p* < 0.1, ***p* < 0.05, ****p* < 0.01.

seen from model 3 and model 4 that the independent variables are still significant. Therefore, we can draw the conclusion that our return is robust and the governance effect of government regulation has been fully played.

6 Deeper Analysis of the Mechanism Between Government Regulation and Nonprofits Outputs

The regression results above show that government regulation has a positive and significant impact on nonprofits outputs. In the light of prior hypothesis 1b, the relationship between government regulation and nonprofit outputs may not linear. We constructed a single panel threshold model (2), consider the possible existence of multiple threshold situations, and also construct a multi panel threshold data model (3), the models are set as follows:

$$\begin{aligned}
\text{Nonprofit outputs}_{it} = & \gamma_0 + \gamma_1 \text{annual inspection}_{it} * I(\text{annual inspection}_{it} < \tau) \\
& + \gamma_2 \text{annual inspection}_{it} * I(\text{annual inspection}_{it} > \tau) \\
& + \sum \gamma_m X_{it} + \mu_i + \varepsilon_{it}
\end{aligned} \tag{2}$$

$$\begin{aligned}
\text{Nonprofit outputs}_{it} = & \delta_0 + \gamma_1 \text{annual inspection}_{it} * I(\text{annual inspection}_{it} \leq h_1) \\
& + \gamma_2 \text{annual inspection}_{it} * I(h_1 < \text{annual inspection}_{it} \leq h_2) \\
& + \sum \delta_m X_{it} + \mu_i + \varepsilon_{it}
\end{aligned} \tag{3}$$

In model (2), model (3), i and t represent different provinces (cities) and years respectively. Nonprofit outputs means the dependent variable, annual inspection means the independent variable and also the threshold variable, τ , h_1 , h_2 is the threshold value to be estimated. $I(\cdot)$ is an indicative function, which takes a value of 1 when the corresponding conditions are met, otherwise it takes a value of 0. $\sum \gamma_m$ and $\sum \delta_m$ is a collection of control variables that are consistent with the control variables in model (1). μ_i is the individual effect, ε_{it} is a random error term, γ_0 , γ_1 , γ_2 , δ_0 , δ_1 , δ_2 , δ_3 is the estimated regression coefficient.

To better display the possible threshold value, we used the data before standardization, adopting Bootstrap method to examine the existence of the threshold effect (Hansen 1999), the result of threshold test is shown in Table 5. From Table 5, we can find that there is a single threshold effect between nonprofit outputs and government regulation, the single threshold effect is significant positively at 5 % statistical level, while the double threshold effect and triple threshold effect is not significant. Figure 2 reports the likelihood function graph, which clearly reflects the process of constructing threshold estimates and confidence intervals. The statistical graph shows that within a 95 % confidence interval, the threshold value is 10,086, indicating that there is indeed a non-linear relationship between the output of non-profit organizations and government regulation. Table 6 shows the differentiated influence between the relationship between government regulation when

Table 5: Result of threshold test.

Threshold	Bootstrap times	Fstat	P-value	Crit10	Crit5	Crit1	Threshold estimate value	95 % confidence interval
Single	300	11.06**	0.050	9.386	10.989	16.925	4,416	[4,577 4,700]
Double	300	6.58	0.203	8.334	9.988	15.237	8,802	[8,568 8,939]
Triple	300	4.46	0.463	11.133	14.824	24.862	10,086	[10,058 10,231]

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

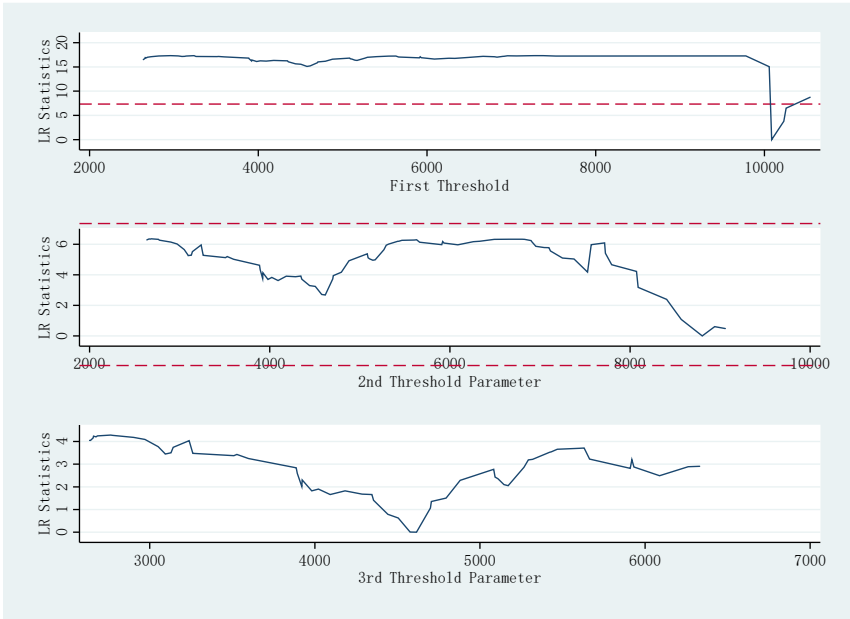


Figure 2: Estimated threshold for annual inspection of nonprofits and their confidence intervals.

Table 6: Result of single threshold model estimation.

	Model 5
Annual inspection (annual inspection < 10,086)	4.798** (2.51)
Annual inspection (annual inspection ≥ 10,086)	1.735* (1.84)
Control variables	Control
Constant	−7.3e + 04** (−2.30)
R ²	0.305
N	240

t statistics in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

government regulation intensity is in different threshold range. We can see from Table 6, when annual inspection amount is less than 10,086, the coefficient of the independent variable is 4.798, which is significant at 5 % statistical level. However, when the annual inspection is greater than or equal to 10,086, the coefficient of the

independent variable is 1.735, which is significant at 10 % statistical level. From this change, we can see that the relationship between government regulation and non-profits outputs is not always linear positively. Only government regulation intensity keeps in a certain range, can it spur the output of nonprofit organizations.

Additionally, based on prior deduction and hypothesis of theoretical logic among government regulation, nonprofits outputs, and social donation, further, verify the mediating function of social donation. Hayes (2009) points out that independent variable X exerts an effect on outcome variable Y by one or more mediators happening in the mediation model. That means if variable X affects variable Y through M , then M is mediating variable. In order to verify the existence of the intermediary effect, the stepwise regression method of Baron and Kenny (1986) is used to further construct the intermediary effect model, including three models. Model (4) is the model of nonprofits outputs, under the basis of control variables, adding government regulation (independent variable), examining the total effect of government regulation on nonprofits outputs. Model (5) is the social donation model, which tests the effect of the independent variable (government regulation) on the mediating variable (social donation). Model (6) is the joint model, in which government regulation and social donation are added at the same time to test whether there is an intermediary effect. All models are set as follows:

$$Y_{it} = \alpha + \beta_0 X_{it} + \beta_1 Z_{it} + \varepsilon_{it} \quad (4)$$

$$M_{it} = \alpha + \lambda_0 X_{it} + \lambda_1 Z_{it} + \varepsilon_{it} \quad (5)$$

$$Y_{it} = \alpha + \delta_0 X_{it} + \delta_1 M_{it} + \delta_2 Z_{it} + \varepsilon_{it} \quad (6)$$

In the above three models, Y_{it} represents the output of nonprofits in t period of i province, X_{it} represents the government regulation in t period of i province, M_{it} represents the social donation in t period of i province, Z_{it} represents the control variable, and the parameters to be estimated and the random interference term is consistent with Model (1).

The regression results of the mediating effect model are also shown in Table 7. Models 6, 7, and 8 represent the output model of nonprofits, the social donation model, and the association model of nonprofits outputs respectively. According to relevant analysis steps, the coefficient of independent variable in Model 6 is significant, the mediating effect exists. To continue to explore whether the mediating effect of social donation is partially or completely mediated, verification is carried out. The first step is in Model 6, the coefficient β_0 of government regulation is significant, indicating the possibility of mediating effect. The second step is both the coefficient λ_0 of government regulation in Model 7 and that of social donation in Model 8 is significant suggesting that the indirect effect is significant. The third step is the

Table 7: Regression results of mediating effect.

	dv: nonprofits outputs (model 6)	dv: social donation (model 7)	dv: nonprofits outputs (model 8)
Social donation			0.357*** (0.070)
Annual inspection	0.312*** (4.77)	0.346*** (5.92)	0.188*** (0.067)
Organizational scale	0.005 (0.09)	-0.052 (-1.16)	0.023 (0.048)
Voluntary service time	0.535*** (9.41)	0.158*** (3.11)	0.479*** (0.055)
Nonprofits income	-0.051 (-0.81)	0.361*** (6.47)	-0.180*** (0.064)
Nonprofits' professionalization	0.065 (1.19)	0.031 (0.63)	0.054 (0.052)
Proportion of nonprofits female members	-0.039 (-0.65)	0.007 (0.14)	-0.042 (0.057)
Constant	0.034 (0.70)	-0.082* (-1.89)	0.063 (0.046)
R^2	0.531	0.580	0.579
N	240	240	240
Sobel test	$Z = 3.878 > 0.97$, $P = 0.0001$, mediating effect is significant		
Bootstrap test	The confidence interval for indirect effects is [0.056 0.191], which does not include 0, mediating effect is significant		

t statistics in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

coefficient δ_0 of government regulation in Model 8 is significant, showing that the direct effect is significant, that is a partial mediation, and the proportion of the mediation effect to the total effect is 0.40. To further test the existence of the mediation effect, the testing methods of Sobel and Bootstrap were used to verify the results (as seen in Table 7), both of which passed the corresponding test. In the joint model, government regulation and social donation are significant at the statistical level of 1%, the increase in social donation has a positive effect on the output of nonprofits. In addition, from Model 6 to Model 8, the marginal effect of government regulation on the output of nonprofits decreases from 0.312 to 0.188, again indicating that the effect of government regulation on the output of nonprofits is affected by social donations.

Therefore, it can be seen that social donation is the intermediate bridge of government regulation affecting the output of nonprofits.

Based on the above model regression and test, the causal chain of “government regulation → social donation → nonprofits outputs” does exist. Hypothesis 2 has been verified, that is, government regulation can affect nonprofits outputs by influencing social donations.

From results of deeper analysis, we find out the nonlinear relation between government regulation and nonprofits outputs, and also the intermediary mechanism between them. These results can be explained by organization legitimacy and signal theory. From the perspective of the theory of organizational legitimacy, if nonprofit organizations are regulated by the authorities, they will give the public a more reliable and secure impression. While, if nonprofits receive too strong regulations from governments, it would disseminate a negative signal that this nonprofit is not perfect, thus influencing the public donation willingness negatively, further, which is not conducive to nonprofits outputs. Besides this, behind the high intensity of government regulation is the high degree of government embeddedness in nonprofit organizations, which will inhibit the diversity and autonomy of nonprofit organizations, affect the services provided by nonprofit organizations.

7 Conclusion and Discussion

This study is based on the panel data of 29 provinces in China (excluding Jilin, Tibet, Hong Kong, Macao and Taiwan) from 2010 to 2019, and analyzes the government’s regulatory mechanism on nonprofits outputs by constructing econometric models. Our main findings are as follows: First of all, government regulation has a significant positive impact on nonprofits outputs and has played a good governance effect, which verifies the applicability of the theory of organizational legitimacy and embeddedness in explaining the relation between government regulation and outputs of nonprofit organizations. However, there is a single threshold between government regulation and nonprofits outputs, when government regulation intensity beyond a certain critical value, the positive effect begins to decrease.

Second, social donation plays an intermediary role between government regulation and nonprofits outputs. This discovery shows a causal chain, that is, “government regulation → social donation → nonprofits outputs”.

Our findings have two main contributions to the existing correspondingly research. First, we fill the gap of exploring the logic between government regulation and nonprofits outputs, although our research focus on the context of China. From our results, we can give some enlightenment to regulators of similar regimes countries. For example, in the current initial or medium-term development stage of China’s nonprofit organizations, the government should continue to regulate nonprofit organizations to stimulate their outputs. However, the government

regulation intensity should be kept within a reasonable range. The government should try to maintain the autonomy and independence of nonprofit organizations to prevent excessive intervention from reaching a deadlock. Secondly, we have improved the current government regulation theory based on organizational legitimacy and embeddedness theory empirically, and made contributions to understanding the relation between the Chinese government and nonprofit organizations. Based on Granovetter's embeddedness theory, most behavior is closely embedded in interpersonal relations networks (Granovetter 1985), in China, to get more resources, invisible and visible, most behaviors of nonprofit organizations are also embedded in their governance fields. Therefore, we also extended the embeddedness theory into an organizational development field, enriching this theory and applying it to a broader spectrum.

Although our research has some contributions that relevant scholars have never paid attention to. However, there are still some deficiencies. First, the increase in the output of nonprofit organizations is not only related to government regulation, but also affected by the internal governance of nonprofit organizations. At the macro empirical level, we cannot explore more detailed mechanism. Second, government regulation is a multi-dimensional concept, and the ways of government regulation are diverse. Given the availability of data, we cannot measure government regulation comprehensively. In the future, we will continue to solve these problems at the micro or macro level.

Note:

1. Statistical Bulletin on the Development of Civil Affairs in 2020. <http://images3.mca.gov.cn/www2017/file/202109/1631265147970.pdf>.

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