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The key to system performance lies in implementation: empirical evidence from labor dispute data of Shanghai from 1918 to 1940

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ABSTRACT

The process of system implementation could be the key to determining system performance. This paper discusses this issue by using empirical methods to analyze Shanghai labor dispute cases. Although the labor dispute settlement system is designed to protect workers, empirical analyses show that government intervention will inhibit workers in labor disputes. Further analysis reveals that government intervention is selective based on the case reasons and differs in intensity. In addition, the events that affect government power may influence the case outcome.

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KEYWORDS

System performance; system implementation; labor dispute mediation

1. Introduction

In institutional economics research, both the design and the implementation of the system should be considered when the system is evaluated (Bressers & Honigh, 1986). Undoubtedly, excellent system design can effectively promote economic development (Acemoglu & Robinson, 2012). However, there have been many systems in history that failed to perform their role due to poor implementation. Although some studies have emphasized the role of system implementation (Beslev & Persson, 2011; Bressers & Honigh, 1986; Durlak & DuPre, 2008; Malinowski, 2019), empirical analysis methods are rarely used. Even if an empirical analysis method is used, it is difficult to quantify the system performance and implementation, which makes it difficult to reflect reality directly. For instance, Malinowski (2019) used the number of parliamentary working days to represent the status of parliamentary system implementation when studying the Polish parliamentary system in the 16th century, which cannot fully and intuitively reflect the status of system implementation. To obtain a more direct evaluation of the system implementation, it is necessary to observe how the system handles individual cases. To solve this problem, this paper has compiled a file of statistical data from labor dispute cases in Shanghai between 1918 and 1940 and used government intervention as the factor that reflects the status of system implementation to analyze the impact of system implementation on system performance.

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The main purpose of this paper is to use empirical analysis to study the effect of system implementation on system performance. In the case analysis, this paper draws on the institutional change theory method (Davis, North, & Smorodin, 1971) to analyze the fluctuations in system performance in the labor dispute settlement system (LDSS) in the form of case outcomes. Based on the ordered characteristics of the variable, we will use the ordered-logit model to analyze the impact of government intervention on the outcome of the case. In the empirical analysis, we use Heckman's two-step correction, the condition mixed process (CMP) method, and instrumental variables to eliminate the endogeneity problem. In addition, the robustness of the regression results is tested by changing the form of the core independent variable and adding control variables.¹

This paper selects the LDSS of Shanghai from 1918 to 1940 as the main object for the following reasons: (1) The design purpose is different from the actual situation.² The LDSS is designed to appease angry workers after "the 4.12 incident",³ and it is supposed to protect the interests of workers. However, it is difficult for workers to benefit from labor disputes involving government intervention, as (Figure 1) shows. The monthly win-rate of workers in labor dispute cases has not noticeably increased.⁴ (2) In contrast with the rule of the Northern Warlords, the LDSS was an official system that gave workers a way to legally protect their interests. (3) Complete case data will greatly reduce the endogeneity problem of the study. The data record the reason for the case, the plaintiff



Figure 1. Monthly worker success rate in labor dispute cases.

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³On 12 April 1927, the Kuomintang massacred thousands of workers and students who supported China's Communist Party, including left wing members of the Kuomintang, which caused a large number of members to resign the KMT. After the massacre, the number of Kuomintang members was reduced by two-thirds.

⁴The average win-rate of Northern Warlords is 20.37%, while the average win-rate of the Chiang Kai-Shek government is 20.44%.

and defendant's information, the firm's industry, the dispute's duration, the mediator, and the result of the case in detail. (4) Economic complexity was far lower than that of modern society, which also reduces endogeneity when using empirical methods to study the effect of system implementation on labor dispute cases. For the above reasons, it will be valuable to study labor dispute cases in Shanghai from 1918 to 1940.

The contributions of this paper are mainly twofold. First, this paper finds that system implementation has an important impact on system performance through empirical analysis, which verifies the view of Besley and Persson (2011), and finds that the stance of the government could affect the outcome of labor dispute cases that it interferes with. Second, this paper finds that events that affect government power will have an important impact on system performance. Therefore, when establishing a system, it is necessary to pay special attention to its implementation. In the process of system implementation, not only should executors have strong power to break the obstacles encountered, but executors must also be supervised to ensure that the system can provide due functions and services.

2. Literature review

The Coase (1960) theorem and institutional change theory (Davis et al., 1971) provide the basis for the theoretical analysis of this paper. The Coase (1960) theorem implies that if a system can initially allocate property rights and liability arising from tort law, then the system is economically efficient. The internalization of transaction costs is an important means to solve externality problems. However, due to imperfect legislation, the transaction cost may not be zero, which makes the system inefficient. Based on Davis et al. (1971), the establishment of the formal system can increase the benefits of participants; however, the realization of the role of the system depends not only on excellent system design but also on other factors that are relatively important. Acemoglu and Robinson (2012) pointed out that national power and the ability to implement systems and policies are important factors that affect the system. Besley and Persson (2011) believe that the realization of the role of the system depends on factors such as the country's support for fiscal and implementation capacity. More directly, Durlak and DuPre (2008) find that implementation would have a great impact on program outcomes. Previous analyses have pointed out that system implementation is the key to system performance, but sociology is more inclined to conceptualize qualitative analysis, while institutional economics is limited by the difficulty of information quantification and uses many substitute variables. Therefore, there is a lack of empirical analysis to prove this hypothesis.

In labor dispute cases, there are two main methods to solve the problem: one is a formal system using legal proceedings, official mediation, or arbitration, and the other is an internal negotiation between labor and management, or a noncompulsory third party for mediation, which could be called informal systems. An informal system of dispute resolution is a good method to solve the problem in time, but it does not have compulsive power (Saundry, McArdle, & Thomas, 2013), and the result is largely affected by the difference in strength between the two parties. The formal system is legally binding, and it takes a long time due to complicated procedures where the government or official institutions need to play a role (Zhang & Cai, 2019). The outcomes of labor dispute cases using formal systems are more affected by the law. Regardless of formal or informal systems, mediation and arbitration are relatively common methods of resolution (Saundry et al., 2013). The features of the mediator and arbiter could influence the results of these cases (Arthur, 1960; Davis et al., 1971). The outcome of the case not only influences the welfare of workers but also affects product quality (Mas, 2008) and production costs (Ana & Jose, 2007). These reviews fully illustrate that mediators and arbitrators have an important influence on the outcome of labor dispute cases. Therefore, this paper takes the case outcome as the main dependent variable and government intervention as the main independent variable to analyze the impact of system implementation on system performance.

3. Case analysis

3.1. Institutional benefits of different participants

During the period of the Republic of China, the main participants in the LDSS in Shanghai were the government and its subordinate departments or institutions, employees and employers. The benefits could influence their behaviors when using the LDSS. It could help to analyze the logic of each participant's behavior by clarifying their interest demands.

Specifically, as the supplier and executor of the system, the Chiang Kai-Shek government derives its institutional benefits from the widespread use of the system so that all of society solves the labor-management contradictions through the LDSS. Alleviation of labor-management conflicts will stabilize society and benefit economic development, which will increase Chiang Kai-shek's reputation. Workers hope to obtain better outcomes in labor dispute cases through the LDSS and to be guaranteed that the outcome of the case has legal force. However, if the government is biased towards the employer in the handling of labor dispute cases, the labor income that the laborer can obtain in the labor dispute system will be reduced. When the income obtained is less than the cost of the system, the laborer will have a "negative" attitude towards mediation in the next labor dispute. If the government favors workers, workers will continue to choose the LDSS as a solution to the labor-management conflict. For the employer, the benefit from the LDSS lies in solving the contradiction between labor and management. They need to maintain the production order, which will help them pursue the maximization of the interests of the enterprise; therefore, management is unwilling to have labor disputes. The data show that there were only 30 cases of management applications for mediation or arbitration from 1918 to 1940. Consequently, this paper will focus on studying the cases of worker applications rather than the cases of employer applications. However, due to the gap in strength between labor and management, some improper means may be used. For example, when the details of the case are not good for management, management may choose to absent from mediation or arbitration to delay time⁵ or bribe the relevant person in the case. It is difficult to obtain information by illegal means and is therefore outside the scope of this article. For the system to continue to function and to provide an outcome to the case that is satisfactory to all parties, the government should handle labor

⁵According to the Implementation Rules of Shanghai Special City of Labor Dispute Settlement System article 9, there will be a absent arbitration if one party does not arrive at meeting in time twice.

disputes fairly and independently, ensuring that the law is a key factor driving the outcome of the case.

3.2. System performance fluctuation

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From the rule of the Northern Warlords to the rule of the Chiang Kai-shek government, the handling of labor disputes changed from using the informal system to using the formal system. The Northern Warlords, who ruled Shanghai until 1927, believed that the way to resolve labor disputes was to adopt an informal system in which the workers and factories chose a highly respected person as a mediator, but the result of such mediation was not legally guaranteed. When the results did not satisfy both parties, one of the parties could refuse to accept the mediation result, which makes the mediation inefficient. However, although the formal system had legal force, the speed at which the formal system in handling labor disputes under the control of the Chiang Kai-shek government was much lower than that of the informal system, as shown in (Table 1), which made workers spent too much time on labor disputes. Procrastination tactics were a good way to force the workers to relent because neither the employer nor the government had any commitment to pay the wages of workers during the disputes so that workers were subject to high opportunity costs when the dispute lasted too long. This is one of the important reasons that the formal system could not increase the win rate of workers in labor disputes.

After "the 4.12 incident", the contradiction between labor and management became more acute. To appease the workers and management, Chiang Kai-Shek enacted a series of laws and regulations, including the Factory Law, the Group Agreement Law, and the Labor Dispute Settlement Law and its amendments. The promulgation of each new law or regulation can be regarded as an institutional reform of the LDSS. The continuous improvement of the system increased the government's intervention in labor dispute cases. However, when the reform ceased, the problem of the poor implementation of the system by the Chiang Kai-shek government was gradually exposed. When Kuomintang officers dealt with labor dispute cases, the officers had too much leeway to influence the result. Corruption and internal struggles provided an opportunity for one party to win the case by unfair means. In most cases, it is difficult for workers to provide more benefits to the government than employers. Therefore, workers are more likely to be injured in the mediation and arbitration of labor disputes.

(Figure 2) depicts the government's participation in labor dispute cases, and it is clear that the monthly rate of government intervention in labor dispute cases declined after the end of the reform in 1930, as noted earlier. The decline in government participation in labor dispute cases may be caused by the poor implementation of government, which

Table 1. Ler	igth of labor disputes.	
	Northern Warlord Rule	Chiang Kai-Shek Rule
Mean	8.794	19.662
Median	2	12
Min	0.04	0.01
Max	190	355
Obs	612	4386

Notes: Data sources Labor Statistics in Shanghai from 1918 to 1940

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Figure 2. Monthly rate of government intervention in labor dispute cases.

damages workers, leading workers to be unwilling to use the formal system. It is necessary to further analyze the operating mechanism of the LDSS to determine the possibility of this hypothesis.

3.3. System operating mechanism

Analyzing the operating mechanism of the LDSS is helpful to analyze the system implementation. This paper summarizes the operation mechanism of the LDSS, as shown in (Figure 3 and 4). The government, industry trade unions and third-party institutions, and individuals are the most popular mediators in labor dispute cases. Industry trade unions and third-party institutions or individuals' mediation requires the permission of both workers and management, and the outcome does not have legal force. In contrast, each party of workers and management will have their request accepted and heard by the government. Then, the department of the Shanghai Social Bureau will organize the Labor Dispute Mediation Committee (LDMC). The LDMC is composed of one or three officials of the Shanghai Social Bureau and two representatives of each party. After the LDMC investigates the case, both workers and management need



Figure 3. Main mediators and their legal forces.



Figure 4. The participation of the LDAC & LDMC over the years.

to present their claims. The outcome of the case will be decided by the LDMC vote. If both parties sign the case mediation letter, the case outcome will have legal force. However, each party has the right to refuse the case outcome. If the case mediation result is not accepted, the Shanghai Social Bureau will convene the Labor Dispute Arbitration Committee (LDAC). The LDAC is composed of one official, one party representative, one local court representative, and one representative from each party who has no direct interest in the dispute. The outcome of the case will also be decided by the LDAC vote, but the arbitration result is legally effective without both parties' signatures. The government can also accept labor disputes and make mediation or administrative punishment, and the outcome has legal force. The difference is that the government can either accept cases through labor or management applications or actively intervene in cases. According to Labor Dispute Settlement Law Chapter 1, article 1, the government can only actively intervene in large-scale cases or cases lasting more than a month. As far as the above process is concerned, the system may be helpful to alleviate labor-management conflicts. In practice, the system has a very significant flaw; the default cost is extremely low for management and extremely high for workers. According to Labor Dispute Settlement Law Chapter 5, article 38, the party that refuses to perform the arbitration outcome will be fined 200 silver dollars or 40 days in prison. Statistics show that Shanghai workers have an average monthly income of less than 30 silver dollars. In general, it is difficult for workers to pay the penalty. Defects in the mechanism make it difficult for workers to protect their interests even if they win the case. If this situation becomes common, workers will mistrust the LDSS.

The flaws of the system design increased the probability of workers being injured in the case, while the system implementation determined the case outcome directly. In practice, due to poor implementation, workers experienced too many failures and increasingly distrusted the government. In a democratic society, citizens have the right to punish a government that harms their interests through elections. However, it would not work for Chinese society, which had just entered the industrial age. Citizens could not influence policy or decisions through a legal path. If the government aimed to improve the situation of workers, workers would trust the government and use the LDSS more frequently, even if it was an authoritarian government. However, the government did not protect the interests of workers in labor disputes. For example, the following was written in part of a ruling on a labor dispute in which the workers asked for reduced working hours:

Lead trade union workers demand a reduction in working hours Jul. 4th, 20th Republic of China "... The working hours are slightly reduced to show that compassion is not indispensable, but it is worthwhile. When the country has high diplomatic tensions, both employers and employees should seek the development of the enterprise in the spirit of cooperation. After a resolution of eight hours and three working hours per day. It will be implemented on New Year's Day next year ..."

Oct. 14th, 20th Republic of China From the above judgment, even if the trade union that represents the workers joins in collective bargaining, it still cannot effectively protect its legitimate rights according to the Factory Law, which provides for an 8-hour schedule. This case lasted for 3 months and 10 days, and the workers paid a considerable amount of time. Throughout the 1918–1940 labor dispute cases, these types of situations were everywhere. The workers had no way to change the situation except to adopt a more radical approach, such as strikes, or to just be patient.

4. Data and model

4.1. Data sources

The data used in this paper are statistical data on labor disputes and strikes from the Shanghai Special City Social Affairs Bureau during the Republic of China era. The bureau collected information on more than 5,000 labor disputes in Shanghai from 1918 to 1940, including information about the industry, company name, nationality of the employer, number of labor participants, number of employers, duration of the dispute, and whether it was resolved by mediation or arbitration. The information on the case and the outcome of the case provided a comprehensive picture of the labor disputes in Shanghai during the Republic of China. Labor relations in Shanghai experienced three stages based on who was in control. In stage 1, from January 1918 to February 1927, the Northern Warlords ruled Shanghai; during this period, there was no formal system to help workers obtain their rights. In stage 2, from April 1927 to November 1937, Shanghai was controlled by the Kuomintang government. Chiang Kai-Shek, the president of the Kuomintang, promulgated a series of laws to establish a labor dispute settlement system, which gave the workers an approach to pursuing their interests, but in fact, workers did not

fundamentally improve their living conditions due to poor system implementation. In stage 3, from the end of 1937 to 31 December 1940, Shanghai was controlled by Japan, and the LDSS died with the withdrawal of the Nanking government from Shanghai. During the period of occupation by Japan, workers and capital tried to solve the labor conflict in many ways, but none were official. This period is not the focus of the content discussed in this article. In the above three stages, stage 2 is the most important stage that the article will discuss, and it will help us determine whether the implementation of the system affects the efficiency of the system by analyzing the impact of government on the results of labor dispute cases.

4.2. Main variables

First, the study takes the result of labor dispute cases as the dependent variable. According to the results of the labor dispute cases delineated by the Shanghai Social Bureau, they can mainly be divided into three categories: the complete failure for the workers, a mutual compromise between employers and employees, and complete victory for the workers. The results of the labor disputes are represented by numerical values sorted by how much success the workers could obtain.

Second, in the selection of independent variables, the mediation method of labor disputes is the main independent variable. The mediation methods are mainly divided into four types: government mediation, Labor Mediation Committee or Labor Arbitration Committee mediation (institutional mediation), trade union mediation, and internal negotiation. The results of government mediation in the four types of mediation have legal effects and will directly affect the services and functions that the LDSS can provide. The government claimed that institutional mediation was a democratic mediation system, but the Shanghai Social Bureau has final adjudication power. The mediation result was most likely sent for an appeal to government mediation when workers or capital were not satisfied; therefore, it had little effect on the services and functions provided by the labor dispute system. Trade union mediation and internal negotiation existed long before the ruling of the Chiang Kai-Shek government, and they are informal systems.

Finally, in the selection of control variables, this paper mainly controls the reason for the case, the industry of the enterprise, the nationality of the employer, the duration of the labor dispute case, and the number of workers and firms involved in the case. The reasons for selecting these control variables are as follows. (1) The differences in the reason for the case represent different interests; when cases are brought for the same reasons, they can more clearly reflect the difference in the government's participation in labor disputes and other mediation. This will more clearly reflect the impact of government mediation on the outcome of labor disputes. On the other hand, knowing the reasons for the case will help in understanding the characteristics of the government's decision in the labor dispute handling system through an in-depth analysis of the results of the government's direct participation in claims cases brought for different reasons. (2) According to Sweden's experience, labor-intensive industries occupy the "core" position of labor-management relations, and the role of trade unions in "core" departments is strong, while other industries are in "peripheral" positions, and the power of trade unions is weak. The government needs to intervene in labor relations. The strength of the government's intervention in different industry cases will affect the outcome of labor disputes. (3) It is necessary to control the nationality of the company because there were many concessions in Shanghai where the Chiang Kai-Shek government could not manage the labor relationship directly. The Shanghai concessions cover the longest and largest area in China. The Municipal Council in public concessions, the French concession, and other foreign powers had a strong influence on the Kuomintang government, which could have affected how they dealt with labor disputes. Therefore, it is necessary to control their effects to more accurately reflect the interests of the Chiang Kai-shek government in the mediation of labor disputes. (4) Controlling for the strikes or length of the dispute can control the cost in terms of the time a worker spends on the case. In the absence of external subsidies, the longer the duration is, the higher the cost. In addition, the cost may not be covered even if the case is won because the law does not explicitly state whether capital needs to pay wages or subsidies during strikes or disputes. This would thus affect workers' willingness to fight for their rights, leading to a decline in the number of labor disputes or strikes. It is necessary to control for the duration of labor disputes to provide a clearer reflection of the impact of government system implementation on institutional returns in labor dispute cases. (5) The number of workers and firms involved in the case is an important standard influencing government invention. Because the laws promulgated by the government request that the case reach a certain scale, the government can actively intervene in labor disputes. Controlling the size and duration of cases can help us reduce the selection bias caused by government intervention in the model.

4.3. Descriptive statistics

(Table 2) provides the descriptive statistics for the main variables used in this paper, reflecting the characteristics of the data.

By comparing the descriptive statistics in (Table 2), we can find the following. (1) Labor dispute cases with a mediator were the largest category of cases that the government participated in, followed by the Labor Mediation Committee and the Labor Arbitration Committee, referred to as institutional mediation, and finally by the labor unions. Internal negotiation has always been one of the important ways of resolving the contradiction between labor and capital. (2) The result of the labor dispute cases can be divided into three groups: group 1 is a victory for the workers, group 2 is a partial victory for the workers, meaning that the workers' demands are partially satisfied, and group 3 is a failure for the workers. According to statistics, workers have the lowest win-rate of labor dispute cases under government or government-led agency mediation. (3) Different mediators concentrate on different types of cases. The government and official mediation agencies tend to mediate labor disputes; trade union mediation and internal negotiation are more actively involved in strike cases. The main method of negotiation is collective bargaining, and non-collective negotiations are rare. (4) From the perspective of the case reason, the contradiction between employers and employees is mainly reflected in wages and employment. In terms of relationships, various mediators have a slightly different focus on these issues. The government and its subordinate mediation agencies are more involved in cases involving employment relations. Internal negotiation

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			Mediator o	or Arbitrator(%)	
Type of Variables	Variables	Government $(N = 2273)$	Organization $(N = 610)$	Trade Union (N = 90)	Internal Negotiation $(N = 1852)$
	laco	24.22	6 20	21 11	22.75
Case result	LUSE Dorthy win	24.33	0.39	21.11	55./5 20.95
	Faitty Will	J4.47 21 21	74.45	43.30	39.03
Tuno	VVIII	21.21	19.10	22.22	20.40
Type	Jahor disputo	24./3	17.21	/ 3.33	75.97
Negotiation	Collective	/3.2/	02.79	20.07	24.03
Negotiation	Collective	98.20	99.34	92.22	88.50
type	bargaining	1.00	0.00	7 70	11 50
	Non-conective	1.80	0.00	7.78	11.50
Deesen	bargaining	1 15	0.22	0	0.22
Reason		1.15	0.33	0	0.22
	Group agreement	5.55	18.52	0.07	3.40
	wage	20.68	15.25	37.78	37.90
	Working hours	1.23	1.31	1.11	1.89
	Employment	53.54	53.11	35.56	26.57
	Ireatment	10.60	6.23	6.67	10.31
	System	0.92	1.15	2.22	1.62
	Sympathetic	0.35	0	1.11	1.73
	Political	0.13	0.33	2.22	7.34
	Others	5.85	3.61	6.67	9.02
Industry	Light	68.46	67.87	73.33	65.17
	Heavy	7.7	5.41	2.22	9.61
	Chemical	3.43	3.28	0	2.21
	Building	1.32	0.98	0	1.62
	Public service	5.98	3.28	15.56	11.50
	Business service	13.11	20.00	11.11	11.39
	Family service	0.92	0.82	2.22	1.57
Nation	China	87.29	94.92	74.44	66.74
	Japan	1.54	1.48	6.67	10.72
	The U.K.	7.04	1.8	15.56	12.31
	The U.S.A.	2.02	0.82	1.11	3.62
	Germany	0.26	0	0	0.49
	Denmark	0	0	0	0.27
	Italy	0	0.16	0	0
	France	1.36	0.82	1.11	1.57
	Spain	0.04	0	0	0.05
	Russia	0	0	0	0.27

Table 2. Different mediator	rs or arbitrat	ors in differe	nt situations.
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Notes: Data sources Labor Statistics in Shanghai from 1918 to 1940

is mainly applied to wage issues, and trade unions mainly participate in both wage and employment discussions. (5) In terms of industry and corporate nationality, all types of mediation methods are mainly applied to the light industry and the commercial service industry which, due to the economic construction of the Republic of China, are mainly composed of the light industry and business. The U.K., as the earliest country with concessions in China, and Japan, the closest industrial country to China geographically, had the most labor dispute cases among foreign companies, and these cases were rarely mediated by the Kuomintang government. The above descriptive statistics describe the characteristics of labor dispute surgets during the Republic of China. The government was widely involved in labor dispute cases, but the labor win-rate in labor dispute mediation by the government or its affiliates was lower than that in other channels. To more clearly demonstrate the impact of the government's system implementation on the efficiency of

			The outcome of the la	abor dispute case		
	ologit	ologit	oprobit	orprobit	selection	correction
	(1)	(2)	(3)	(4)	(5)	(9)
gov	-0.3714**	-0.3943**	-0.2207**	-0.2254**	-0.2260***	-0.2264**
	(0.1590)	(0.1642)	(0.0935)	(0.0935)	(0.0936)	(0.0935)
institutional	-0.4260*	-0.4510*	-0.2147	-0.2397*	-0.2410*	-0.2414*
	(0.2342)	(0.2464)	(0.1384)	(0.1435)	(0.1436)	(0.1437)
trade union	0.3413	0.3364	0.1876	0.2087	0.2089	0.2090
	(0.2450)	(0.2593)	(0.1455)	(0.1515)	(0.1515)	(0.1515)
internal	-0.3476**	-0.3255**	-0.2008**	-0.1834**	-0.1843***	-0.1846**
	(0.1402)	(0.1460)	(0.0808)	(0.0832)	(0.0832)	(0.0832)
KMT rule	0.3484*	0.6171***	0.1792	0.3162***	0.3169***	0.3169***
	(0.1988)	(0.2031)	(0.1105)	(0.1135)	(0.1135)	(0.1135)
LDA	-0.3444**	-0.3221*	-0.1913**	-0.1833*	-0.1837*	-0.1837*
	(0.1679)	(0.1671)	(0.0948)	(0.0958)	(0.0958)	(0.0958)
CB	0.3697**	-0.7515**	0.2175**	-0.3987**	-0.3987**	-0.3986**
	(0.1615)	(0.3289)	(0.0903)	(0.1759)	(0.1760)	(0.1760)
strike	-0.7085***	-0.8310***	-0.4054***	-0.4705***	-0.4704***	-0.4712***
	(0.0897)	(0.0937)	(0.0519)	(0.0542)	(0.0542)	(0.0542)
Intn	0.0699***	0.0336**	0.0401***	0.0173*	0.0173*	0.0173*
	(0.0150)	(0.0167)	(0.0087)	(0.0097)	(0.0097)	(0.0097)
Indays	-0.1348***	-0.1166***	-0.0764***	-0.0680***	-0.0681***	-0.0682***
	(0.0293)	(0.0297)	(0.0162)	(0.0165)	(0.0165)	(0.0165)
Infirm_num	0.1174***	0.0803**	0.0674***	0.0481**	0.0477**	0.0477**
	(0.0290)	(0.0322)	(0.0171)	(0.0189)	(0.0189)	(0.0189)
Infiscal	-0.0450	-0.0496	-0.0195	-0.0265	-0.0262	0.0260
	(0.0440)	(0.0485)	(0.0241)	(0.0268)	(0.0268)	(0.0268)
Reason		>		>	>	>
Industry		>	>	>	>	>
Fnationality		>	>	>	>	>
Wald-Test					0.7913	
Prob>chi2						
LnpseudoL	-4624.639	-4509.246	-4642.952	-4516.450	-4883.438	-4863.393
Pseudo R ²	0.0157	0.0403	0.0157	0.0387		
Z	4619	4619	4619	4619	4720	4720
Notes: Robust standard error. controlled by the KMT. <i>LDA</i> by the trade union. <i>strike</i> is	s in parentheses, *** p < 0.0 is a time dummy representi a dummy indicating that a s	1, ** $p < 0.05$, * $p < 0.1$. The ng the time when the Labor D trike occurred in the labor dist	<i>KMT rule</i> is a time dummy ispute Settlement Law is en oute. <i>Intn</i> is the natural log:	indicating the period from Ap forced. <i>CB</i> is a dummy indica arithm of the numbers of work	oril 1927 to November 1937 w titing that the workers in the ca kers involved in the case, <i>Inda</i> ,	hen Shanghai was se are represented s is the natural log
or the number of days the c The independent variables	ase lasts, <i>innim_num</i> is the r of the regressions are the r	natural log of the number of co esults of the case. Fnationality	ompanies involved in the c / is a series of dummies in	ase, and <i>initscal</i> is the hatural i dicating company nationality.	log of the government annual	nscai expenditure.

the system, an empirical test is needed to determine whether the Kuomintang government's implementation of the labor dispute system improved its performance.

4.4. Model setting

This paper adopts the ordered logit model, which is mainly used to estimate the relationship between independent variables and ordered dependent variables. In this paper, the results of the labor dispute cases are used as the dependent variables. The three results of "worker's failure", "worker's partial victory" and "worker's victory" have an obvious order. Therefore, the ordered logit model is used to estimate the relationship between the respective variables and the dependent variables and, further, to calculate the corresponding variables. The specific formula for the marginal effect of the influence of the dependent variable is as follows:

$$P(y = j/x_i) = \frac{1}{1 + \exp(-(\alpha + \beta x_i))} \#(1)$$

where y represents the result of the labor dispute negotiation, and the result is assigned j (j = 0, 1, 2), where y = 0 means that the worker completely fails in the labor dispute negotiation, y = 1 means that both sides make a concession in the labor negotiation, y = 2 means that the worker achieved a complete victory in the labor dispute negotiation, and x_i represents factor i affecting the outcome of the labor dispute negotiation. The sequenced logit model is established as follows:

$$Logit(P_i) = ln[P(y \le j)/P(y \ge i+1)] - \alpha_j + \beta x \# (2)$$

where P_j is the probability of the result of the labor dispute, $P_j = P(y = j), j = 0, 1, 2; (x_1, x_2, ..., x_i)^T$ represents a set of independent variables; α_j is the intercept of the model; and β is a set of regression coefficients corresponding to x. After estimating α_j and β , the marginal effect on the impact of the labor dispute negotiation results can be determined by assigning the value of x_i to determine the influence of the independent variable from 0 to 1.

To solve the endogeneity problem, this paper will also use the ordered probit model. Since the estimation methods of the ordered logit model and ordered probit model are basically the same, this paper will not explain the estimation methods of the ordered probit model.

5. Regression and results

5.1. Benchmark

In this paper, the ordered-logit model and ordered probit model are used to analyze the data of labor disputes and strikes for 1918–1940. The impact of the LDSS created by the government on the results of labor dispute cases can be observed from the regression.

(Table 3) columns (1) and (2) use the ordered logit model. Columns (3) and (4) use the ordered probit model. Column (5) uses Heckman's maximum likelihood estimation tests for selection bias. Column (6) uses the conditional mixed process (CMP) to correct the selection bias of the model. Column (1) shows that the results for workers during the

period of Kuomintang rule are better than those during Northern Warlords' rule, which indicates that an official labor dispute settlement system can improve the situation of workers. The coefficient of gov indicates that government intervention in the labor dispute case will harm the interest of workers, as do the LDMC & LDAC. Unfortunately, trade unions could not play a role in labor mediation. In addition, workers could not protect their interests through internal negotiation with management. The longer the strike or dispute lasted, the more unfavorable the decision was for the worker. The greater the scale of the labor disputes, the better the possible outcome for the workers. Column (2) is an ordered-logit model with control variables. The results indicate that the model is robust. The coefficients and significance of the main independent variables of the model do not change significantly after adding a series of control variables. Both Column (3) and Column (4) indicate that the model is robust. The coefficient signs and significance of the main independent variables of the model do not change significantly after using the ordered probit model. Then, this paper uses Heckman's maximum likelihood estimation to test whether there is selection bias. If there is a selection bias, the model will ignore the impact of the no-results cases and cause biased estimation. As shown in Column (5), the p score of the Wald Test is 0.7913, which means that the model does not have selection bias. To ensure the robustness of the model, this paper uses CMP to correct the selection bias. The results in Column (6) indicate that the model is robust. The coefficients and significance of the main independent variables do not change significantly. In general, the mediator or arbitrator could be the key to influencing the outcome of the case, but not all mediators or arbitrators have an effect on the outcome of the case. During the KMT's rule, the trade union did not have a significant effect on labor dispute cases. Government intervention may be the most important factor influencing the outcome of the case.

5.2. The impact of government intervention on different cases

The effect of government intervention was negative for workers, but why would it be so? To determine the reason for suppressing workers, it is necessary to ensure that the most important factor is whether Kuomintang influences the outcome of labor dispute cases by examining the interaction of the government with the reason for the case. According to the regression results, the attitude of the Chiang Kai-shek government toward different cases is reflected clearly. In these regressions, the type of negotiation, industry, time period, number of workers and firms involved, annual fiscal state of the government, and the Kuomintang rulers are controlled to help us determine the impact of government intervention in different types of cases.

(Table 4) indicates that the government's participation in mediation decreased the win-rate for workers, leaving other variables unchanged. It can be found that the government's impact is significant in cases of forming a trade union, employment, and sympathy. Column (1) indicates that when forming a trade union, the case's win rate when mediated by the government will be $\exp(-1.147) = 0.318$ times the rate when not mediated by the government, leaving the other variables unchanged. Even though the number of cases is not large, this result shows that the government did not take the workers' concerns lightly and aimed to prevent them from forming unions. Column (6) shows that the government is willing to help workers improve basic treatment. Column

				The outcome o	f labor dispute case	(ordered-loait)			
	(1)	(2)	(3)	(4)	(5)	(9)	(2)	(8)	(6)
gov # TU	-1.147*** (0 5134)								
gov # GA		-0.299 (0.3165)							
gov # WA			0.0412						
HM # NOB			(1-07-0)	-0.205					
gov # EM				(0.4491)	-0.457*				
gov # TRE					(0.2443)	0.554***			
gov # SYS						(167.0)	-0.741		
gov # SYM							(4060.0)	-3.742***	
gov # POL								(coco.1)	-0.608
Control Variable	>	>	>	>	`	`	`	>	(1:4051) ✓
LnpseudoL Pcelido R ²	-4497.24 0 0428	4488.49 0 0447	-4497.33 0.0428	-4496.59 0.0430	-4497.26 0.0428		-4496.55 0.0430	-4496.24 0.0430	-4497.34 0.0428
Case Num	35	327	1364	75	2103	488	63	46	158
Z	4619	4619	4619	4619	4619	4619	4619	4619	4619

(8) indicates that in cases of "sympathy" the workers' win-rate, when mediated by the government, was exp(-3.742) = 0.024 times the rate when not mediated by the Kuomintang, leaving the other variables unchanged. This indicates that the Kuomintang government did not want workers and other groups to support each other so that all types of workers could unite. Although the number of cases related to forming a trade union or "sympathy" is not large, these results still indicate that the Kuomintang government did not want workers to unite and potentially disrupt their rule. Column (5) indicates that the win-rate of cases mediated by the Kuomintang government arising from employment relationships was exp(-0.457) = 0.633 times the rate of those not mediated by Kuomintang, leaving the other variables unchanged. The number of cases brought about due to employment conflicts is large enough to allow a more detailed study, which may help us determine the aims of the Kuomintang government in mediation.

Employment contradiction can be classified into four types: opposition to the dismissal of staff, requests to hire staff, requests to dismiss staff, and opposition to the hiring of staff. Mediation by the Kuomintang government could have different effects in different cases, and the behavior of the Kuomintang government could reflect its attitude towards labor disputes. In this analysis, r_i represents the type of employment reason i, from 1 to 4, representing opposition to the dismissal of staff, requests to hire staff, requests to dismiss staff, and opposition to the hiring of staff, respectively. By crosslinking r_i , the coefficient of the cross-linked items can reflect the Kuomintang government's implementation in different cases based on the different reasons for the employment relationship. Additionally, we controlled for the type of negotiation and other reasons except for employment, industry, and firm nationality.

(Table 5) displays the effect of government mediation on the employment relationship. Column (1) indicates that when the government mediates a case brought by workers who are against the dismissal of staff, the workers' win rate is exp (-0.8693) = 0.419 times that of those cases not mediated by the government, leaving

	Т	he outcome of labor dis	pute case (ordered-logi	t)
Gov # ODS	(1) -0.8693*** (0.2053)	(2)	(3)	(4)
Gov # RHS		-0.9782* (0.5800)		
Gov # RDS			-0.4337 (0.8231)	
Gov # OHS				-0.6101 (0.6063)
Control Variable	\checkmark	\checkmark	\checkmark	\checkmark
LnpseudoL	-4497.7933	-4499.1225	-4496.6435	-4498.1127
Pseudo R ²	0.0427	0.0424	0.0430	0.0426
Ν	4619	4619	4619	4619

Table 5. Government intervention in different employment cases.

Notes: Robust standard errors in parentheses, *** p < 0.01, ** p < 0.05, * p < 0.1. The independent variable for all regressions is the outcome of the labor dispute case. ODS represents opposition to the dismissal of staff. RHS is the request to hire more staff. RDS represents the request to dismiss staff. OHS represents worker opposition to hiring staff. Gov# r_i is the interaction term of Kuomintang mediation and employment reasons.

other variables unchanged. Column (2) shows that when the government mediates a case brought by workers asking to hire staff, the workers' win-rate is exp(-0.9782) = 0.376times that of when the case is not mediated by the government, leaving the other variables unchanged. In contrast, the coefficient is not significant when the government mediates cases brought by workers asking to dismiss staff or against hiring staff. Why? Let us examine the subdivided employment reason again. It can be found that there is a tendency for workers to unite against the dismissal of staff and in requests to hire staff, whereas they tend to split on requests to dismiss staff and requests against hiring workers. After "the 4.12 incident", the Chiang Kai-Shek government did not want the workers to unite, as this could shake the foundation of their domination. Undoubtedly, the government would use all means possible to prevent workers from uniting, including the mediation of labor disputes, which allowed the government to suppress workers directly. From the analysis above, the government's mediation of labor disputes did affect the results of the labor disputes and put the worker at a disadvantage. Although the labor dispute settlement system was designed to protect the workers, preferences guide the executor (the Kuomintang government) to suppress the workers because the Chiang Kai-Shek government is an authoritarian military government representing the benefits of landlords, compradors, and bourgeois which allowed the government to unscrupulously suppress the workers.

5.3. Endogenous problem

Although the benchmark shows that the involvement of the government or governmentrun entities would make the result worse for workers, this result might simply be due to the fact that the government was only involved in cases in which the workers' position was particularly endangered or vulnerable. More importantly, workers who are more likely to lose may seek government help. To correct the endogeneity of the bench, this paper analyzes the endogenous source of government intervention through the laws of the LDSS and uses CMP to correct the endogeneity that sources from the two-way causality between workers seeking government help and workers failing.

Shanghai Special City Government's participation in mediation or arbitration of labor disputes is mainly based on two laws: Labor Dispute Settlement Law and Shanghai Special City Plan 1: Measures for Handling Labor Disputes. According to the Labor Dispute Settlement Law promulgated by the National Government, government intervention requires the application of labor, the firm, or both, or the cases that last for more than one month and cannot be resolved. The Shanghai Special City Plan 1: Measures for Handling Labor Disputes promulgated by the Shanghai Special City Government refined the requirements of the Labor Dispute Settlement Law in case acceptance requirements. It includes some tips for requests made by workers, but there are no regulations for cases requested by management. First, the case submitted by workers should be accepted and heard by the LDAC (Labor Dispute Arbitration Committee) or the LDMC (Labor Dispute Mediation Committee) only if the workers' representatives are trade unions recognized by the KMT government or if the number of workers is greater than 30. Second, from the perspective of worker treatment, a case submitted by workers is accepted and heard by the LDAC or the LDMC only if the workers' representatives are the industry trade unions whose membership exceeds half of the industry's workers, or

the number of workers that submit the case exceeds half of the industry's workers. These laws show that the government's intervention in labor disputes is affected by the duration and the size of the case. The government will intervene in cases that last longer or involve larger numbers of workers. In the benchmark, we controlled for the duration of the case and the number of workers and firms involved, which helped the model avoid omitted variable bias. Therefore, workers with endogeneity may decide to seek help from the government when they are at a disadvantage, rather than the government intervening when workers are more likely to lose.

This paper finds two instrumental variables to address the two-way causality problem. One is the number of workers seeking government mediation in the past two years for cases with the same issue, industry, and a similar scale which can be called "experience". For two reasons, this paper selects "experience" as an instrumental variable. First, the "experience" of the same situation will influence the workers' decisions, but it will not influence the outcome of the case. Second, according to the Labor Dispute Settlement Law, the workers' representatives in the case will be elected by the workers for each year. The workers will not continue to elect them unless they do their best to protect the interests of the workers. Therefore, the number of workers seeking government mediation in the prior year's cases for the same issue, industry, and a similar scale may be a good instrumental variable. Then, this paper considered using the mean times of other cases this month to seek government intervention. Although the mean within-group can eliminate individual influence, it is not an effective method to solve the two-way causality problem (Gormley & Matsa, 2016; Huang, Jin, & Xu, 2017). Therefore, another instrumental variable is the interaction term composed of the number of workers seeking government help in the past two years of cases of the same cause and industry, and the mean of other cases seeking government mediation in that month.

(Table 6) reports the result of CMP. This paper divides the regression results into four parts. Columns (1) and (2) are part 1, Columns (3) and (4) are part 2, and so on. Columns (1) and (2) show that the significance of government intervention and the coefficient sign has not changed significantly relative to the benchmark after using the instrumental variable "experience" to eliminate endogeneity problems. To ensure model robustness, this paper adds firm nationality as a control variable. Columns (3) and (4) indicate that

	<u> </u>					maning en	<u> </u>	
		The outcome of labor dispute case (CMP)						
		iv = "ex	perience"			iv = "experi	ience″×mear	1
	oprobit	probit	oprobit	probit	oprobit	probit	oprobit	probit
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
government	-1.0551***		-1.0231***		-1.0429***		-1.0096***	÷
	(0.1371)		(0.1659)		(0.1408)		(0.1709)	
exp		0.0117**		0.0133***				
		(0.0049)		(0.0050)				
exp×mean						0.0199**		0.0231***
						(0.0079)		(0.0079)
nation	×	×	\checkmark	\checkmark	×	×	\checkmark	\checkmark
control-v	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
F-statistic	17.7	7	17.	46	21.	31	21	1.07
Cragg-Donald	18.7	'9	18.	45	21.	94	21	1.72
10% critical	16.3	88	16.	38	16.	38	16	5.38
N	4657	4657	4640	4640	4657	4657	4640	4640

Table 6. Impact of government intervention on case outcomes eliminating endogeneity.

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

the significance and coefficient sign of government intervention and "experience" does not change significantly. Therefore, the model using "experience" as an instrumental variable is robust. Then, this paper uses the interaction term of "experience" and the mean of other cases seeking government mediation this month to eliminate the model endogeneity. Columns (5) to (8) indicate that the interaction term is a qualified instrumental variable to eliminate endogeneity. Additionally, the benchmark and the CMP estimation with instrumental variables are robust. Government intervention will damage workers in labor dispute cases. Although (Table 6) shows that the results are reliable, this paper has not tested the effectiveness of instrumental variables. Consequently, this paper refers to the method of Chyi and Mao (2012) to perform a linear weak instrumental variable test. (Table 6) shows that all F-statistics and Cragg-Donald F-statistics are greater than 10, which indicates that the instrumental variables are not weak.

5.4. Institutional difference and robustness test

Although both the LDMC and the LDAC are established by the Nanking government, there are some differences between these two institutions. First, it is related to the legal force of the mediation or arbitration results. The mediation of the LDMC does not have legal force, and both employers and employees have the right to reject the result of mediation. Although the arbitration of the LDAC has legal force, both employers and employees can refuse to execute the arbitration result by paying a fine of 200 silver dollars. The fine is not a huge amount for employers, but it is quite a lot for employees. The average monthly wage of Shanghai workers was less than 30 silver dollars. The low penalty cost makes people mistrust the LDAC and LDMC, as shown in Figure 3. Unlike the other two organizations, government intervention has legal force and can impose administrative penalties on breaching parties.

The second difference among the LDAC, the LDMC, and the government is that these organizations have different compositions. The LDMC was composed of one or three officials of the Shanghai Social Bureau and two representatives of each party.⁶ The LDAC was composed of one official, one party representative, one local court representative, and one representative from each party who had no direct interest in the dispute.⁷ This indicates that the LDAC and LDMC are not totally controlled by the government. Unlike the LDAC & LDMC, the government's team of mediators is composed entirely of officials. To measure the degree of government intervention, we create a government intervention index, which is calculated as follows.

$$GII_i = \frac{o_i}{N} \#(3)$$

$$GII = \sum^{G} II_i \#(4)$$

 GII_i is the index of government intervention of mediator *i* (*i* = 1, 2, 3, ...). *GII* is the sum of government invention indexes of all mediators of the case. Then, we use *GII* as the independent variable to replace the mediator variable in the benchmark. To avoid endogeneity, this paper selects the annual variation in ordinary KMT members⁸ as the

⁶Labor Dispute Settlement Law Chapter 2, Section 1, Article 9, Promulgated in 1928.

⁷Labor Dispute Settlement Law Chapter 2, Section 1, Article 15, Promulgated in 1928.

⁸According to the reports of previous KMT organization meetings, KMT members are divided into ordinary members, military members and overseas members.

instrumental variable. Generally, a dictatorial government combines administrative power with political parties. However, Chiang Kai-Shek emphasized that party members should not directly intervene in the administration, but the party members can supervise the government and give instructions to the government. In a dictatorship, objectively, this kind of thinking often causes parties and governments to compete for power. Therefore, the increase in the number of party members may weaken the administrative capacity of the government, but it will not influence the labor dispute case outcome.

(Table 7) columns (1) and (2) show the regressions using the ordered logit model and ordered probit model. Both show that the more government intervention there is, the more detrimental the case outcome will be to workers. Then, this paper uses CMP estimation with instrumental variables to eliminate the endogeneity of the model. Column (3) shows that the coefficients in columns (1) and (2) are robust. Column (4) indicates that an increase in the number of KMT members will reduce the government's ability to intervene in labor dispute cases. This paper also performs a weak instrument test for the regression. The F-statistic and Cragg-Donald F statistic are greater than 10, which means that the instrumental variable is not weak. The regression results are reliable. This paper has proven that the government could harm the interests of workers in labor disputes, but the background of the era this paper studied is very complicated. Many large events that may change the social process have occurred, including the 12th of April Incident, the Mukden Incident, the Shanghai Incident, etc. These large events may also impact the case outcome. Then, we choose to control for some events that may influence the case outcome and observe whether these events will have a significant impact on the outcome of the case.

5.5. The effect of historical events on the case outcome

This paper separates large events into four categories: wars, political events, economic events, and laws. In each category, we will select one or two important events as exogenous shocks to the case outcome. The wars are the 28th of January Incident and the 13th of August Incident. The political events were the two resignations of Chiang Kai-Shek and the establishment of the Guangzhou government. The economic events are tariff sovereignty recovery and currency reform. The laws are the Law of Emergency

	The outcome of the labor dispute case					
	ologit	oprobit	CMP_oprobit	CMP_probit		
	(1)	(2)	(3)	(4)		
gii	-0.0298***	-0.0204***	-0.0434***			
-	(0.0175)	(0.0102)	(0.0150)			
InKMTom				-1.4612***		
				(0.1293)		
control variable	\checkmark	\checkmark	\checkmark	\checkmark		
F-statistic			38.4	17		
Cragg-Donald F			44.0)1		
InpseudoL	-4531.4443	4539.2334	-6481	.896		
N	4619	4619	469	91		

	Table 7. Th	ne effect of	the governmen	t intervention	index on	case outcomes
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Notes: Robust standard errors in parentheses. The time period for the implementation of the Labor Dispute Settlement Law, negotiation type, strike, the amounts of workers and firms, days in dispute, and Shanghai government annual fiscal are controlled. Other variable coefficients can be obtained from the author. Measures to Maintain Order and the Minimum Wage Law. These events may have different effects on the outcome of cases and the government. The wars weakened the rule of the KMT, and political events could influence the power of Chiang Kai-Shek. The impact of tariff growth and currency reform on the outcome of the case is still inconclusive, but controlling these economic events will help ensure the robustness of the model. The promulgation of laws could have an important impact on the formal system, so it is necessary to consider them. In addition, we add a time dummy representing "the 4.12 incident", which could be the direct factor leading to the establishment of the LDSS. We also summarized the large events that occurred from 1918 to 1938, which are in Appendix A.

(Table 8) column (1) shows that "the 4.12 incident" significantly damaged the interests of workers. Column (2) indicates that the weakening of Chiang Kai-Shek's personal power may have a significantly positive effect on the outcome of labor dispute cases. The split of the KMT could not be good news to workers. Since all the left-wing members of the KMT went to Guangzhou to establish an anti-Chiang Kai-Shek government, the proposal of officials supporting Chiang Kai-Shek's leadership in the Shanghai government will rise significantly. Column (3) shows that tariff changes and currency reform have no significant effect on workers' status in labor disputes. As shown in column (4), the Law of Emergency Measures to Maintain Order has a significantly positive impact on the outcome of cases. During the implementation of the law, most of the labor disputes

	The outcome of the labor dispute case					
	(1)	(2)	(3)	(4)	(5)	
	war	politic	economy	act	full	
gii	-0.0404**	-0.0394**	-0.0388**	-0.0393**	-0.0504***	
	(0.1654)	(0.0180)	(0.0760)	(0.0760)	(0.0763)	
war	0.0080				0.0965	
	(0.1654)				(0.1763)	
412	-1.9871***				-2.0556***	
	(0.5323)				(0.5416)	
resignation		0.6312**			0.3751	
		(0.2994)			(0.3118)	
gz_gov		-0.1544**			-0.2577***	
		(0.0773)			(0.0871)	
tariff_sov			-0.1033		-0.1704*	
			(0.0944)		(0.0978)	
reform			-0.0071		-0.3155	
			(0.1128)		(0.2034)	
emergency				0.4091***	0.7806***	
				(0.1370)	(0.2385)	
miniwage				-0.8881***	-0.9141***	
				(0.1861)	(0.1871)	
Control-variables	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
Pseudo-R [∠]	0.0422	0.0412	0.0406	0.0438	0.0472	
N	4125	4125	4125	4125	4125	

Table 8. The effect of historical events on the case outcome.

Notes: Robust standard errors in parentheses. All these regressions' dependent variables are case outcomes. *Ingii* is the natural log of the government intervention index. *War* is a time dummy representing the 28th January Incident and the Songhu Battle. *412* is a time dummy indicating the time that the massacre occurred. *Resignation* is a time dummy representing two resignations of Chiang Kai-shek. *Gz_gov* is a time dummy representing the establishment of the Guanzhou National Government. *Tariff_sov* is a time dummy representing the campaign to recover tariff sovereignty. *Reform* is a time dummy representing the currency reform. *Emergency* is a time dummy representing the promulgation and implementation of the Minimum Wage Law.

were related to Japanese enterprises before the war. Therefore, workers are supported by all walks of life. However, the Minimum Wage Law will make the case outcome significantly worse. Unfortunately, due to the scarcity of worker wage data, it is difficult to find reliable evidence indicating the relationship between the Minimum Wage Law and labor dispute case outcomes, simply from the content of the law. However, all these regressions prove that our main conclusion is relatively robust because most of these coefficients of *GII* are significantly negative and similar to column (3) in (Table 7), which means that the more the government intervenes in the labor dispute case, the worse the case outcome will be for workers.

6. Conclusion

Historically, there are many systems where the design goals and actual effects are inconsistent, but many of them are difficult to scientifically verify due to age and lack of information. This paper selects the Shanghai labor dispute settlement system and the cases it handles and uses an empirical method to analyze the impact of implementation on system performance. Then, we get the following three main conclusions. First, government intervention will directly influence the case outcome, and government intervention may be affected by the government's position and tendency. Second, there are differences in the intensity of government intervention in the LDSS. The more officials or staff with official backgrounds involved in mediation or arbitration, the more government intervention. In this case, more government intervention means that workers are more likely to lose in labor disputes. Third, government intervention is affected by changes in the government's power, and events that impact government power could also influence the case outcome.

This paper shows that a labor dispute settlement system designed to protect workers' interests did not realize its intended effect because of poor system implementation. Therefore, it is necessary to pay more attention to the system implementation to ensure that it can provide the functions and services it should have when establishing a system.

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Appendix A. List of Big Events in China from 1918 to 1940

Date	Events
A th May 1010	The May 4 th Mayamant
4 , Widy 1919	Founding of the Chinese Communist Darty
1 , July 1921	China's first criminal procedure law was promulaated and implemented
1, Jan. 1922 A th Jap. 1022	All circles in Shanghai demand the conference and request to repeal the Twenty One Demands
4 , Jdll. 1922	(forced on China by Japan in 1915).
6", Feb. 1922	Nine-State Treaty.
1 st , Mar 1922	"Shatin Massacre".
22th, Apr. 1922	Sun Yat-sen allowed Communist Party members and the Socialist Youth League to join the KMT.
1 st , May 1922	The First National Labor Conference.
3 rd , June 1922	Macau Strike.
6 th , Sep. 1922	Guangdong-Han Railway Strike.
4 th , Oct. 1922	Shanhaiguan Iron Works Strike.
23 rd , Oct. 1922	Kailuan Coal Mine Strike.
1 st , Feb. 1923	Jinghan Railway Workers Strike.
7 th , Sep. 1923	Chiang Kai-shek led a delegation to visit the Soviet Union.
12 th , Nov.	KMT reorganization
29 th , Nov.	The right-wing of the KMT impeaches the Communist Party.
1923	
Throughout	Hundreds of thousands died in drought in 12 provinces of China.
20 th Jan 1924	The first KMT-CCP cooperation
8 th Mar 1924	For the first time to commemorate the March 8 th International Working Women's Day
1 st May 1924	Sun Yat-sen called on workers to unite
31 st May 1924	The Sing-Soviet Russia Agreement to the Outline on Solving the Outstanding Issues
15 th July 1924	Guangzhou Shamian Workers Strike
4 th Sen 1924	Sun Yat-sen formed the Northern Expeditionary Army
15 th Sen 1924	The Second Zhifeng War
18 th Oct 1924	Beijing Coun
11 th , Jan. 1925	The Fourth National Congress of the Chinese Communist Party was held in Shanghai.
2 nd , Feb. 1925	Workers' Strike in Shanghai Japanese Factory.
8 th , Feb. 1925	liaoji Railway Strike
2 nd , Mar. 1925	Sun Yat-sen's Death.
Apr. 1925	CCP leads Workers' Strike in Oingdao
1 st . May 1925	KMT and CCP held the second National Labor Conference in Guangzhou and established the All-China
151 1 1005	Federation of Trade Unions.
1 , July 1925	The Chinese National Government was established in Guangzhou
6 th , July 1925	Canton-Hongkong Strike
21 st , July 1925	lianjin Strike.
20 , Aug. 1925	Liao Zhongkai was assassinated by the right-wing of KMIT.
16 th , Sep. 1926	Soldiers and police shot Anyuan miners commemorating the May 30 th Massacre.
15 th , Oct. 1925	The Zhefeng War.
18 th , Mar.	The March 18 th Massacre.
1920	The Event of the Warchin "Thengchan"
20 , Mar. 1926	The Event of the warship Zhongshan
9 th , July 1926	The Northern Expedition.
22 nd , Mar.	The Northern Expeditionary Forces occupied Shanghai.
1927	
12 th , Apr. 1927	The April 12" Massacre.
13"', Aug.	Chiang Kai-shek resigned as commander-in-chief of the National Revolutionary Army for the April 12 th
1927	Massacre.
4", Jan. 1928	Chiang Kai-shek reinstated.
3 ^{.4} , May 1928	Jinan Massacre.
21°, July 1928	The National Anti-Japanese Congress was held in Shanghai.

(Continued)

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(Continued).

Date	Events
8 th , Oct. 1928	Chiang Kai-shek was appointed Chairman of the National Government of the Republic of China in Nanjing.
15 th , Mar. 1929	Chiang Kai-shek and Wang Jingwei fight for power. Chiang Kai-shek won.
23 rd , May 1929	The General Principles of the Chinese Civil Law.
1 st , Aug. 1929	The Anti-Imperialist Alliance was established in Shanghai.
1st, Aug. 1929	Examination Law.
2 nd , Mar. 1930	China Left-Wing Writers Alliance was established in Shanghai.
May 1930	The Central Plains War.
6 th , Aug. 1930	The CPC Central Committee established the General Action Committee in Shanghai.
4 th , Nov. 1930	The end of Central Plains War.
2/ ^{cn} , May 1931	KMT anti-Chiang Kai-shek faction set up anti-Chiang Kai-shek government in Guangzhou.
8, July 1931	140,000 people were drowning by extraordinary flood in the Yangtsze River.
16, Sep. 1951	The Mukuen Incluent.
10 , Dec. 1031	Childing Rai-shek resigned as chairman of the National Government.
18 th Ian 1932	Shanghai Incident
28 th Jan 1932	Chiang Kai-shek reinstated
31 st , Jan. 1932	More than 40.000 workers of 17 Japanese spinning mills strike in Shanghai's Huxi District.
5 th , May 1932	Song Shanghai Armistice Agreement.
26 th , Mar.	Chiang Kai-shek and Wang Jingwei discussed and decided to fight CPC together.
1933	
May 1933	Tanggu Armistice Agreement.
June 1935	Qintu Agreement.
July 1935	Hemei Agreement.
1 st , Aug. 1935	The CPC issued "A Letter to the Countrymen for the sake of Anti-Japanese and National Salvation".
2 nd , Dec. 1935	Chiang Kai-shek serves as president of the Executive Yuan.
2 nd , Feb. 1936	The law of Emergency Measures for Maintaining Public Order
12", Dec.	The Xr'an Incident.
1936 7 th Iulii 1027	The July 7 Insident of 1027
7, July 1937	Pattle of Changhai
10 , Aug. 1037	Dattie of Shanghai.
13 th Nov	The fall of Shanghai
1937	
5 th , Dec. 1937	Naniing Massacre.
June 1938	Japan forces Shanghai Customs to announce new tariffs.

Notes: The information sources from the website: www.todayonhistory.com and revised by writers.

Appendix B. The events of the Labor Disputes Settlement System

Date	Act	Law		
21 st , Oct.	Trade Union	Trade Union Law		
1929	Organization Act			
6 th ,	Trade Union	Trade Union Law's Enforcement Law		
June 1930	Organization Act			
21 ⁻² , Mar.	Irade Union	Shanghai Special City Trade Union Registration Interim Rules		
1929 21 st Aug	Trade Union	Shanghai Trade Union Organization Procedure		
1930	Organization Act	Shanghar Hade onion organization Hocedure		
14 th .	Trade Union	Shanghai Trade Union Registration Rules		
May 1930	Organization Act			
30 th , Dec.	Factory Management	Factory Law		
1929	Act			
1 st , Aug.	Factory Management	Factory Law Enforcement Regulations		
1931	Act			
8", Dec.	Factory Management	Shanghai Provisional Rules for the Treatment of Employees		
1929	Act			
8 , Dec.	Factory Management	Shanghai Provisional Rules for Staff Services (1933, Discontinued)		
1929 e th Dec	ACL Eactory Management	Shanghai Brovisional Bulos for Approntises (1022 Discontinued)		
8, Dec. 1929	Act	Shanghai Provisional Rules for Applentices (1955, Discontinued)		
29 th . Dec.	Factory Management	General Rules of Shanghai Workers Treatment		
1931	Act			
29 th , Dec.	Factory Management	General Rules of Shanghai Workers Services		
1931	Act	-		
29 th , Dec.	Factory Management	General Rules of Shanghai Industrial and Commerical Store Clerk Service		
1931	Act Factory Management	Constal Dulas for the treatment of Shanghai Industrial and Compreial Store		
29 , Dec. 1031		Clerk Treatment		
29 th Dec	Factory Management	The Law of Factory Inspection		
1931	Act	The Law of Factory hispection		
2 nd , Sep.	Factory Management	Interim Regulations of Shanghai Social Bureau Inspection on Factory		
1930	Act	, , , , , , , , , , , , , , , , , , ,		
9 th ,	Labor Dispute Act	Labor Dispute Settlement Law		
June 1928				
19", Mar.	Labor Dispute Act	Amendment to the Labor Dispute Settlement Law in 1930		
1930 27 th Son	Labor Disputa Act	Amondment to the Labor Dispute Settlement Law in 1022		
27, sep. 1932	Labor Dispute Act	Amendment to the Labor Dispute Settlement Law III 1952		
28 th .	Labor Dispute Act	Implementation Rules of Shanghai Special City Labor Dispute Settlement Law		
June 1928		······································		
23 rd ,	Labor Dispute Act	Shanghai Special City's Measures for Handing Labor Disputes		
May 1929				
14 th , Nov.	Labor Dispute Act	Standards for Handling Important Matters of Labor Disputes in Shanghai		
1929				
22 nd , Apr.	Labor Dispute Act	Regulations of Shanghai Social Bureau on Handling Labor Disputes		
1930 28 th Oct	Othors	Collective Agreement Law		
20 , UCI. 1930	others	Conective Agreement Law		
23 rd , Dec.	Others	Minimum Wage Law		
1936				
2 nd , Feb.	Others	The Law of Emergency Measures to maintain order.		
1936				

Notes: the law's records are revised by writers.

year	Ordinary	Military	Overseas	Total
1926	248,891			343,283
1927.3	435,122			522,310
1928	252,228	280,000	80,000	333,579
1929	270,467	433,942	83,516	632,701
1930	277,055	433,942	83,516	794,513
1931	276,737	395,945	-	805,208
1932	296,544	433,314	86,045	815,903
1933	312,222	446,005	88,773	847,610
1934	327,197	461,267	90,459	878,923
1935	341,070	477,110	91,871	910,051
1936	358,089	490,764	92,540	941,393
1937	526,977	1,013,019	110,428	958,444

Appendix C. Statistics of KMT Members from 1926 to 1937

Notes: the data sources from the Historical Data on the Development of Party Affairs of the Chinese Kuomingtang-Organization Work, published by Party History Committee of the Central Committee of the Chinese Kuomintang.