Economic Analysis on the Administrative Supervision Power of Enterprise Technology Standards Implementation

Lan-kai LIU, Yi-hua WANG and Jian LI*
Kunming University of Science and Technology, Kunming, China
*Corresponding author

Keywords: Implementation of technical standards, Administrative supervision, Cost-benefit analysis.

Abstract. In recent years, the quality incidents caused by violations of technical standards by enterprises have been frequent, and the Changchun Changsheng vaccine incident has caused widespread public concern. To ensure the effective implementation of corporate technical standards, the key is to enhance the administrative supervision of local government and administrative supervision departments. This paper uses the method of cost-benefit analysis to analyze the mechanism of the administrative supervision department's implementation of the regulatory power of technical standards, and proposes countermeasures from the two perspectives of internal power and external power.

Introduction

In recent years, China's quality incidents have occurred frequently, and the Changchun Changsheng Problem Vaccine Incident (hereinafter referred to as the “vaccine event”) has caused widespread public concern and a serious crisis of trust. According to the current disclosure, the vaccine incident is mainly caused by the following two reasons: First, the quality management system of the enterprise fails, the technical standards cannot be effectively implemented; second, the administrative supervision of the technical standards is lagging behind, and the relevant departments have insufficient supervision power. In the face of economic interests, the internal supervision of the implementation of technical standards by enterprises and the external supervision of the government and society are ineffective, directly affecting the quality and safety of products and causing irreparable damage to society. The willingness of enterprises to implement technical standards and the motivation of administrative supervision largely depends on the consideration of their cost-benefit. Therefore, from the perspective of administrative supervision, this paper analyzes the cost-return changes of enterprise implementation and violation of technical standards and the mechanism by which the administrative supervision department implements the supervision power of technical standards, determines the reasons for the lack of supervision power, and proposes relevant strategic suggestions.

Technical Standard Implementation

Technical standards refer to the standards formulated for technical matters that need to be harmonized, and are technical basis for technical work in design, process, inspection, etc. And collective compliance in commodity circulation, including basic standards, product standards, and method standards. As for the implementation of standards, there is currently no authoritative opinion in the academic world. It is defined here as applying the standard to social life and making it practically effective [1].

Analysis of Administrative Supervision

The following is a cost-benefit analysis method to study the mechanism analysis of the implementation of administrative supervision power by enterprise technical standards. The basic assumptions are as follows:
(1) The dynamic coefficient of the implementation of technical supervision by relevant regulatory authorities for the implementation of technical standards is \(a(a \leq 1)\);

(2) The long-term social and economic benefits generated by the implementation of technical standards when administrative supervision is fully implemented is \(Y\);

(3) The short-term social and economic benefits that can be obtained by the implementation of technical standards in the incomplete implementation of administrative supervision are \(F\);

(4) The cost required for the implementation of administrative supervision of technical standards is \(C\);

(5) The probability that the social supervision group will successfully supervise the implementation of technical standards by the enterprise is \(p(0 \leq p \leq 1)\);

(6) The penalty coefficient for local governments after successful social supervision is \(\lambda(\lambda > 0)\)

The income function of the administrative supervision department responsible for the implementation of technical standards, the additional income assassination of non-compliance with the supervision function, and the cost function are functions of the supervisory power coefficient (refer with: Eq. 1):

\[
Y = y(a), F = f(a), C = c(a) \quad (a \leq 1)
\]

Because the relevant administrative supervision department implements the technical standards to implement the administrative supervision function, the dynamic coefficient is uncertain. This paper assumes that the long-term social and economic benefits actually generated by the implementation of the supervision function are linearly fitted to \(aY\), and the short-term social economy generated by the implementation of administrative supervision is not fully implemented. The linear fit of benefit is \((1-a)F\), and the linear fit of local government to the implementation of administrative supervision is \(aC\) [2].

In addition to the benefits and costs generated by the above-mentioned administrative supervision, the success of social supervision will also have an impact on local social and economic benefits. Assuming that social supervision is successful, the negative impact on social and economic benefits is based on the short-term social and economic benefits. In order to explain the mechanism of administrative supervision power more intuitively to the enterprise technical standards, the social and economic losses that may result from the incomplete implementation of administrative supervision by the administrative supervision department are quantified as \(\lambda F\). In addition, assuming that there is a violation of the implementation of technical standards in the case of incomplete implementation of administrative supervision, the success rate of social supervision is \(P\), which is influenced by the supervision intensity of the social supervision group, and the more comprehensive the social supervision mechanism, the stronger the supervision intensity. Therefore, the socio-economic losses caused by incomplete administrative supervision under the current social supervision intensity are quantified as \(\lambda pF\).

According to the implementation of supervision by the administrative supervision department on the technical standards of enterprises, the actual income function of the local government is expressed as follows (refer with: Table. 1):

<table>
<thead>
<tr>
<th>Administrative supervision</th>
<th>Fully implement administrative supervision functions ((a = 1))</th>
<th>Incomplete implementation of administrative supervision functions ((a &lt; 1))</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actual income function</strong></td>
<td><strong>(Y - C)</strong></td>
<td><strong>(aY + (1-a)F - aC - \lambda pF)</strong></td>
</tr>
</tbody>
</table>

Table 1. Actual income statement.
Therefore, the actual income function of the local administrative supervision department to fully implement and not fully implement the supervision of the implementation of enterprise technical standards is expressed as (refer with: Eq. 2):

\[
\begin{align*}
E_1 &= Y - C \\ E_2 &= aY + (1 - a)F - aC - \lambda pF
\end{align*}
\]

When \( E_1 = E_2 \), the local administrative supervision department has the same social and economic benefits from the two administrative supervision actions implemented by the enterprise technical standards, and there is no significant difference in whether the local administrative supervision departments fully implement the administrative supervision. Under the above circumstances, the administrative supervisory power coefficient of the local administrative supervision department reaches the critical value \( \hat{a} \) (refer with: Eq. 3).

\[
\hat{a} = \frac{\lambda pF}{Y - F - C} + 1
\]

It can be seen from (3) that the administrative supervision power of the local administrative supervision department is mainly affected by the social supervision punishment coefficient, the social supervision intensity, and the social and economic net income \((Y - F - C)\) obtained by implementing the technical supervision.

Social supervision. The stronger the supervision of the social group's implementation of the enterprise's technical standards, the higher the success rate \((P)\) of the company's violation of technical standards. In addition, the greater the punishment for companies that violate technical standards after the success of social supervision, further increases the opportunity cost of local government's implementation of administrative supervision of technical standards \((\lambda F)\). Therefore, the strengthening of social supervision and the penalty coefficient will directly expand the negative impact of social and economic benefits \((\lambda pF)\), and thus enhance the incentives for local administrative supervision departments to implement administrative supervision.

In terms of social and economic net income. Local administrative supervision departments fully implement technical standards, implement administrative supervision, generate long-term social and economic benefits \((Y)\), short-term social and economic benefits of incomplete supervision \((F)\), and local government's cost of implementing administrative supervision of technical standards \((C)\). Directly affect the social and economic net income \((Y - F - C)\). When the long-term social and economic benefits generated by the implementation of technical standards rise, the regulatory power of local administrative supervision departments will also rise. However, the rise in short-term social and economic benefits and administrative supervision costs will drive down the regulatory power. Therefore, the above three factors have affected the regulatory power of local administrative supervision departments.

**Analysis of the Causes of Insufficient Administrative Supervision**

**Internal Cause Analysis**

**GDP-Centered Performance Appraisal System.** Local governments have both the dual attributes of agents and self-interests, and their interest orientation is the maximization of local governments themselves and the public interest \([3]\). This interest includes both political interests mainly involving the promotion and assessment of officials, as well as economic interests mainly involving local fiscal revenue and income base and public economic income. Zhou Li'an (2007), Liu Ruiming (2015) pointed out that the asymmetric weights of economic and political benefits and costs existed in the current performance evaluation indicators, which caused incentive bias for local government officials, causing local officials to excessively pursue economic indicators \([4,5]\). However, due to the irregular communication mechanism of officials and the pressure of
performance appraisal, local officials pay more attention to the level of economic development during their term of office and take all measures to promote rapid GDP growth in the short term [6]. In addition, the implementation of administrative supervision requires sufficient capital investment, resulting in the lack of administrative supervision power of local governments.

**Imperfect Current Reward and Punishment Mechanism.** The local administrative supervision department with administrative supervision functions is composed of administrative officials, who are economic agents who seek to maximize profits in the political market. On the one hand, in the process of administrative supervision of the implementation of enterprise technical standards, in addition to serious quality and safety accidents, it is difficult for local governments to effectively supervise and punish the inaction and illegal operation of local administrative supervision departments. On the one hand, in the process of administrative supervision, in addition to serious quality and safety accidents, it is difficult to punish the inaction and illegal operation of the regulatory authorities. On the other hand, the distribution of fines imposed by the regulatory authorities in the distribution of local governments is too low, and the cost of supervision is much higher than the fines obtained, which seriously affects the enthusiasm of law enforcement at the grassroots level.

**External Cause Analysis**

**Weak Social Supervision and Insufficient Punishment.** Social supervision is an important way to supervise the technical standards of enterprises, and it is also a useful supplement to administrative supervision. Effective social supervision of enterprises through social groups, news media and consumers can promote local government and administrative supervision departments to actively perform administrative supervision functions. However, there are currently two problems: On the one hand, the above-mentioned social supervision subjects are flawed, and the supervision of consumer associations and industry associations lacks independence, authority and credibility, and lacks due policy support and enforcement [6], The supervision of the news media is easy to lose objectivity and authenticity in the report, and it has strong timeliness and it is difficult to achieve long-term supervision. Consumer supervision and accountability require a lot of time and money, and lack of collective responsibility to defend rights. On the other hand, the punishment function in our legal system is currently mainly borne by the administrative fine system [7]. However, at present, there are insufficient strengths for administrative fines and multiple compensations, and it is impossible to provide sufficient punishment for enterprises with illegal technical standards.

**Technology, funding and local government intervention.** Because the implementation of enterprise technology standards has the characteristics of concealment, it is difficult for local administrative supervision departments to carry out continuous supervision of enterprises. However, the purchase of sampled products and testing requires the regulatory authorities to bear the corresponding costs. Therefore, the lack of sufficient financial funds and the implementation of administrative supervision can only be empty talk. In addition, influenced by “local protectionism”, local governments intervene in the enforcement of local administrative supervision departments due to the consideration of GDP in the region, and also reduce the regulatory power [8-9].

**Summary**

**Improve the Performance Evaluation System and Reward and Punishment Mechanism**

Improve the performance appraisal system of local government officials. The weight of the GDP indicator in the assessment system is moderately lowered, and the quality of regional economic development is incorporated into the performance appraisal system, and an assessment system including the speed and quality of economic development is established to solve the problem of excessive attention to short-term economic indicators in the original performance appraisal. We should focus on the indicators of effectiveness, sustainability and stability of economic development to make up for the pursuit of short-term economic goals in the performance appraisal, Implementation of technical standards The short-term social and economic benefits brought about
by administrative supervision have tempted local governments, enhanced the internal motivation of local governments to implement administrative supervision functions.

Improve the reward and punishment mechanism of local administrative supervision departments. Improve the rewards and punishments of local administrative supervision departments, and form a good working atmosphere in the local administrative supervision departments to actively implement regulatory duties. In terms of punishment, strengthen the supervision and assessment of the performance of the local administrative supervision departments, and rectify the acts that are not acting as chaos, and impose corresponding administrative sanctions. In terms of rewards, in addition to the corresponding administrative rewards for the administrative supervision departments to actively perform their duties, the local government appropriately tilts the distribution of the fines obtained to the local administrative supervision departments to achieve the purpose of incentives for local administrative supervision departments and basic law enforcement personnel. Enhance the internal motivation of local administrative supervision departments to perform administrative supervision functions.

**Improve the Social Supervision System and Increase Punishment**

Improve the social supervision system. Promote the independence of consumer associations and industry associations, and strengthen the credibility and execution of social organization supervision. Establish a supervision and rights platform for joint consumer associations, industry associations, news media and consumers to solve the problems of independence, effectiveness, short-term and decentralization of the current social supervision bodies to enhance administrative supervision. External power.

Increase the penalties for violating technical standards. Through punitive damages, consumers who are harmed by violations of technical standards can be compensated to increase the enthusiasm of consumers to participate in supervision. In addition, increasing the punishment for enterprises will indirectly affect the speed of local social and economic development, and thus affect the performance evaluation of local governments and administrative supervision departments.

**Acknowledgement**

Thanks to the teachers and classmates who helped in the research.

**References**


