

Research on Reputation Evaluation of Accounting Firms from the Perspective of Internet Public Opinion

—Multi-Case Analysis Based on Hot Events

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How to cite this paper: Liu, Y. T. (2022). Research on Reputation Evaluation of Accounting Firms from the Perspective of Internet Public Opinion. *Advances in Applied Sociology*, 12, 402-414. <https://doi.org/10.4236/aasoci.2022.128032>

Received: July 4, 2022

Accepted: August 28, 2022

Published: August 31, 2022

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Abstract

There are few studies on using external informal governance to improve the reputation of accounting firms, and no studies have been conducted to evaluate the reputation of accounting firms from the perspective of online public opinion. In this paper, the method of constructing model is used to analyze the influence of public opinion on the reputation of accounting firms. Therefore, from the perspective of network public opinion, based on the PSR model, this paper constructs indicators such as the pressure of network public opinion on accounting firms, the state after pressure, and the reaction of the market and CSRC to events. The study finds that negative online public opinion will change an accounting firm's reputation indicators. Still, the timely response and high transparency of accounting firms and CSRC will effectively weaken the negative online public opinion.

Keywords

Online Public Opinion, Public Opinion Monitoring, Accounting Firm Reputation, Evaluation Index System

1. Introduction

In the 1990s, when the Internet was not yet widespread, the traditional media, such as newspapers, TV and magazines, reported the incidents of Lantian, Yin Guanxia and Zheng Baiwen, and various negative terms such as “loss of independence”, “subordinate to listed companies” and “favouritism” were imposed on CPAs. The reputation of CPA firms has been dealt a severe blow by the im-

position of various negative terms such as “loss of independence”, “subordination of listed companies”, and “favouritism” on CPAs. Problems such as cooperation between CPA firms and auditees continue to emerge today. The difference is that the Internet in the information age has become the infrastructure of modern society through its invisibility, terminal mobility, and time fragmentation, dramatically enhancing public participation in practical matters. And made the mobile public opinion field more active and prone to large-scale online public opinion formation. Using online public opinion to supervise accounting firms and build a reputation evaluation system for accounting firms from the perspective of online public opinion will become a vital issue of concern for many parties. This paper first discusses the definition of public opinion and its influence and then investigates the process of public opinion in accounting firms. After that, several cases are used to analyze public opinion’s impact on accounting firms and how it affects them. Finally, the conclusion is drawn.

This paper adopts the method of model construction to analyze all the factors that will affect the reputation of accounting firms and how much these factors affect the reputation. Then cite examples to prove the above conclusion. Combined with some other factors, such as the response of the market and the CSRC, the formula of public opinion influence on the reputation of accounting firms is comprehensively obtained. Finally, the conclusion is drawn that public opinion does have a significant impact on the reputation of accounting firms, and the attitude and treatment of public opinion of accounting firms and some other government agencies can also affect the reputation to a certain extent.

This paper reviews the concept of online public opinion and the reputation evaluation system of accounting firms, selects critical indicators based on the PSR model and determines the weight of indicators based on four hot events using the entropy weighting method to provide reference suggestions for the reputation evaluation of accounting firms from the perspective of online public opinion.

2. Related Researches

2.1. Definition of the Concept of Online Public Opinion

Many scholars believe that online public opinion is a social opinion on the Internet, and its medium is new media. Zhou & Wang (2005) define online public opinion as the situation of public opinion on the Internet with tendentious remarks on a focused issue. According to Gao et al. (2011), the object of online public opinion in the traditional sense is public opinion events, which are divided into four categories: a single specific event, a series of events about a particular issue, a group of events about a specific category, and a mixed event of public opinion that consists of the second category of public opinion events and the third category of public opinion events superimposed on each other. The subjects of online public opinion are traditionally defined as the general public,

opinion leaders, government departments, enterprises, and media organizations (Chen et al., 2015).

2.2. Current Status of Research on Reputation Evaluation System of Accounting Firms

DeAngelo (1981) argues that the size of an accounting firm can be used as a proxy for reputation, and Beatty (1989) argues that the reputation of an accounting firm can be measured by the number of clients, IPO clients, and audit fees. Beatty (1989) suggests that the reputation of accounting firms can be measured by the total number of clients, the number of IPO clients, and the audit fees of accounting firms (Beatty, 1989). Later, Hu (2003) suggested that the reputation of accounting firms in China should be measured by the market share of accounting firms and the sum of market share over several years. Li et al. (2011) established a comprehensive system of evaluation indexes for accounting firm reputation in terms of their competitiveness, overall impression, audit quality and professional ethics, social contribution, comprehensive internal strength, financial performance and size, etc. This evaluation index system made up for the shortcomings of the research results on accounting firm reputation measurement indexes at that time.

It is not difficult to find that there is no research linking online public opinion with the reputation of accounting firms, ignoring the public opinion reaction caused by the media and the pressure that online public opinion on accounting firms. Therefore, based on the current research results, this paper uses the case study method to construct an evaluation index system for the reputation of accounting firms from the perspective of online public opinion and provides suggestions for its development (Chung & Aring, 2018).

This paper uses the case study method to construct an evaluation index system for the reputation of accounting firms from the perspective of online public opinion and to provide suggestions for their development.

3. The Mechanism of Reputation Evaluation of Accounting Firms from the Perspective of Internet Public Opinion

As shown in **Figure 1**, according to Fombrun and Shanley's (1990) reputation formation model, when an audited entity is caught in an adverse event such as financial fraud, the social amplification of risk causes negative signals to be received by the media, stakeholders, and government regulators.

According to Fombrun and Shanley's (1990) reputation formation model, when an audited firm is caught in a negative hotspot such as financial fraud, online media coverage and opinion leaders continue to direct negative signals to the media stakeholders and government regulators. When accounting firms perceive the pressure of online public opinion, the lure of resources, opportunities, and support from a high reputation will force them to take appropriate measures to recover the loss of reputation after the incident, which is the state of

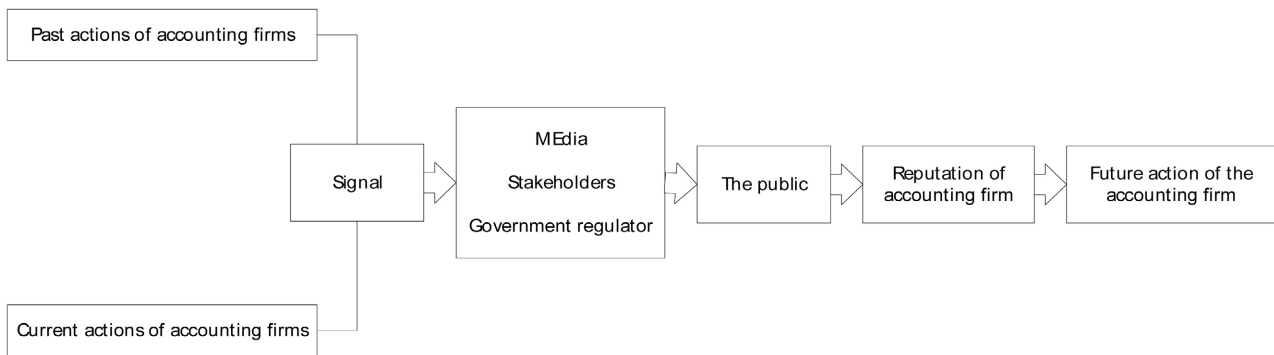


Figure 1. Schematic diagram of reputation formation model 1.

accounting firms under the pressure of online public opinion. The widespread negative online publicity leads the public to pay attention to other firms with which the accounting firm has contracted and to question the strength of monitoring and punishment by the relevant regulatory authorities. In this case, both the capital market and the regulatory authorities will act accordingly to protect their reputations and convey to the general public that the accounting firm has been affected or punished, which is the response of the market and the regulatory authorities.

Online public opinion puts pressure on accounting firms and related stakeholders. The actions of accounting firms after receiving pressure the dynamic balance of the influence of online public opinion on the reputation of accounting firms are formed by the interaction of three aspects, namely, the firm's reputation and the response of stakeholders under pressure.

4. Construction of the Indicator System

The reputation mechanism of accounting firms is an effective way to ensure audit quality, and improving the reputation evaluation system of accounting firms from the perspective of online public opinion is a crucial step to ensuring the operation of the reputation mechanism. Based on the principles of scientific rationality, hierarchy, and systematization, this paper selects six layers based on the PSR model: source of communication, speed and scope of communication, timeliness of accounting firm's response, transparency of accounting firm's response, direct responsiveness, and indirect responsiveness (Karamitsos, Albarhami, & Apostolopoulos, 2019). The indicators under two strata, namely, source of communication, speed and scope of communication, are selected from the "Knowing and Seeing" data platform (See Figure 2). In addition, the tendency of each indicator is different, and the positive indicator indicates that the larger the value is, the better the influence on the evaluation target. In contrast, the negative indicator has a smaller value, and the better the influence on the evaluation target (Cao, 2019).

The positive indicators show that the larger the value is, the better the influence on the evaluation target. The negative indicators show that the smaller the value, the better the influence on the evaluation target (See Table 1).

Table 1. Indicator system structure table.

Primary indicator	Secondary indicators	Indicator Convergence	Explanation of indicators
Dissemination source	Key Channel Engagement	+ (-)	Participation of 29 central-level media, 755 key opinion leaders with millions of active fans, 15,334 key opinion leaders with active millions of followers
	Participation of Central-level media	+ (-)	The degree to which the online public further participates in the discussion of events through horizontal participation in the central-level media, financial media, and technology media sectors
	Participation of Financial media	+ (-)	
	Participation of Technology Media	+ (-)	
Dissemination speed and range	Average propagation speed per hour	+ (-)	Average number of spreads per hour during the duration of the hotspot event
	Peak propagation speed	+ (-)	The number of fastest-spreading hotspot events in one hour
	Event Impact Index	+ (-)	The comprehensive evaluation value of the spread effect of the event on the three platforms of online media, Weibo and WeChat
	Public opinion ranking	+ (-)	The event's ranking among all events in the entire public opinion field under that hour
Transmission speed and range	Number of negative lead articles	-	Number of reports with positive leading attitude terms
	Number of positive introductory reports	+	Number of reports with negative leading attitude terms
	Number of non-leading stories	+ (-)	Number of reports that do not carry leading attitudinal terms
timeliness	Accounting firm response speed	+	The response of accounting firms during the duration of online public opinion is numerically defined by 1 - 5 numbers, with "1" indicating very slow, very poor, very little, very low; "2" indicating slow, poor, little, low; "3" means average, "4" means faster, better, more, higher; "5" means very fast, very good, a lot, very high
	Attitude of Accounting firm	+	
transparency	Number of accounting firm responses	+	
Direct Responsiveness	Accounting firm information disclosure	+	The amount of change in the values of the indicators of the accounting firm in the year before the incident and the year after the incident
	Value of change in annual revenue of accounting firms	+	
	Value of the change in the level of fees for audit services of accounting firms	+	
	Value of change in the number of CPAs in accounting firms	+	
	Change in the number of IPO clients of accounting firms	+	
	Value of change in market share of accounting firms	+	

Continued

Indirect Responsiveness	Timeliness	Speed of CSRC Response	+	The CSRC's response during the period of sustained online public opinion is defined numerically by 1 - 5 numbers, with "1" indicating very slow, very poor, little, and low; "2" indicating slow, poor, little, and low; "3" means average, "4" means faster, better, more, higher; "5" means very fast, very good, a lot, very high
		Attitude of CSRC Response	+	
	Transparency	Number of CSRC responses	+	
		CSRC Information Disclosure Degree	+	

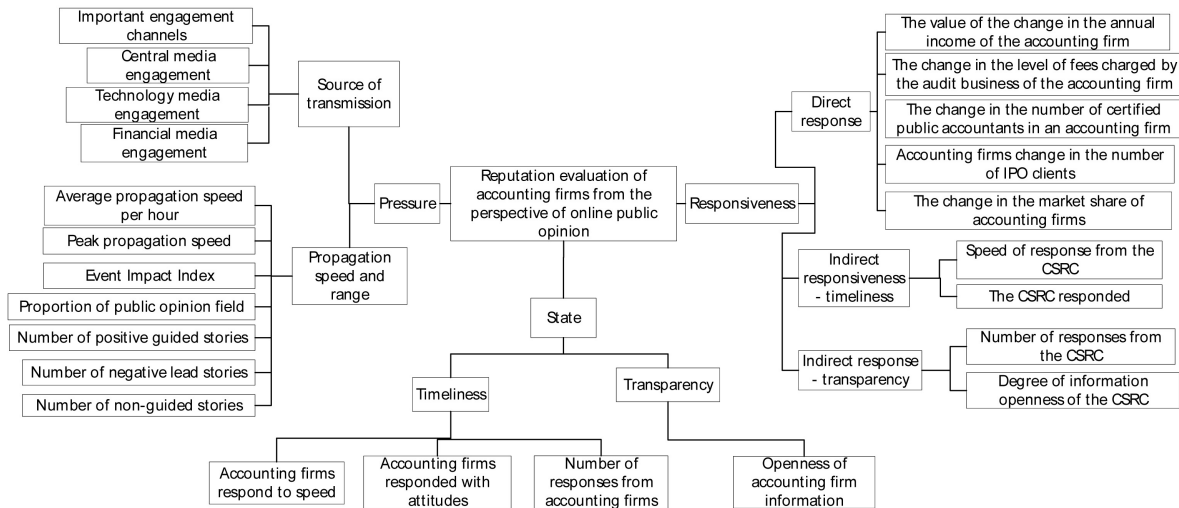


Figure 2. Reputation evaluation system of accounting firms from the perspective of network public opinion.

5. Case Analysis

According to the “Zhiwei Event” data platform, the incidents of Kangmei Pharmaceutical, Kangdexin, Abbott and Erkang Pharmaceuticals are prevalent and have a certain degree of representativeness. So the accounting firms in the four hot events are taken as the research objects to build an evaluation index system.

5.1. Evaluation of the Pressure of Online Public Opinion on the Reputation of Accounting Firms

The 2018 China New Media Trends Report research shows that most Internet users get information about significant events for the first time through online media, microblogs and WeChat. In addition, as shown in Figure 3, after being informed of significant events for the first time through the three channels of online media, microblogs and WeChat. Most Internet users would go to news APPs and websites for further detailed reports, followed by microblogs and WeChat. Therefore, this study’s data on online public opinion pressure come from online media, microblogs, and the web.WeChat.

According to the performance of each indicator collected by the data analysis platform of ZhiWeiShi, The reputation evaluation index system of accounting firms from the perspective of online public opinion was applied to evaluate four hot cases of stress. The evaluation results are shown in Table 2.

Table 2. Evaluation of the pressure of online public opinion on the reputation of accounting firms.

Guideline layer	Indicator layer	Indicator Convergence	Unit	Zhengzhong Zhujiang Certified Public Accountants	Ruihua Accounting Firm	Zhong Hua Accounting Firm	Tianjian Accounting Firm
p (Pressure)	Key Channel Engagement	-	media	155	144	47	61
	Central-level media participation	-	%	6.9	24.1	20.7	10.3
	Financial media participation	-	%	20	26	22	22
	Technology Media participation	-	%	5	3.8	2.5	1.3
	Average propagation speed per hour	-	Article/hour	5	2	4	3
	Peak propagation speed	-	Article/hour	92	32	51	35
	Event Impact Index	-		61.5	60.7	56.4	56.7
	Proportion of public opinion	-	%	3	1.7	2.7	0.8
	Number of negative lead articles	-	Article	81	112	64	79
	Number of positive lead stories	+	Article	0	0	0	0
	Number of non-leading stories	-	Article	0	11	0	0

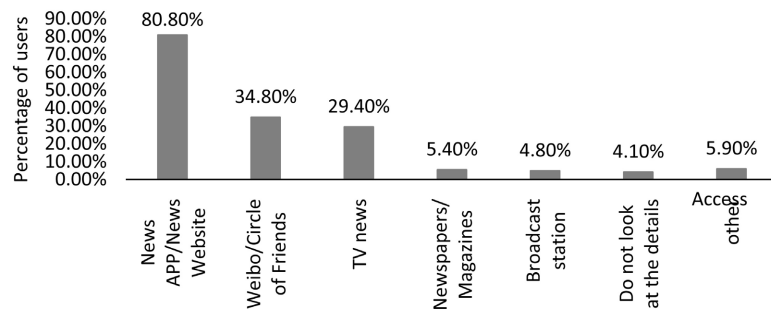


Figure 3. The first way to get detailed reports after a major event.

5.2. Status Evaluation of Accounting Firms

As shown in **Figure 4**, the discussion on the incident of Zhengzhong Zhujiang CPA Firm peaked on April 30, 2019, when its audited entity announced the correction of prior-period accounting errors. On July 28, 2019, Ruihua CPA was investigated by the CSRC in connection with the Kangde Xin incident. On July 28, 2019, Ruihua released the “Statement on the Main Work of the Audit of the Annual Reports of the Kangde Xin Project 2015-2018” through several official channels to defend itself for the first time, which triggered the peak in public

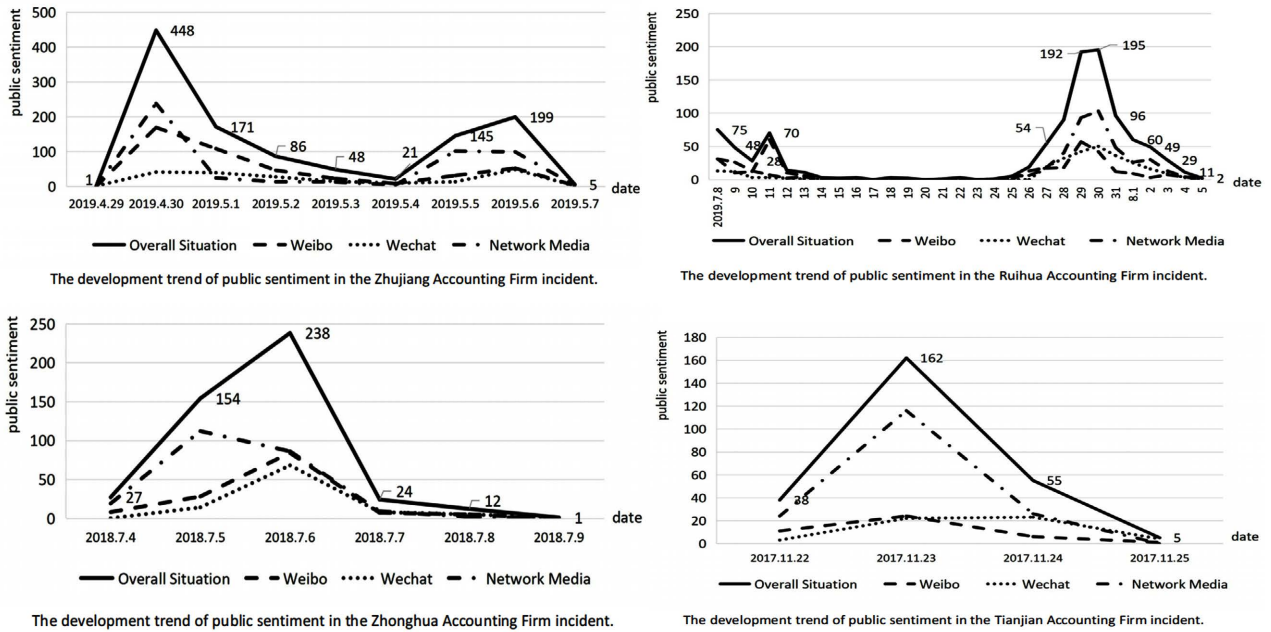


Figure 4. Development trend of accounting firm online public opinion.

opinion. The peak of public opinion on the incidents of Zhong Hua CPA Firm and Tian Jian CPA Firm reached its peak when the audited entity was referred to the public security, and the announcement of material accounting errors was issued. Still, the two firms did not respond during the duration of the incidents.

Combined with Table 4, the initial responses of the four hotspots were sorted out according to accounting firms, and the results are shown in Table 3.

Combining Table 3 and Table 4, the response speed, response attitude, number of responses, and information disclosure were assigned values, and the results are shown in Table 4.

5.3. Responsiveness of the Market and the Securities and Futures Commission

According to the CICPA’s annual comprehensive evaluation table, all direct responsiveness indicators of Zheng Zhong Zhujiang and Zhong Hua CPA Firm have decreased after the adverse events. Ruihua CPA Firm remained in the middle to a high level in all aspects after the Kangdexin incident. Still, the Kangdexin incident led to the departure of Ruihua’s internal team and business shrinkage. In addition, the number of IPO clients of Tianjian CPA Firm decreased after the incident, according to the “Information of Top 100 CPA Firms by Business Revenue in 2017”. In terms of indirect responsiveness, the results are summarised in Table 5, based on the initial response of the CSRC to these four hot topics.

Combining Figure 4 and Table 6, the response speed, response attitude, number of responses, and information disclosure were assigned values, and the results are shown in Table 6.

Table 3. List of four public opinion events accounting firms initial response.

event	Response time	Main Performance
Zhengzhong Zhujiang Certified Public Accountants	30 days later (after the public opinion has subsided)	Response to the CSRC's investigation: Our audit opinion is appropriate
Ruihua Accounting Firm	20 days later (public opinion is developing)	Published a "Statement on the main work of the audit of the annual reports of the CondeXin project from 2015-2018" on several official channels to defend itself
Zhong Hua Accounting Firm		
Tianjian Accounting Firm		

Table 4. State evaluation of accounting firm reputation from the perspective of online public opinion.

Guideline layer	Indicator layer	Indicator Convergence	Zhengzhong Zhujiang Certified Public Accountants	Ruihua Accounting Firm	Zhong Hua Accounting Firm	Tianjian Accounting Firm
S (Status)	Response Speed	+	1	5	1	1
	Response attitude	+	3	3	1	1
	Number of Responses	+	1	1	1	1
	Degree of information disclosure	+	3	3	1	1

Table 5. List of four public opinion events CSRC's initial response.

event	Response time	Main Performance
Zhengzhong Zhujiang Certified Public Accountants	10 days later (after the public opinion has subsided)	Issued a regulatory case investigation letter
Ruihua Accounting Firm	Same day (Opinion in development)	Informed the media that Ruihua Institute has been investigated by the case
Zhong Hua Accounting Firm	Same day (Opinion in development)	Issued a letter to Yabate on the notification of Jiangsu Yabate Technology Co.
Tianjian Accounting Firm		

Table 6. Evaluation of the responsiveness of accounting firms' reputation from the perspective of online public opinion.

Guideline layer	Indicator layer	Indicator Convergence	Unit	Zhengzhong Zhujiang Certified Public Accountants	Ruihua Accounting Firm	Zhong Hua Accounting Firm	Tianjian Accounting Firm
R (Responsiveness)	Change in annual revenue of accounting firms	+	Billion	-1.26	-5.77	-0.3	3.09
	Change in the level of audit fees of accounting firms	+	Billion	-0.15	-0.05	-0.06	0.84

Continued

Change in the number of certified public accountants in accounting firms	+	Number	0	-1000	-8	126
Change in the number of IPO clients of accounting firms	+	Number	-28	-60	-7	-74
Change in market share of accounting firms	+	%	-0.44	-2.28	-0.16	1
Speed of CSRC response	+		1	5	5	1
Attitude of CSRC response	+		5	5	5	1
Number of CSRC responses	+		1	5	5	1
Degree of information disclosure by the CSRC	+		1	3	3	1

5.4. Determination of Indicator Weights

In this paper, the entropy weight method is used to determine the weights of each index, and after standardizing and shifting the values of each index, the entropy value and information entropy difference of each index are calculated by using the relevant formula, and then the index layer weights and criterion layer weights are further determined (See [Table 7](#)).

5.5. Analysis of Evaluation Results

The reputation evaluation of accounting firms from the perspective of online public opinion is the result of the combined effect of pressure system, state system and responsiveness system, and the indicators in each subsystem reflect the different degrees of the system's effect on the reputation of accounting firms under the impact of online public opinion.

different degrees of the role of this system on the reputation of accounting firms under the impact of online public opinion, so the final composite score is calculated according to the comprehensive evaluation model with the following formula:

$$F = \sum_{i=1}^a w_{p_i} x_{y_i} x_i + \sum_{j=1}^b w_{s_j} x_{y_j} x_j + \sum_{k=1}^c w_{r_k} x_{y_k} x_k$$

where, F is the comprehensive evaluation result of the reputation of accounting firms from the perspective of online public opinion; W_p , W_s , W_r are the weights of pressure system, state system, and responsiveness system; y_i , y_j , y_k are the weights of individual indicators in each subsystem; x_i , x_j , x_k are the standardized values of each indicator.

Table 7. Reputation indicator layer and guideline layer weights of accounting firms from the perspective of online public opinion.

Criteria layer	Indicator layer	Indicator weights	Subsystem weights
P (Pressure)	Key Channel Engagement (-)	0.046876	
	Participation of Central Media (-)	0.039476	
	Financial media participation (-)	0.027287	
	Technology media engagement (-)	0.033574	
	Average hourly rate of distribution (-)	0.033289	
	Peak speed (-)	0.026704	0.347274
	Event Impact Index (-)	0.042587	
	Share of public opinion (-)	0.044618	
	Number of negative lead stories (-)	0.027312	
	Number of positive lead stories (+)	0	
	Number of non-leading stories (-)	0.025545	
S (Status)	Speed of response from accountancy firms (+)	0.123100	
	Response attitude of accounting firms (+)	0.061550	
	Number of responses from accounting firms (+)	0	0.246200
	Disclosure of information by accounting firms (+)	0.061550	
R (Responsiveness)	Change in annual revenue of accounting firms (+)	0.029320	
	Change in audit fees of accounting firms (+)	0.074018	
	Change in the number of CPAs in accounting firms (+)	0.025698	
	Change in the number of IPO clients of accounting firms (+)	0.038893	
	Change in market share of accounting firms (+)	0.028398	0.406525
	Speed of CSRC response (+)	0.061550	
	Attitude of CSRC response (+)	0.025545	
	Number of CSRC responses (+)	0.061550	
	Degree of disclosure of CSRC information (+)	0.061550	

The negative impact on the reputation of Zhujiang & Zhujiang Accounting Firm is greater and the ranking is lower (See **Table 8**). Tianjian CPA Firm received the most public opinion pressure due to negative events, and the status and responsiveness after the incident was poor, so the comprehensive system ranked the lowest.

In addition, the impact of negative events on accounting firms is generally longer, and the degree of market responsiveness will become more obvious over time. However, the selection of indicators in this paper is based on the situation within one year after the emergence and development of online public opinion, so the evaluation results of this study may differ from the evaluation results after the development of negative events for a longer period of time.

Table 8. Results of reputation evaluation of accounting firms from the perspective of online public opinion.

Index	Zheng Zhong Zhujiang Accounting Firm	Ruihua Accounting Firm	Zong Hua Accounting Firm	Tianjian Accounting Firm
Pressure system	0.016498	0.018440	0.035883	0.002957
State system	0.015153	0.045461	0	0
Response force system	0.018326	0.045287	0.061795	0.039853
synthetic system	0.049978	0.109188	0.097679	0.042810

6. Conclusion and Insights

With the development of online public opinion and the destruction of accounting firms' reputations, how to build the reputation evaluation system of accounting firms under the perspective of online public opinion has become a key concern for many parties. In this paper, four representative accounting firms are selected for evaluation. And an evaluation index system is constructed based on the PSR model to evaluate the reputation of accounting firms from three levels: the pressure after the incident, the response status of accounting firms after the incident, and the response behaviour of the market and the CSRC. Based on the reputation mechanism theory, the pressure brought by online public opinion will change the total revenue, audit fee level, number of CPAs, number of IPO clients, and market share of accounting firms. But the timely and transparent responses of accounting firms and the CSRC will effectively weaken the negative online public opinion and maintain the reputation of accounting firms.

Therefore, accounting firms should establish relevant public opinion monitoring systems, pay attention to online public opinion, and maintain their reputation. Listed companies should keep abreast of negative online opinions of accounting firms and respond to them. The general public should properly use online public opinion to voice out rationally and protect their rights and interests. The regulatory authorities should establish a mechanism to ask questions on the Internet, draw closer to the public on new media platforms, pay attention to the trend of public opinion, and enhance the ability to deal with public opinion on the Internet.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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