

Analysis of the Degree of Influence between Network Public Opinion and Its Response to Corporate Sales and Stock Prices: Taking the Xinjiang Cotton Incident as an Example

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ABSTRACT

Online public opinion events will have an impact on the company's sales and the stock price of listed companies, and the analysis of the impact can provide decision-making reference for enterprises to deal with public opinion. Taking "Xinjiang cotton" event which got higher attention from netizens as an example, the ADF stability test is conducted on the online communication index of public opinion, the live broadcast sales data and the daily closing stock price data of related brands. Then the unitary linear regression method is used to carry out the correlation test, so as to obtain the impact of online public opinion and its impact degree on the sales and stock price of related enterprises. The R-squared mean value of the regression analysis of online public opinion and the sales of related domestic brands which responded positively exceeds 0.8, showing a strong positive impact. The regression analysis results of online public opinion and related listed companies' stock prices show that stock price fluctuations are related to the online communication index, but because there are many influence factors of stock price, different companies show different degrees of impact.

Keywords: *Online Public Opinion, Online Communication Index, Live Sales, Changes in Stock Prices, Regression Analysis*

1. INTRODUCTION

With the development of the information age and the popularization of the Internet, online public opinion events have attracted more and more attention, and have had a profound impact on the stock price and sales of enterprises. The purpose of this paper is to provide a theoretical basis to help enterprises make relevant decisions quickly when public opinion occurs.

Fang Fujian [1] research and development if the network public opinion is not dealt with in a timely manner, it will cause an irreversible crisis situation for the enterprise. Wang Kang [2] believes that the more timely and active an enterprise's intervention in online public opinion, the less negative impact of public opinion on the enterprise. Dong Xiaoying [3] believes that enterprises should choose their own competitive strategies according to their own operating conditions and management forms. Chen Yang [4] said that local brands are bound to transform. Zhang Yuzhi [5] stated that positive public opinion has a positive role in promoting the development of events, while negative public opinion will inevitably distract energy while being positive. Tong Wentao [6] believes that enterprises should seize the Internet public opinion,

reshape the corporate brand image, upgrade products, and keep the enterprise away from danger. Dellarocas [7] believes that Internet public opinion helps companies formulate correct corporate development strategies. Godes [8] emphasized that online public opinion affects consumers' purchasing decisions and has an important influence on the sales plan of enterprises

This article takes the "Xinjiang Cotton" online public opinion event in 2021 as an example to study the impact of different companies' public opinion responses and sales on the company's stock price.

2. PUBLIC OPINION CYCLE ANALYSIS

Based on the trend of the most representative organization and brand network communication index since the Xinjiang Cotton Incident, this public opinion cycle is analyzed. In Figure 1, the abscissa represents time, and the ordinate represents the network propagation index of related keywords in the process of time occurrence.

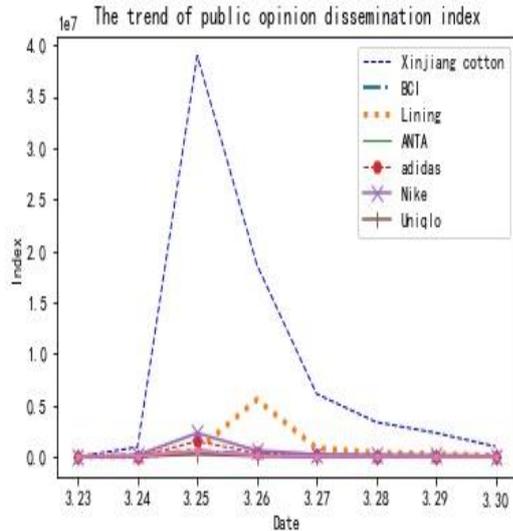


Figure 1. Trend of online public opinion communication index of relevant brands and organizations

Based on the evolution trend of events shown in Figure 1, the network public opinion cycle is divided into three stages: incubation period (before March 23), growth period (from March 23 to March 24), and outbreak period (March 25), the recession period (after March 26). As can be seen from Figure 1, the network communication index increases rapidly after the occurrence of online public opinion events. At this time, it enters the growth period, the attention of netizens and the number of clicks on the event increase rapidly, and the change trend of the network communication index shows a parabolic shape. During the outbreak period, netizens pay attention to the popularity and clicks reached the peak, and the popularity of online public opinion also reached its peak. Subsequently, with the subsidence of the Xinjiang cotton incident, the online public opinion gradually entered a period of decline. At this stage, the attention of netizens and the number of clicks on the event will gradually weaken, and eventually approach the zero.

3. DATA SOURCE AND STATIONARITY TEST

The data used in this article are all from Qingbo Public Opinion, Grey Dolphin Data and Eastmoney.com. First, use Eviews 10 to test the stationarity of these data based on ADF time series, and conduct follow-up research after the data is stable.

4. ANALYSIS OF THE INFLUENCE DEGREE OF NETWORK PUBLIC OPINION AND ITS RESPONSE ON ENTERPRISES

4.1 Regression Analysis of Public Opinion Network Spread Index and Enterprise Sales

In order to analyze the influence of the network communication index on the company's sales, a regression analysis was carried out on the correlation between the live broadcast sales of each brand, the daily closing price and the network communication index.

Taking the Li-Ning brand that actively responds to public opinion as an example, the correlation between the network communication index and sales is studied, and a univariate linear regression test is carried out. As can be seen from Figure 2, both C and X in the results are positive numbers, which have economic significance. The R square of the two is 0.835311, the correlation is strong and the two are positively correlated, basically linear, and the P value is less than 0.05, so the t test indicates that the two are significantly correlated.

Dependent Variable: X
 Method: Least Squares
 Date: 04/24/22 Time: 13:07
 Sample (adjusted): 1 9
 Included observations: 9 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-763856.1	237160.4	-3.220842	0.0146
Y	0.150637	0.015465	9.740328	0.0000
R-squared	0.931288	Mean dependent var		886641.8
Adjusted R-squared	0.921472	S.D. dependent var		1776335.
S.E. of regression	497780.9	Akaike info criterion		29.26684
Sum squared resid	1.73E+12	Schwarz criterion		29.31067
Log likelihood	-129.7008	Hannan-Quinn criter.		29.17226
F-statistic	94.87398	Durbin-Watson stat		2.426230
Prob(F-statistic)	0.000025			

Figure 2. Fit degree between Li Ning's live broadcast sales and Xinjiang cotton public opinion index (March 23-March 31)

On this basis, the regression analysis was carried out with the Xinjiang cotton network communication index as the independent variable and the live broadcast sales of each brand as the dependent variable. The regression results are shown in Table 1. Brands with strong correlation with Xinjiang Cotton Network Communication Index accounted for 81.25%. The average R-square of the regression analysis is 0.811602 > 0.8, indicating that the positive response to public opinion has a strong positive impact on brand sales.

Table 1. Correlation between changes in sales of various brands and trends in Xinjiang cotton public opinion dissemination index

S/N	Brand	Peak Delay Days	<i>R-squared</i>
1	Lining	2	0.882827
2	Skechers	2	0.804045
3	ANTA	2	0.954504
4	Xtep	2	0.778471
5	HLA	0	0.919331
6	SEM/R	2	0.899419
7	LEDiN	1	0.875638
8	Huili	1	0.908976
9	PEACEBIRD	0	0.826581
10	Feiyue	0	0.395117
11	hotwind	0	0.821938
12	Eifini	0	0.825668
13	Bosideng	0	0.912049
14	Erdos	0	0.812248
15	QIAODAN	1	0.449439
16	EP	0	0.919379
17	average value	0.8125	0.811602

Compared with the domestic brands that responded positively, the three international brands, Adidas, Nike and ZARA, did not respond after the public opinion. Anta company followed the trend, issued a statement on Weibo to withdraw from the BCI organization, and said that it has always adopted and used Xinjiang cotton. Heilan House brings "national symbols" such as the zodiac into product development and continues to innovate. Bosideng participated in the 2019 New York Spring/Summer Fashion Week as a representative of the national tide, causing a sensation in the domestic fashion circle and becoming a representative of leading the national tide to the world.

They break the stereotyped image of local brands in the minds of consumers, introduce new creative elements, and combine with technology, which is refreshing and has won the attention of consumers. Therefore, they are more obviously positively affected by the Xinjiang cotton incident.

4.2. Regression Analysis of Network Communication Index and Enterprise Stock Price

On the basis of the influence of the network communication index on the sales of live broadcast, the degree of influence between the network communication index and the stock price of listed companies is further analyzed.

Table 2. Correlation between stock prices of sample companies and Xinjiang Cotton Network Communication Index

S/N	Brand	stock code	R-square
1	Xinsai Shares	600540	0.587691
2	Lining	02331	0.230596
3	ANTA	02020	0.176859
4	Skechers	SKX	0.557406
5	HLA	600398	0.887686
6	SEM/R	002563	0.480362
7	PEACEBIRD	603877	0.785697
8	Bosideng	03998	0.665632
9	Erdos	600295	0.201292
10	adidas	ADDYY	0.261466
11	Nike	NKE	0.296451
12	ZARA	ITX	0.123530
13	Uniqlo	06288	0.090519

Table 2 is the regression verification of the stock price of listed companies and the Xinjiang Cotton Network Communication Index. It is found that not all brand stock price fluctuations are related to the Xinjiang Cotton Network Communication Index. Taking Li Ning, Anta, and Erdos as examples, because they have received more attention from consumers and were positively influenced by Xinjiang cotton public opinion, the three brands have a long time after public opinion. It shows an increasing trend and does not follow the law of Xinjiang Cotton Network Communication Index rising first and then falling, so the correlation between these three brands and Xinjiang Cotton Network Communication Index is low. Similarly, Adidas, Nike, Zara, and Uniqlo, which were negatively dealt with, were also negatively affected by public opinion, especially since Adidas belongs to the US stock market and is affected by other global factors, so it has not strictly followed the domestic consumption trend.

5. CONCLUSIONS

Through regression analysis, this paper found that 81.25% of the domestic brands that responded positively to the "Xinjiang Cotton" incident had a strong correlation between the network communication index and brand sales. The positive response has a strong positive impact on brand sales.

The regression analysis on the stock price of listed companies and the network communication index found that not all brand stock price fluctuations are related to the event network communication index: Li Ning, Anta, and Erdos who responded positively had more far-reaching influences. Adidas, Nike, Zara, Uniqlo, etc. that responded negatively were all negatively affected

by public opinion. , the stock price is generally in a downward trend due to other factors. Other brands are limited by public opinion, and the trend of stock price changes is basically the same as that of Xinjiang Cotton Network Communication Index.

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