A Comparative Study of The Application of NPV And IRR To Real Estate Investment Decision- Making

Chi Zhang *

Tianjin Foreign Language School AP centre, Tianjin, China

* Corresponding Author Email: tfls_stella2023@126.com

Abstract. The China real estate industry is undergoing a fluctuation nowadays. And this paper is going to investigate this industry by researching a leading enterprise, CHINA VANKE CO., LTD. with the assistance of two financial instruments, Net Present Value (NPV) and Internal Rate of Return (IRR). Furthermore, the paper has another purpose that is comparing the properties between NPV and IRR. This paper uses literature research method and case study to analyse the situation of Vanke and list the possible considerations while having the analysis. After a series of research, the author considers NPV as a better indicator compared to IRR. NPV has the advantage of simple marginal determination, however, the related indicator, discount rate cannot be determined easily and accurately in the real estate analysis since it can be affected by many factors. For advantage of IRR, it is simple to calculate the value because it is only decided by the cashflows. On the other hand, IRR cannot clarify the real estate investment decision-making by itself, it must have the assistance of NPV versus discount rate graph. Consequently, the mixed employment would present a clearer and more comprehensive analysis for investors.

Keywords: Real estate industry, IRR, NPV, investment decision-making.

1. Introduction

With the continuous development of China's economy, China's real estate industry has also ushered in the golden period of industry in the 21st century. As the real estate industry continues to expand the scale of revenue, during this period, there are also cases that rely on this industry to cross classes, making real estate a hot investment direction for a time. From the perspective of finance, this paper explores real estate industry by two finance instruments, NPV and IRR.

As an important part of China's GDP, real estate has a close relationship with China's economy [1]. From a macro perspective, based on China's mixed economic system, the important trend of China's real estate industry is jointly determined by the market and the government, and its industry trend can somehow reflect current situation of the overall economy.

Since the beginning of the 21st century, the real estate industry has become a money maker, and many investors have obtained large profits in the real estate industry projects at that period. Moreover, the real estate industry is showing a thriving prosperity. However, in recent years, due to the early market boom, housing prices have been constantly raised, making buying a house a burden for many families. According to the research, the house property takes 70% to 85% proportion of most Chinese families [2]. Additionally, under this situation, families with multiple houses are also worried about the possible sharp drop of housing prices.

Raymond Vernon once proposed that the industry includes four cycles, which are the initial stage, the growth stage, the maturity stage and the decline stage [3]. As time goes by, each industry will go through these four stages, but the specific time is not clear. Recent historical data show that the real estate industry experienced a market downturn in 2008 and 2011, and since 2012, the industry has entered the brand dividend period, during which the industry concentration has increased, large housing enterprises have penetrated third and fourth cities, and some small housing enterprises are also active all-around China. The author believes that the real estate industry is generally now in a mature period, the industry trend is the same as the general economic trend, and competitors are competing for market share in a stable industry.

2. Case

In the overall mature environment, the sales amount of most enterprises has continued to decline in the past three years, and the recovery of residents' confidence in buying houses is relatively slow. In this paper, CHINA VANKE CO., LTD., one of the leading enterprises in China's real estate industry, will be deeply explored in the following paragraphs to find out whether Vanke, one of its industry representatives, has a great influence during the volatility period of China's real estate industry, and two different financial instruments will be used to give different biased answers based on this case to reflect its characteristics.

CHINA VANKE CO., LTD., as a leading company in the real estate industry, was founded in 1984, entered the real estate industry in 1988 and issued 28 million shares to the public. In 1991, Vanke Group A shares were listed on the Shenzhen Stock Exchange, and B shares were issued in 1993. Vanke has been expanding its business scope for the last 40 years and has been included in the list of "the world's 500 Largest Companies" by Fortune Magazine for many years.

Vanke ranked second among Chinese real estate enterprises in 2023 with sales of 375.54 billion yuan, according to the newly released “China Real Estate Sales List of Billions of Enterprises in 2023” by the China Index Academy. The ranking reflects Vanke's significant position and influence in China's real estate industry. In 2023, in the face of continued market decline, Vanke actively adapted to ensure the safety of cash flow and maintain normal and orderly operations.

3. Analysis

3.1. Net Present Value

As an enduring financial tool, Net Present Value (NPV) is highly valued in the real estate industry [4]. The NPV evaluation method has become one of the main criteria for evaluating investment real estate development. At Present, Vanke adopts the NPV method to calculate internal revenue and has maintained positive net cashflow in the past 15 years.

NPV refers to discounting future estimated cash flows at different times to the same time and calculating an amount, which can help investors determine whether a project is worth investing in. It can be expressed as an equation:

$$\mathrm{NPV}=\sum_{t=0}^{T}\frac{CF_t}{(1+r)^t} \tag{1}$$

(CF_t= cashflow in year t, T= the last year in which cash flow must be calculated, r= discount rate)

NPV does not represent the profits that investors will earn after T years but is only used as a financial tool to measure whether a project is worth investing in or to compare the profitability of different projects. When the NPV of a project is greater than 0, the project is considered worthy of investment. When the NPV of a project is 0, it makes no difference whether the project is considered an investment or not. When the NPV of a project is less than 0, the project is considered to have no investment value and not worth investing in. When comparing different projects, the greater the NPV, the greater the return that the corresponding project can bring to the investor. The choice of discount rate is a very important part of the calculation of NPV, and for the future NPV calculation, the discount rate usually be considered as the cost of capital or the expected return on this project [5]. In addition, the discount rate is generally suggested to be variable along the time passes [5].

Furthermore, NPV has its relevant chart called cash flow chart. The chart shows out each cash flow and its corresponding time along a horizontal axis, like the chart showing in Fig. 1. The cash flow chart provides a more visible method for investors to understand the overview and details about the project.

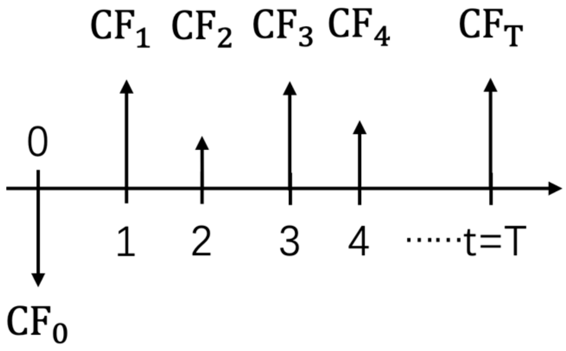

Fig. 1 An example of a cash flow chart

However, the NPV method becomes more variable when applied to estimating future investment returns. In most of the cases in real estate industry, the determination of the discount rate is the key point to accurate the calculation result. Additionally, the author suggests the factors that can determine the change of the whole cash flow chart in the real estate industry can be divided into five aspects.

First, the market interest rate is a factor that affects a few cash flows since one of the main sources of money for investment is bank loan. As a result, the change of the market interest has a strong influence on the general calculation of the cashflows. Second, the inflation rate of the whole economy will cause the fluctuation of the discount rate since it affects the whole world in many aspects [6]. Because the increase in inflation rate decreases the purchase power for same amount of money. If the inflation rate is not stable and low during the project, the discount rate would be difficult to calculate and the time value for the money is high. Third, the risk level of real estate projects is also a key factor affecting the discount rate. Risk level includes market risk, credit risk, liquidity risk and so on [7]. Different types of real estate projects have different risk characteristics, such as commercial real estate, residential real estate, industrial real estate, etc [8]. Investors will demand different rates of return according to the level of risk of the project, and the riskier the project usually requires a higher rate of return, resulting in an increase in the discount rate. Fourth, the expectation and confidence of investors is also crucial. Since the future cannot be predicted precisely, investors may quit the project when the current return is declining. The last but not the least, the macroeconomic environment is also a factor that affects the cashflows, which includes economic growth, unemployment rate and price level. Therefore, the accurate NPV cannot be completely estimated based on the available information.

3.2. Internal Rate of Return

The Internal Rate of Return (IRR), another basic basis for deciding whether to invest, is a financial instrument that has the similar function with NPV. Its basic principle is like the discount rate, which can be roughly called a marginal discount rate and can only be obtained when NPV is 0. The IRR formula is as follows:

$$\mathrm{NPV}=\sum_{t=0}^{T}\frac{CF_t}{(1+IRR)^t}=0 \quad (2)$$

During the utilization of IRR, the chart of the NPV vs discount rate is very important. This paper is going to take a simple case as an example, When the cashflows are going like Fig. 2

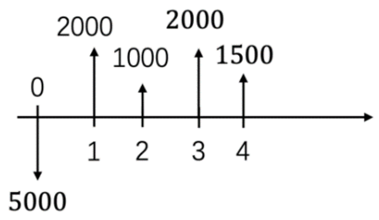

Fig. 2 The cash flow chart for the example

This case will generate a NPV versus discount rate graph that shows out the value of NPV in different discount rate, shown as Fig. 3.

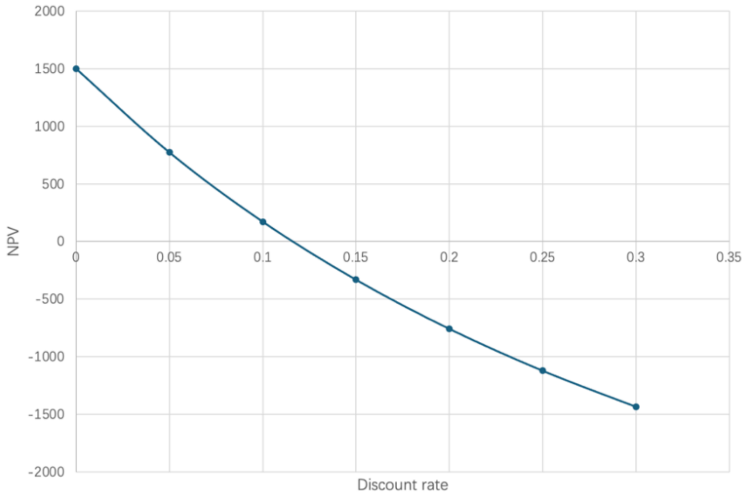

Fig. 3 The NPV versus discount rate graph for the example

According to the information in the chart, NPV changes with the discount rate, and when this curve intersects the X-axis, the discount rate is the value of the IRR. Investors can compare the current discount rate with IRR to find out whether the project is worth investing in.

Yet the limitations of IRR are also apparent. First, the value obtained by IRR formula alone cannot accurately predict the discount rate area of investment, and the corresponding chart can be combined with NPV to make the judgment not deviate from the track from the foundation. Second, not all projects can derive their IRR, and the NPV of some projects is in a state greater than 0 at any discount rate, or there are more than one IRR values in one project when exist reinvestment [9]. Third, when the expected cashflows are not precise, there would exist difficulty on the IRR calculation [10].

4. Discussion

Based on the above usage and characterization of the two financial instruments, the author argues that NPV has fewer limitations and requires the participation of NPV in both indicators to reach a definitive conclusion. Although both financial instruments have the problem of inaccurate predictions of future cash flows resulting in skewed results, NPV is a very reliable indicator in most cases. With the more in-depth exploration of the financial field, new financial instruments such as Modified Internal Rate of Return (MIRR) has been derived from IRR to decrease the impact brought by the drawbacks of IRR [9]. Based on the exploration of leading enterprises in the real estate industry in this paper, according to the annual report of Vanke, the list of China's real estate sales of 10 billion enterprises published by China Index Academy over the years and the sales reports of most large real estate enterprises can explain the overall downward trend of the real estate industry to a certain extent.

There are many influencing factors, and this author believes that one of them is based on the automatic adjustment function of the market itself: in the early stage of real estate development, there is an oversupply or a balance between supply and demand in most areas, so the price is constantly raised. However, as more people find the real estate industry profitable, more enterprises will enter the industry and seize market share, making the market competition fiercer. At the same time, people invest too many resources to produce unnecessary surplus real estate and because more families see buying a house as a low-risk investment, more and more people will buy a house. This has led to a situation in the market where the resistance to selling real estate has increased but the overall price has not fallen significantly. Based on historical events, if only the market mechanism to regulate the real estate market, then there is a high probability of causing a serious financial bubble crisis which the value of goods is much higher than the actual value, and when prices reach an inexplicable peak, the collapse of many people's assets will be seriously damaged, and society will also be affected [11].

5. Conclusion

The paper compares NPV and IRR based on a case in real estate industry and generate a few opinions according to the research. Two basic finance instruments both have their advantages and disadvantages when applying to real estate industry projects, and none of these indicators can value a project accurately by itself. NPV has the problem that the discount factor cannot be determined easily and precisely. On the other hand, IRR faces A bigger problem, the comparison between IRR and the current discount rate cannot show out an apparent result only based on the IRR values but also requires the assistant of additional graph or the help of NPV. In addition, the author suggest two indicators should be use together and produce a more visual and pellucid analysis. Consequently, the further research and development of financial instruments are required for investors to define a project better and lower the risk of getting a loss. And the author will keep research on the accurate calculation of real project of Vanke in the future.

References

[1] Xianchao, S., & Chengjie, H. Stock market turnover and china's real estate market price: An empirical study based on VAR. Contemporary Social Sciences, 2022, 7(4), 17-38.

[2] Li, H., Liang, L., & Sun, C. Does property return affect seller behavior? an empirical study of China’s real estate market. Behavioral Sciences, 2023, 13(1), 55.

[3] García-Parejo, A., Caro-González, F. J., & Chavarría-Ortiz, C. La industria cultural taurina española en tiempos de crisis (2007-2013): Fase del ciclo de vida de la industria. [The Spanish Bullfighting Cultural Industry in Times of Crisis (2007-2013). Its Phase in the Industry Lifecycle] Revista Finanzas y Politica Economica, 2023, 15(2), 465-492.

[4] Ying, D. Optimization of tourism real estate development project based on option premium model. Discrete Dynamics in Nature and Society, 2021.

[5] Carmelo, G., Erasmo, G., & Zhao, Y. Short-term andLong-TermDiscountRates for real estate investment trusts. Journal of Real Estate Finance and Economics, 2021, 63(3), 493-524.

[6] Butler, S., Searle, K. D., & Malan, P. C. A portfolio selection problem arising from real-estate investments. ORiON, 2023, 39(2), 159-178.

[7] Wu, Z., Yang, B., & Su, Y. Corporate bond pricing model with interaction between liquidity and credit risk. Complexity, 2022.

[8] Venta, E., Slaydon, J., Colon, R., & Sargsyan, G. The financial recovery of region from economic disruptions and resiliency of real estate - construction sector: A case study of southeast texas economy and real property values. The Journal of Applied Business and Economics, 2024, 26(2), 106-118.

[9] Xie, M., & Chen, W. K. Research on the modified internal rate of return. Turkish Journal of Computer and Mathematics Education, 2021, 12(11), 4087-4090.

[10] Xu, S., Liu, S., Cheng, L., Gao, J., & Chen, P. Comparative study on financial calculation indicators of PPP project. IOP Conference Series.Materials Science and Engineering, 2019, 688(5)

[11] Nica, I., Ionescu, Ș., Delcea, C., & Chiriță, N. Quantitative modeling of financial contagion: Unraveling market dynamics and bubble detection mechanisms. Risks, 2024, 12(2), 36.

The Silent Saboteur: The Impact and Management of Malicious Word-Of-Mouth in The Digital Age

Yunxin Zhou

Beijing No.2 Middle School, Beijing, 100010, China

awper007@tzc.edu.cn

Abstract. In the digital era, the impact of malicious word-of-mouth on individuals and businesses is complex. Malicious online reviews and false information can spread quickly, causing serious damage to personal reputation and corporate branding. This article provides an in-depth analysis of the effects of malicious word-of-mouth on various aspects of the economy and society, and proposes effective strategies for response. Through specific case studies, such as the controversy surrounding the BOY LONDON brand, the public relations crisis of the Wahaha brand, the damage to Jiang Ping's personal image, and the "pink-haired girl" incident, this article illustrates how malicious word-of-mouth can erode consumer decision-making autonomy, pose threats to personal physical and mental health, and tarnish the image of brands and enterprises. To address these challenges, companies and governments must take proactive measures, such as monitoring and responding to negative information on the Internet to maintain a positive image and strengthening Internet regulation to ensure the authenticity and transparency of information and to prevent the spread of false information. At the same time, improving public media literacy helps people identify and resist the influence of malicious word-of-mouth.

Keywords: Internet word-of-mouth; mental health; decision-making power.

1. Introduction

In the digital age, the Internet has become a central channel for shaping and spreading brand reputation, with Internet Word of Mouth (IWOM) being particularly influential. IWOM consists of testimonials, ratings and reviews shared by consumers on online platforms, which can quickly influence potential customers' purchasing decisions. Due to the wide reach of the Internet and the immediacy of information dissemination, a single comment or review has the potential to be seen by a large number of users in a short period of time, thus having a profound impact on a brand's image. Consumers are increasingly relying on word-of-mouth information on the Internet, which is regarded as a more authentic and credible reference than other traditional advertisements, before making purchase choices. Therefore, IWOM is crucial for enterprises, which not only relates to the establishment and maintenance of brand image, but also directly affects market performance and consumer loyalty. Companies must recognize the importance of IWOM and adopt strategies to actively manage their online reputation, including monitoring discussions on social media, responding to consumer feedback in a timely manner, and fostering positive word-of-mouth by providing high-quality products and services. This focus on and management of IWOM has become an integral part of modern marketing and branding strategies.

Current research reveals the far-reaching impact of malicious word-of-mouth on brand and consumer behavior in the digital age. This word-of-mouth spreads not only rapidly but also widely, and it plays a central role in shaping consumer attitudes and purchasing decisions. Malicious word-of-mouth poses a potential threat to the image of a company or brand, emphasizing the urgency of maintaining a high level of vigilance and taking effective countermeasures against this phenomenon. [1]. Individuals and companies must strengthen their awareness of prevention and develop well-thought-out strategies to protect their interests, while actively promoting the healthy development of the online environment. Through the measures, these can maintain a clear cyberspace while ensuring security [2-4].

By analyzing real cases on the Internet and combining relevant statistical data, this article comprehensively explains the multi-dimensional impact of malicious word-of-mouth on the economy and society and its effective countermeasures. First, IWOM undermines consumers' decision-making autonomy and interferes with people's ability to make rational choices based on correct information by spreading misleading information. Second, malicious word-of-mouth poses a serious threat to the physical and mental health of victims, which may not only cause psychological problems, but sometimes even lead to more serious physical injuries. Finally, the paper emphasizes the key role of the government and related agencies in dealing with malicious IWOM by taking the necessary regulatory measures to regulate the use of the Internet and protect consumers from malicious information. These measures aim to create a healthier and more positive online environment that promotes the transparent flow of information while protecting the legitimate rights and interests of individuals and businesses.

2. Disruption on Decision-Making Power

2.1. Impact on the Perception of a Brand

A man in Tangshan City, Hebei Province, China, garnered significant public notice in June 2022 for his aggressive behavior. However, the incident also sparked a great deal of social discussion and introspection because of how quickly word about it circulated online. The video swiftly incited outrage and criticism from the public after it was made public online.

As the event became worse, some online users noted that the attacker was dressed in a short-sleeved shirt bearing the BOY LONDON trademark. BOY LONDON, which used to be prominent in the fashion industry and was even regarded as a "style icon", gradually lost its former luster after this incident. Extremist comments such as "BOY's main clientele is now social hooligans" appeared on the Internet, which not only intensified the public's negative impression of the brand, but also inadvertently contributed to the brand's marginalization in the Chinese market. Many unthinking netizens, without a full understanding of the situation, followed the winds of online public opinion and unfairly accused and boycotted the brand.

The incident developed as a result of people's rage, which led more people to choose to reveal and criticize the situation online. However, at the same time, other people let their ire out on a brand that was unrelated to the incident because of offensive words they had heard. They were unaware that such incorrect thinking might seriously harm a brand and even force it out of a nation's market. In order to show their "sense of justice," netizens must observe the situation objectively, consider their own perspectives before voicing their ideas, and determine whether their arguments are sound and sufficiently supported. Governments and related institutions should avoid extreme actions when dealing with public opinion, such as overreactions or radical statements, to prevent exacerbating the issue instead of resolving it.

2.2. Impact on Decision-Making

The Chinese Wahaha brand's best-selling product, Wahaha AD Calcium Milk, is very popular among consumers for its appealing taste and has significantly increased the brand's revenue. In 1996, the company was attacked by malicious rumors. A woman in her thirties from the countryside, out of boredom, edited a message online saying, "Drinking Wahaha AD Calcium Milk and other dairy drinks will cause children to get leukemia." This message was forwarded on several social media platforms, spreading more than 170 million times. Consumers fell into a panic and condemned the Wahaha brand one after another. For a while, the brand was flooded with abuse. What's more, in order to understand the whole situation and to heat up and create more rumors, such as "AD Calcium Milk can cause cancer," and so on.

The Wahaha brand was caught in a storm of public opinion and filed a lawsuit in court, demanding that the defendant publicly apologize and compensate 200,000 yuan. The investigation showed that all the content was nonsense made up by the person in their spare time.

Conjecture has no expense. A carelessly created falsehood has the potential to endanger the whole company. This can lead to consumers' attitudes towards a brand affecting their purchase decisions for its products [5]. Netizens should confirm the information's source and veracity before accepting and disseminating it in order to prevent unwittingly creating rumors. They should also consider how their words and deeds may affect other people or businesses before speaking, and they should refrain from saying anything inappropriate that could hurt someone. This incident also emphasizes how critical it is to raise media literacy levels and the public's capacity to recognize information in order to slow the spread of misinformation [6]. Furthermore, it is imperative for firms to implement a robust crisis management protocol to promptly address rumors and mitigate the negative consequences. Maintain open lines of communication with the public and promptly disseminate official statements and information to rectify any misconceptions [7]. By working together, this can prevent the creation and dissemination of online rumors while sustaining the reliability and order of the online community.

3. Impact on Mental Health

In June 2024, Jiang Ping, a student from a secondary vocational school, secured the 12th best score in the world, advancing to a global mathematics competition. The topic "Jiang Ping was questioned" rapidly rose to the top of Weibo's hot search list, remaining there for one hour and twelve minutes, with the total topic views reaching 120 million, drawing the attention of major media outlets. The online public opinion was sharply divided, causing significant distress to the girl and her friends and teachers.

At the critical moment before the final competition, Jiang Ping's school contacted psychological institutions and related organizations. While Jiang Ping received psychological counseling, they quickly reached out to the Weibo management to remove the hot search topic and delete the posts. Thanks to the joint efforts of both parties, Jiang Ping was not affected by the malicious gossip during the final competition.

Online public opinion can exert tremendous psychological pressure on individuals, especially negative commentary, which may lead to issues such as anxiety and depression. This incident highlights the complexity of how individuals in an online society face pressures from public opinion, maintain their personal reputation, and gain societal recognition for their achievements. For Jiang Ping personally, staying focused, proving her abilities, and seeking legal and social support when necessary were crucial strategies to counter skepticism. As netizens, it is important not to blindly follow trends and to verify the sources of information to avoid being misled by false news. Online public opinion is a double-edged sword; a correct understanding and response to it can aid in the better development of both individuals and society.

Another similar incident, mishandled and exacerbated by various factors, led to a tragic outcome. A girl who had just received her graduate admission letter faced cyber violence due to hair dyeing and, after enduring 194 days of online attacks, ended her life. Her photo was misused by a marketing account, and the malicious remarks not only flooded the comment section but also infiltrated her life like a shadow. The anonymity of the Internet has become an excuse for some to act recklessly, spreading rumors, defamation, and malicious comments to vent personal negative emotions without regard for the impact and consequences on others. The girl did not receive timely treatment, nor were there relevant organizations to control the escalation of public opinion, ultimately leading her to succumb to the immense pressure in an extreme manner.

Three fundamental categories can be used to classify the malicious comments made by netizens, based on the typical occurrences of cyber violence that have been published in Chinese news during the previous ten years. The victims' psychological well-being has suffered significantly from all three of these factors.

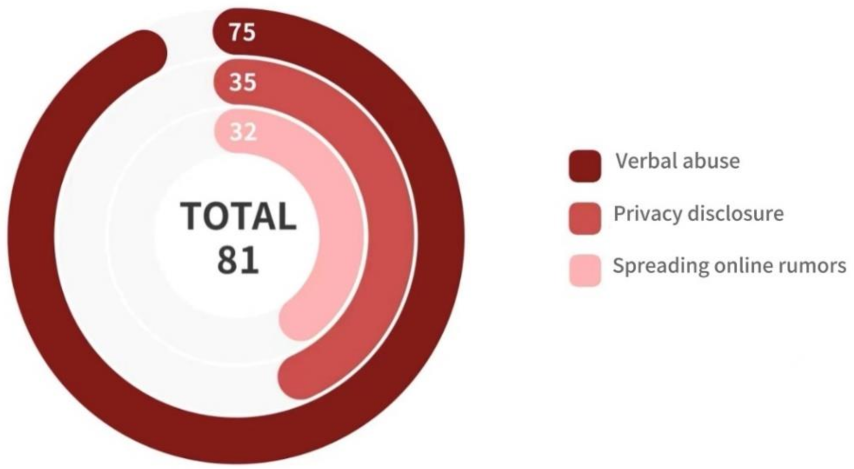

Fig. 1 Malicious comments from netizens on the incident

As shown in Figure 1, in 75 out of 81 typical cases, netizens resorted to verbal violence against the victims without being fully informed about the entirety of the incidents. In 35 cases, the privacy of the victims was compromised by netizens, and in 32 cases, the victims suffered varying degrees of harm from rumors.

At the same time, the victims' emotional responses also indicate that the damage from malicious word-of-mouth is substantial. By further examining the aforementioned cases and expanding the search over a 10-year period to include more covert cases, such as those not filed with the Public Security Bureau, the victims' feedback can be broadly categorized into five types of behavior.

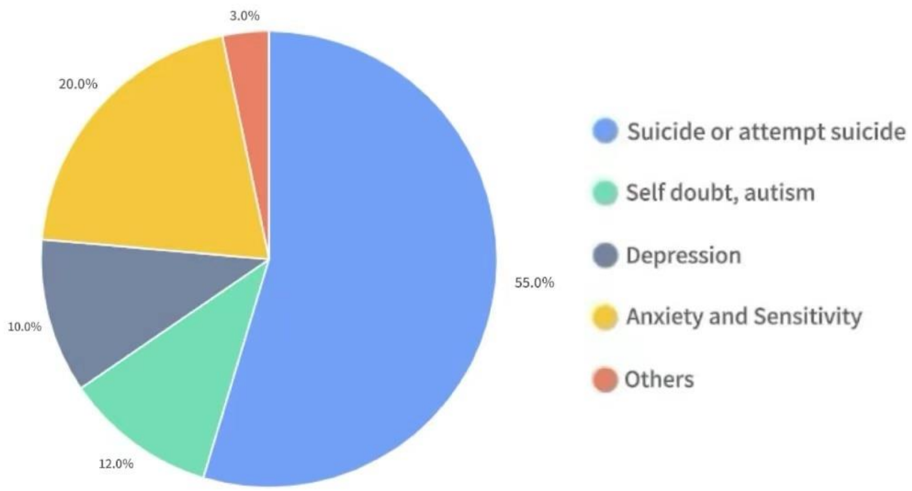

Fig. 2 Malicious comments from netizens on the incident

In Figure 2, ten percent of the victims exhibited varying degrees of depression; twelve percent of the victims experienced thoughts of self-doubt; twenty percent of the victims fell into states of anxiety and sensitivity, accompanied by irritability; and as high as fifty-five percent of the victims were inclined to use suicide as a means to resolve their issues.

The harm of malicious word-of-mouth to individuals is inestimable. As individuals, they lack the ability to resolve such incidents immediately, and some of them do not even know how to make the right decisions when faced with malicious comments to minimize the physical and mental harm they suffer. On one hand, the awareness of netizens in this regard should be heightened. Only when they truly understand the dangers of malicious word-of-mouth can such incidents be prevented. On the other hand, the government and relevant institutions should also pay attention to the physical and mental health of the victims, take timely measures to respond, and maximize the prevention of tragedies.

4. Government Intervention

In the face of the challenge of negative information on the Internet, the role of the government is crucial. Establishing a rapid response mechanism is the first step for the government to deal with negative information on the Internet. A real-time monitoring system can quickly identify and locate the source and distribution path of negative information. For companies that receive malicious word-of-mouth, once potential negative information is detected, the government should take immediate action by releasing accurate information through official channels, correcting erroneous views, and calming public suspicion and panic. This can minimize the damage to the company.

For individuals who have been harmed by malicious comments, the government should take immediate steps to ensure the physical and psychological safety of the victims, which may include the provision of emergency psychological counseling services to help them deal with the emotional distress and psychological stress caused by cyber violence. Professional counselors can provide victims with the necessary psychological support and intervention to help them ease their emotions and rebuild their self-confidence. Meanwhile, the government should work with cybersecurity organizations to quickly locate the source of public opinion. After identifying malicious comments and cyberattacks, the government needs to take legal action to require the relevant platforms and individuals to delete harmful comments and works. This is not only a protection for the victims, but also a purification of the online environment.

Building an effective online regulatory system is the key to long-term governance of the online environment. This requires not only technical means, such as algorithms to identify and filter inappropriate content, but also legal means to establish clear online behavioral norms and punish malicious behavior. Online anonymity may lead to an increase in malicious comments, so the government needs to curb such behavior through legal and regulatory means to ensure order in cyberspace [8].

Enhancing public media literacy is equally important. The government should improve the public's ability to identify false information and enhance their immunity to online rumors through education and public awareness. Consumers are more sensitive to negative information, so improving media literacy is crucial to curb negative word-of-mouth [9].

Cross-sectoral cooperation is another key point. The government needs to collaborate with the education sector, legal institutions, social organizations, and the private sector to form a multi-party, collaborative online governance model. Through such cooperation, cyberspace can be covered more comprehensively, undesirable information can be combated more effectively, and public demand can be responded to more quickly. Such cooperation is crucial to building a healthy and positive cyber environment [10].

Through these comprehensive measures, the government can not only effectively curb negative word-of-mouth, but also enhance the public's trust and satisfaction with government behavior and build a more harmonious online society. This requires the joint efforts of the government, enterprises, social organizations and the public, and everyone should become the guardian of the online environment and work together to create a clear cyberspace.

5. Conclusion

Malicious word-of-mouth has profound effects on both individuals and businesses, as it can rapidly alter public perception, harm brand reputation, and influence consumer purchasing decisions. The article analyzes how malicious word-of-mouth impacts the autonomy of consumer decision-making, poses a threat to personal physical and mental health, and damages the image of brands and enterprises. The article, through independent analysis of the impact of malicious word-of-mouth on brands and individuals to varying degrees, demonstrates that due to the rapid spread and wide reach of malicious word-of-mouth, it can cause brands to quickly lose honor and customers, and can subject individuals to public opinion pressure, resulting in severe psychological and physical harm. Companies need to actively manage their online reputation and respond promptly to consumer feedback on social media, and the government should strengthen Internet regulation to protect consumer rights and interests.

The discussion in this article, during the process of data organization and analysis, is based on selected real-life cases, rather than on a large social group. Future research directions can be extended from this foundation. For instance, it is possible to delve into the specific impacts of different regulatory policies on the behaviors of various market participants, or to study how regulatory policies interact with market mechanisms to foster the healthy development of the economy. Moreover, interdisciplinary approaches can be considered to integrate theories and methods from fields such as economics, sociology, and psychology to achieve a more comprehensive research perspective. This article provides a starting point for assessing the impact of regulatory policies, but a deeper understanding of their complexity and dynamics requires further empirical research and theoretical discussion. Future research can further deepen the foundation laid here, providing more precise and effective guidance for policymakers and market participants.

References

[1] Suzana Z Gildin. Understanding the power of word-of-mouth. RAM. Revista de Administração Mackenzie, 2022, 4: 92-106.

[2] A Singh, S Jain, T Aswathinath, J Jayashree, MV Bajaj. Online Reputation Management: Strategies for Building and Protecting Brand Image. Journal of Propulsion Technology, 2023, 44(4): 4490-4497.

[3] Ma Zhengfeng, Mo Shuitai. Research on the negative impact effects and coping strategies of online word-of-mouth: based on the perspectives of gender, price, and brand cognition. Chinese market, 2010, (41): 87-88.

[4] He Xiaobing, Sun Xianyan. Competitive intelligence monitoring and control of enterprise online reputation Intelligence Data Work, 2014, (03): 94-98.

[5] Don Charlett, Ron Garland, Norman Marr. How damaging is negative word of mouth? Marketing Bulletin 2004, 6(1): 42-50.

[6] Eliot R Smith. Evil acts and malicious gossip: A multiagent model of the effects of gossip in socially distributed person perception. Personality and Social Psychology Review, 2014, 18 (4): 311-325.

[7] Feng Wenting, Yi Mengjie, Sun Hongjie. Does a good reputation make a good impression? The negative effects of luxury brand reputation and social attributes on social media Foreign Economy and Management, 2022, (01): 119-136.

[8] Han-Min Kim, Gee-Woo Bock, Hyung Su Kim. A new perspective on online malicious comments: effects of attention and neutralization. Information Technology & People, 2021, 34 (1): 50-67.

[9] Wang Desheng, Wang Jianjin. Research on the Influence Mechanism of Negative IWOM on Brand Switching Behavior: Perspective of Virtual Community Involvement. China soft science, 2013, (11): 112-112.

[10] Yu Wenbo. A review of research on the impact of negative online word-of-mouth on consumer brand switching behavior. Chinese Business Theory, 2020, (20): 19-21.