Legal regulation and amendment of pyramid selling crime cyberize

Yingyu Deng[1,a], Senze Yao[1,b], Wei Zhang[2,c,*]

[1]Law School, Guangzhou College of Commerce, Guangzhou, China
[2]Institute of Legal Psychology, Guangzhou College of Commerce, Guangzhou, China
[a]2687337806@qq.com, [b]964582731@qq.com [c]criminal.minds@foxmail.com
[*]Corresponding author

Abstract: Compared with traditional pyramid selling crimes, cyber pyramid selling crimes show stronger concealment, faster efficiency, and wider dissemination, which makes it more difficult for the police to collect evidence, easier for the economic interests of Chinese citizens to be infringed, and more difficult to recover. Because of its extremely wide range of influence, it has caused great harm to society, and has shown a trend of specialization and professionalization. At the same time, due to the concealment and transnational nature of the Internet technology, investigation work has become very difficult. For this reason, the use of traditional pyramid selling legal provisions to combat cyber pyramid selling issues has become increasingly prominent in the judicial operation process. Based on this, this study investigates and analyzes the improvement of China's criminal law regulations and amendment measures for cyber pyramid selling crimes, in order to more effectively match regulations and combat cyber pyramid selling crimes.

1. Introduction

In the early 1990s, international direct selling companies entered China. Due to limited understanding of pyramid selling and inadequate laws, this practice, disguised as "direct selling," rapidly spread across the country. Many unlawful businesses exploited this loophole, causing industry-wide disruption. Traditional pyramid selling, a form of the "Ponzi scheme," involves recruiting offline members or charging participation fees for entry, using member recruitment as a reward system, and coercing members to expand the organization. This has seriously impacted citizens' lives, becoming a significant social concern[1]. Unlike traditional methods, online pyramid selling leverages the Internet to seek profits via a chain of paying an entrance fee, recruiting others, and earning income. Criminals disguise these schemes as legitimate, high-yield investments, luring victims with rebates, fund assistance, and recruitment[2]. Online versions are more concealed, efficient, and widespread than traditional methods, making evidence gathering harder for authorities and increasing the risk of economic loss for citizens. Due to the rise of such incidents, China has embarked on a legislative cycle to address pyramid selling.

Over the past 30 years in China, the ban on pyramid selling and the establishment of related crimes were prompted by the rise and increasing harm of such activities. As the Internet rapidly developed, traditional pyramid schemes merged with it, leading to the viral spread of online pyramid selling. Within a few years, this became a major issue affecting social and economic stability[3]. Due to its wide reach and specialization, it caused significant social harm. However, investigations are challenging due to the concealed and transnational nature of the technology involved. The inadequacy of existing legal provisions in addressing online pyramid selling in judicial operations highlights the need for further improvements in China's criminal regulations and corrective measures to effectively combat these crimes.

2. Concept Definition and Literature Review

Article 224 of China's Criminal Law defines traditional pyramid selling crimes, which involve recruiting downlines, purchasing physical items for membership, and using persuasion or traditional communication to contact others. These crimes often employ collective management, and new members may experience violence, detention, and brainwashing. In contrast, new forms of pyramid selling, like online pyramid selling, use the internet to attract victims with promises of high returns, utilizing mobile payments to facilitate fund transfers and enabling cross-border crimes.

Previous research has focused on the traits, effects, and preventative strategies of pyramid selling crimes. Scholars have also proposed measures to prevent and combat online pyramid selling. Quantitative analyses revealed structural and behavioral patterns of these crimes, such as large-scale impact, flatter hierarchies, and varied operational modes. However, China's criminal justice system faces challenges in addressing these crimes due to rough legal regulations, investigation difficulties, and jurisdictional disputes[4]. Others argued that spiritual pyramid selling in the internet age is a variant of traditional pyramid selling. This new form utilizes network technology to conceal traces of crime and upgrade criminal means, presenting prominent issues such as difficulty in case discovery, nature definition, and recovery of stolen funds[5]. Dai Wanyu pointed out that current Chinese laws and regulations do not specifically address internet pyramid selling behaviors. Imperfect legislation, inadequate investigation and punishment by law enforcement and judicial authorities, and unclear understanding of internet pyramid selling crimes among various sectors of society pose significant challenges for law enforcement and judicial authorities when investigating these crimes. She proposed several recommendations to regulate internet pyramid selling crimes, focusing on legislation, investigation and punishment efforts, and social participation[6]. Others believed that legal regulations and corrective measures should be implemented in terms of crime constitution, accomplice identification, and crime quantification[7]. Moreover, Ma Zhenpeng and Li Wenji suggested that public security organs should utilize new technologies to enhance intelligence analysis, adopt new concepts to guide smart investigations, and rely on innovative methods to establish early warning mechanisms to effectively combat online pyramid selling crimes[8].

3. The Governance status quo of Pyramid selling crime cyberize

Although government departments at all levels have strengthened the network governance of pyramid schemes, China still faces some problems in cracking down on online pyramid schemes[9].

Firstly, there are some issues with the application of China's criminal law[10]. When handling ordinary network pyramid selling cases, we often encounter a lack of relevant laws and regulations to restrict participants in network pyramid selling who do not meet the criteria for criminal traceability and are only subject to administrative penalties. These individuals are usually active participants in network pyramid selling crimes. When one pyramid selling organization they participate in is banned, they will move to another and continue their activities. Although public

security and market supervision departments at all levels are actively cracking down on network pyramid selling and have severely punished a large number of suspects who organize and lead pyramid selling crimes, in most cases, only the backbone and high-level members of the pyramid selling crimes are punished. However, these individuals account for a very small proportion of the vast pyramid selling activities[11].

Secondly, network pyramid selling mainly relies on the Internet platform, and most of them involve financial and other illegal activities. However, such activities are not included in the management scope of the "One Bank and Two Commissions", resulting in a lack of effective supervision and social warning of its capital operation at the beginning of its establishment. The collaboration barrier caused by jurisdiction disputes has increased the difficulty of the investigation work of the public security department. Because network marketers are good at using "multi-layer proxy technology", they can hide domain information, virtual network addresses, and real crime locations within the jurisdiction. Although the investigative agency can obtain the Internet IP address, it cannot quickly locate the specific location of the MLM organization, resulting in a more serious situation of mutual shirking of responsibilities among local investigation teams[12].

In recent years, various government departments have attached great importance to the governance of network pyramid selling activities. However, in the process of cracking down and preventing such activities, the departments have not formed a tightly collaborative whole, resulting in poor effectiveness in managing network pyramid selling. The participation of social organizations and citizens is relatively low, and government departments have failed to integrate and rationally allocate the strengths of social organizations and citizens, neglecting the importance of their roles[13]. Through analyzing the current situation and existing problems of network pyramid selling governance, it can be seen that government departments at all levels in China are strengthening the control of network pyramid selling and have achieved some results. However, network pyramid selling has not been completely eradicated, which prompts us to reflect on the current management methods and approaches. This article will use statistical data analysis to discover its strengths and weaknesses, further explore the influencing factors of network pyramid selling penalties, delve into the causes of the problems, and explore solutions and methods based on data.

4. Research design and research methods

This article selects 100 cases of network pyramid selling, extracts the sentences and fines, and sets up models with several independent variables. Using SPSS statistical software, multiple linear regression is used to analyze the influencing factors of the networking of pyramid selling crimes. Firstly, the average sentence is used as the dependent variable, and the amount involved, the scale of the pyramid scheme, the number of defendants, and whether there are substantial products are included as independent variables in regression model 1 to explore the relationship between the average sentence and these independent variables. Secondly, the average fine is used as the dependent variable, and similarly, the amount involved, the scale of the pyramid scheme, the number of defendants, and whether there are tangible products are included as independent variables in regression model 2 to explore the relationship between the average fine and these independent variables. Subsequently, based on the multiple linear regression results in this article, detailed discussions are conducted on the significant influencing factors presented in the results, and further exploration of legal regulations and corrective measures is carried out.

5. Influencing factors of punishment of pyramid selling crime cyberize

With the prison term as the dependent variable, and the amount involved, scale of pyramid

selling, number of defendants, and whether there are substantial products as independent variables, they were incorporated into regression model 1. Prior to conducting multiple linear regression, an F-test was first performed to assess the significance of the model. As indicated in Table 1, the model passed the F-test (F=6.567, p=0.000<0.05), demonstrating that the construction of the model is meaningful.

Table 1: F test table of multiple linear regression model of prison term

	sum of squares	df	mean square	F	p
Regression	6893.732	4	1723.433	6.567	0.000
Residual	24670.021	94	262.447		
Total	31563.754	98			

Table 2: Multiple linear regression analysis table of influencing factors of prison term

	Non-standardized coefficient		Standardization coefficient	t	P	Collinear diagnosis	
	B	Standard error	Beta			VIF	tolerance
constant	21.323	2.197	-	9.707	0.000**	-	-
Amount involved	0.000	0.000	0.160	1.754	0.083	1.002	0.998
The scale of pyramid selling (person-time)	0.000	0.000	0.004	0.044	0.965	1.003	0.997
Number of defendants	2.033	0.468	0.414	4.344	0.000**	1.094	0.914
Substantial product	4.779	5.411	0.084	0.883	0.379	1.091	0.917
R^2				0.218			
adjust R^2				0.185			
F			F(4,94)=6.567,p=0.000				
D-W				2.274			
Dependent variable: prison term (month)							
*p<0.05**p<0.01							

With the prison term (months) as the dependent variable, and the amount involved, scale of pyramid selling, number of defendants, and whether there are substantial products as independent variables, they were incorporated into regression model 1 for multiple linear regression analysis. As shown in Table 2, the model formula is: Prison Term (months) = 21.323 + 0.000Amount Involved + 0.000Scale of Pyramid Selling (person-times) + 2.033Number of Defendants + 4.779Substantial

Products. The R-squared value of the model is 0.218, indicating that the Amount Involved, Scale of Pyramid Selling (person-times), Number of Defendants, and Substantial Products can explain 21.8% of the variation in Prison Term (months). The model passed the F-test (F=6.567, p=0.000<0.05), suggesting that at least one of the factors among the Amount Involved, Scale of Pyramid Selling (person-times), Number of Defendants, and Substantial Products has an impact on the Prison Term (months). Additionally, upon testing for multicollinearity in the model, it was found that all VIF values in the model are less than 5, indicating the absence of collinearity issues. Furthermore, the D-W value is close to 2, implying that the model does not exhibit autocorrelation, and there is no correlation between sample data points, indicating a good model fit. The final specific analysis is as follows,

● The regression coefficient for the amount involved is 0.000 (t=1.754, p=0.083>0.05), indicating that the amount involved does not have an impact on the prison term (months).

● The regression coefficient for the scale of pyramid selling (person-times) is 0.000 (t=0.044, p=0.965>0.05), suggesting that the scale of pyramid selling does not influence the length of the prison term.

● The regression coefficient for the number of defendants is 2.033 (t=4.344, p=0.000<0.01), implying that the number of defendants has a significant positive effect on the prison term (months).

● The regression coefficient for substantial products is 4.779 (t=0.883, p=0.379>0.05), indicating that the presence of substantial products does not affect the prison term.

Based on the summary analysis, it can be concluded that the number of defendants has a significant positive impact on the prison term (months). However, the amount involved, the scale of pyramid selling (person-times), and the presence of substantial products do not affect the prison term (months).

Table 3: F test table of multiple linear regression model of fine

	sum of squares	df	mean square	F	p
Regression	18070288494467.828	4	4517572123616.957	16.239	0.000
Residual	26150410906894.805	94	278195860711.647		
Total	44220699401362.633	98			

With fines as the dependent variable and the amount involved, the scale of pyramid selling, the number of defendants, and whether there are substantial products as independent variables, they were incorporated into regression model 2. Before conducting multiple linear regression, an F-test was performed to verify the significance of the model. According to the Table 3, the model passed the F-test (F=16.239, p=0.000<0.05), indicating that the construction of the model is meaningful.

Based on the above Table 4, a linear regression analysis was conducted with the amount involved, the scale of pyramid selling (person-times), the number of defendants, and substantial products as independent variables, and the fine as the dependent variable. The model formula is: Fine = -110,310.119 + 0.000 * Amount involved + 0.023 * Scale of pyramid selling (person-times) + 99,151.091 * Number of defendants + 464,273.518 * Substantial products. The R-squared value of the model is 0.409, indicating that the amount involved, the scale of pyramid selling (person-times), the number of defendants, and substantial products can explain 40.9% of the variation in fines. When conducting an F-test on the model, it was found to pass the F-test (F=16.239, p=0.000<0.05), indicating that at least one of the amount involved, the scale of pyramid selling (person-times), the number of defendants, and substantial products has an impact on the fine. Additionally, after testing for multicollinearity in the model, it was found that all VIF values in the model are less than 5, indicating the absence of multicollinearity. Furthermore, the D-W value is close to 2, suggesting

that the model does not exhibit autocorrelation, and there is no correlation between sample data points, indicating a good model fit. The final specific analysis is as follows

Table 4: Multiple linear regression analysis table of fine influencing factors

	Non-standardized coefficient		Standardization coefficient	t	p	Collinear diagnosis	
	B	Standard error	Beta			VIF	tolerance
constant	-110310.119	71518.624	-	-1,542	0.126	-	-
Amount involved	0.000	0.000	0.080	1.012	0.314	1.002	0.998
The scale of pyramid selling (person-time)	0.023	0.075	0.024	0.305	0.761	1.003	0.997
Number of defendants	99151.091	15234.381	0.540	6.508	0.000**	1.094	0.914
Substantial product	464273.518	176161.420	0.218	2.636	0.010**	1.091	0.917
R²			0.409				
adjust R²			0.383				
F			F(4,94)=16.239,p=0.000				
D-W			2.101				
Dependent variable: prison term (month)							
*p<0.05**p<0.01							

● The regression coefficient for the amount involved is 0.000 (t=1.012, p=0.314>0.05), indicating that the amount involved does not significantly influence the fine.

● The regression coefficient for the scale of pyramid selling (person-times) is 0.023 (t=0.305, p=0.761>0.05), suggesting that the scale of pyramid selling does not affect the fine.

● The regression coefficient for the number of defendants is 99,151.091 (t=6.508, p=0.000<0.01), implying that the number of defendants has a significant positive impact on the fine.

● The regression coefficient for substantial products is 464,273.518 (t=2.636, p=0.010<0.01), indicating that substantial products have a significant positive effect on the fine.

Based on the summary analysis, it can be concluded that the number of defendants and substantial products have a significant positive impact on fines. However, the amount involved and the scale of pyramid selling (person-times) do not affect the fines.

By combining the results of two multiple linear regression analyses, it can be seen that the main factor influencing the punishment for online pyramid selling is the number of defendants, which has a significant positive impact on both fines and prison terms. When considering fines alone, substantial products are also a significant influencing factor, but they do not affect prison terms. In

the actual penal process, significant positive influencing factors should be given important consideration. Additionally, the multiple linear regression model used in this study has formulated predictive models for estimating the prison terms and fines related to online pyramid selling based on formulas. However, due to the inability to display these models in writing, they can be used as a basis for further extended research, which will be refined and presented on a suitable platform in the future.

6. Discussion on legal regulation and amendment measures of pyramid selling crime cyberize

6.1 Positive regulation mechanism of criminal law

To improve the criminal conviction standards for the crime of network pyramid selling fraud, one solution is to conduct hierarchical reforms on the confusion and legitimate direct sales operations, and formulate highly flexible criminal conviction guidelines[14]. To evade legal accountability, network pyramid selling organizations often innovate by changing team sizes and development levels, resulting in some lag and rigidity in judicial interpretations in dealing with new pyramid selling models[15]. On the one hand, judicial interpretations with strong adaptability should be formulated in response to the evolution of new pyramid selling forms. On the other hand, strict conviction standards should be established for network pyramid selling crimes to ensure the fair application of the law[16]. The deterrent of punishment is not its cruelty, but its certainty and inevitability. This requires us to build a sound legal system in criminal legislation, accurately identify the operational core of Ponzi schemes in network pyramid selling, and severely crack down on operational methods that attempt to evade judicial recognition standards.

In terms of criminal penalties, the current criminal law only imposes a sentence of more than 5 years in prison for more serious crimes of organizing and leading pyramid selling activities, which is a relatively light sentence for mass economic crimes. For the new type of network pyramid selling with multiple legal interest infringement characteristics, the criminal law's provisions on its statutory penalty can no longer effectively regulate it. Due to the particularity, complexity, and concealment of network pyramid selling, coupled with the wide geographical scope of pyramid selling organizations, it poses a great challenge to the professional ability of investigators. The large workload forms a sharp contrast with the final verdict, which seriously affects the enthusiasm of the investigation department. To better combat and control new pyramid selling activities, criminal penalties for members of relevant pyramid selling organizations should be strengthened. From a legislative perspective, for network pyramid selling, which is related to economic security, the prison term should be extended, and the material basis for re-participating in pyramid selling activities should be reduced, so that it can better fulfill its function of punishing and preventing economic crimes.

6.2 Reverse regulation mechanism of criminal law

Establishing a Prevention Mechanism for Victims: Given the complexity of various forms of network pyramid selling, an increasing number of participants joining network pyramid selling is a significant reason why it is difficult to eradicate. While fully utilizing the criminal legal system for active regulation, it is also necessary to establish a mechanism to prevent victims of pyramid selling fraud[17]. On the one hand, various methods such as news media can be utilized to publicize information about the fraudulent techniques, regular patterns, and damaging consequences of network pyramid selling crimes, enhancing public awareness and sensitivity to new types of pyramid selling. On the other hand, with the increasing innovation and criminal activities in the internet finance industry, a large number of network pyramid selling schemes have become the

focus of social attention due to their concealment, fraud, and large-scale characteristics. We should take advantage of this to improve the financial literacy of citizens, enabling them to judge their investment behaviors based on their economic awareness.

Those involved in pyramid selling should be held criminally responsible and severely punished according to the law. Regarding the criminal regulation of pyramid selling personnel, there is a viewpoint that only organizers and leaders should bear criminal responsibility. However, this does not mean that other participants have committed no crimes. Instead, their culpability should be discussed based on the nature of their participation in pyramid selling activities. Currently, China is facing a severe situation of legal interest infringement. To better protect the country's economic security and strengthen the punishment for network pyramid selling crimes, it is necessary to make corresponding supplements and improvements to the deficiencies in existing laws[18]. We should not blindly expand the scope of criminal law interpretation due to legislative lag, overly emphasizing the infringement of criminals' rights and interests, and breaking through the defense line of legality. Therefore, active participants, in addition to organizers and leaders, should also be included in the subject of the crime. Based on the characteristics of current network pyramid selling cases and the actual situation in judicial practice, we believe that pyramid selling personnel can be classified into active participants and general participants according to their role and influence in pyramid selling. For active practitioners, we can draw on Japan's experience regarding the criminal responsibility of professional persuasion crimes[18]. As for ordinary participants, although they are suspected of developing downlines, considering the actual work pressure of the judiciary, they can only be subject to administrative penalties. This allows for effective crackdowns on pyramid selling crimes with severe circumstances, achieving a strong blow to such crimes. Implementing differentiated treatment for pyramid selling personnel with minor offenses is not only an exercise of restraint in criminal law but also an effective protection of the criminal policy of combining leniency with severity.

References

[1] Di Kechun. Exemplification and Analysis of Typical Problems of New Pyramid Selling Crimes [J]. Journal of Liaoning Police College, 2023, 25(05):23-30.

[2] Zhang Yifan. Difficulties and Countermeasures in Handling Online Pyramid Selling Crimes [J]. Network Security Technology and Application, 2022, (10):130-132.

[3] Cao Chunlong, Cao Yong. Manifestations and Judicial Determination of Online Pyramid Selling Crimes [J]. Legal Expo, 2022, (23): 65-67.

[4] Dong Haoyun, Zhang Chunli. Quantitative Characteristics and Governance Dilemmas of Online Pyramid Selling Crimes - Based on Verdicts from 2012-2021. Scientific Decision, 2022, (06): 97-112.

[5] Jiao Sijia, Sun Ziqiang, Liu Dan, Li Li. Identification and Investigation of Spiritual Pyramid Selling Crimes in the Internet Age. Journal of Yunnan Police Officer Academy, 2021, (06): 84-90.

[6] Dai Wanyu. Research on the Prevention and Treatment of Internet Pyramid Selling Crimes. Hunan Normal University, 2021.

[7] He Lanbo. Research on the Judicial Determination of Online Pyramid Selling Crimes. Southeast University, 2020.

[8] Ma Zhenpeng, Li Wenji. Characteristics and Governance of Online Pyramid Selling Crimes. Journal of Shaoguan University, 2019, 40(10): 40-43.

[9] Zhang Ruiling. "The governance dilemma and prevention and control of network pyramid selling crimes in the era of 'Internet +'" [J]. China New Telecommunications, 2022, 24 (24): 117-119.

[10] Zhang Fenghu, Zhang Dexu. Analysis and Interpretation of Legal Application Issues in Network Pyramid Selling Crimes [J]. Legal Expo, 2022, (26): 81-83.

[11] Zhang Yu. Analysis of New Network Pyramid Selling Crimes and Investigation Countermeasures [J]. Science and Technology Vision, 2017.

[12] Jiang Min, Yang Wei, Wang Chao. Network MLM Crime and Its Prevention Countermeasures [J]. Journal of Shanghai Public Security College, 2020, 30 (06): 20-25.

[13] Ming Leqi. Analysis of the Causes of Network Pyramid Selling Crime and Prevention Countermeasures from the Perspective of Victimology [J]. Police Science Research, 2019, (01): 68-78.

[14] Liu Hong, Wang Yu, Li Zhiyu, Zhang Ga, Wang Wen. Research and Practice of Knowledge Representation Technology in Network Marketing Supervision [J]. Electronic Technology & Software Engineering, 2023, (01): 1-6.

[15] Shen Xueke, Tao Yi. Research on the Judicial Determination of Network Pyramid Selling Crimes [J]. Legal Expo, 2019, (22): 56-57.

[16] Mo Zhiqiang, Zhang Ting. Research on the Identification and Punishment Standards of Network Pyramid Selling Crimes [J]. Journal of Shandong Police College, 2020, 32(02): 48-55.

[17] Huang Yixiang, Wang Ronggang. Research on the Crime Model and Investigation Countermeasures of Using Virtual Currency for Pyramid Selling [J]. Network Security Technology and Application, 2023, (07): 152-154.

[18] Zhang Xueyong, Li Chunhua. Research on the Criminal Regulation of Network Pyramid Selling [J]. Journal of the People's Public Security University of China (Social Science Edition), 2019, 33(05): 79-88.

[19] Xiong Wenbang. Japan's Legal Regulation of Illegal Pyramid Selling and Its Enlightenment [J]. Political Science and Law Journal, 2019, 36(05): 92-99.