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# Research on P2P Online Loan Platform to Enhance Competitive Strategy

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## Abstract

In recent years, the rapid development of the P2P online lending platform has been accompanied by various problems and risks. With the strengthening of the supervision of government departments, more and more platform transformation, platform consolidation, platform exit and other phenomena have appeared in the industry. Therefore, the survival and development of the platform is particularly important. Improving platform competitiveness is the key to the survival and development of the platform, this paper analyzes the factors affecting the competitiveness of the platform based on factor analysis theory, and proposes suggestions for improving platform competitiveness.

## Keywords

P2P online lending platform; factor analysis; platform competitiveness.

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## 1. Introduction

As one of the Internet finances, P2P network lending has the advantages of low barriers to entry, low transaction costs, wide participation and high transaction efficiency. With the advancement of network technology, the rapid growth of social capital, the popularization of financial innovation, and the development of the lending market, The P2P online lending industry has developed very rapidly in recent years. Relevant regulatory authorities are also gradually establishing and improving regulatory policies to implement legal supervision and institutional supervision of the industry. The rapid development of the platform is accompanied by a variety of problems and risks. How to prevent risks and maintain healthy operation is also the focus of the platform. This paper will study the factors affecting the competitiveness of the platform through factor analysis methods, and provide reference for the sustainable development of the platform.

## 2. Development Status of P2P Online Loan Platform

In 2007, China set up the first P2P network lending platform, which was a pat on loan. At that time, P2P online lending was a new thing and was not familiar to the public. With the rapid development of the national economy and technology, the P2P online lending platform began to enter the public eye in 2011. By 2013, the P2P online lending platform industry has been defined as one of the hottest Internet finances. From 2013 to 2015, P2P developed rapidly, and new platforms were added every day. The transaction volume increased and the number and scale of platforms increased. As of the end of December 2015, the number of normal operations of China's P2P online lending platform reached 2,448, and the industry competition was fierce. However, it is precisely because of the rapid development of new things, and the corresponding lack of supervision, the market has no threshold, so many problems frequently occur, and broke out completely in 2016. Frequent problems such as redemption crisis, platform failure, money-carrying, and illegal fund-raising have led to a crisis in platform development. In 2016, the number of closed and problem platforms reached 1,741. The

problems of wealth companies under the line, down payment loans, and campus loans have also seriously affected the development of the P2P online lending industry. In 2015, the country began to manage the industry and introduced a number of methods and programs. In 2016 and 2017, the number of normal operating platforms throughout the year has been declining. At the end of 2016, there were 985 fewer than the end of 2015, and by the end of 2017, there were 517 fewer than the end of 2016. In view of the fact that the industry platform rectification is still in progress, it is expected that the number of normal operating platforms in the industry will decline in 2018. The number of normal operating platforms and the number of problem platforms in the P2P network lending industry in recent years are shown in Fig. 1 and Fig. 2.

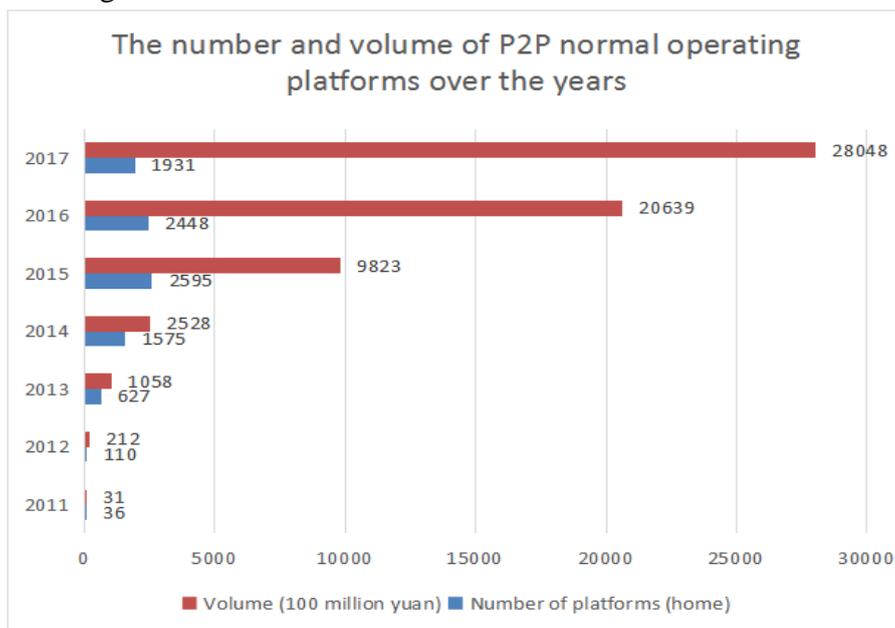


Fig. 1 The number and volume of P2P normal operating platforms over the years

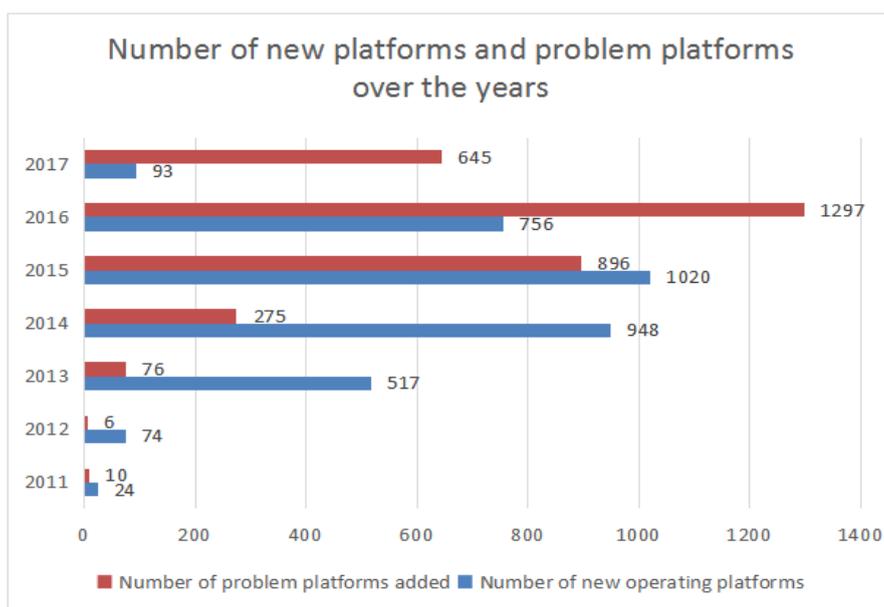


Fig. 2 Number of new platforms and problem platforms over the years

China's supervision is divided by industry, and the P2P industry has experienced a long period of unregulated status. Until the end of 2015, the state issued the "Opinion Draft", which determined that the CBRC was the main body of the industry supervision, and the public security department was the supervisory authority, which restricted its business scope. The government's supervision of P2P has

been carried out and improved, and a number of programs and methods have been introduced. The borrowing limit, filing system, bank depository and risk reserve, and guarantee institutions all have high requirements for the P2P industry. Since 2017, the development speed of the whole industry has gradually slowed down, and the problem platforms have closed down and left the market one after another. The number of platforms for normal operation has stabilized. From the perspective of industry development trends, China's P2P network lending platform industry is still a long way from the oligopoly of the mature P2P industry in the United States, but now the industry is gradually concentrated and the Matthew effect is gradually strengthened.

At the beginning of 2018, the P2P online lending platform needed to complete the filing and rectify the sprint of the qualified acceptance. The whole industry is in a state of tension and anxiety. The industry platform is subject to external supervision and also needs to improve the internal management of the platform. The platform needs to change from the previous extensive and even illegal development to intensive and healthy development. Therefore, it is especially important to improve the competitiveness strategy of the P2P network lending platform.

### 3. Literature review

At present, there are many methods for the research on the competitiveness of P2P network lending platforms in China: Yan Zhang (2015) uses the “diamond model” to analyze the competitiveness of P2P platform in Jiangsu Province, and proposes to increase the input production factors and cooperate with related enterprises to develop development proposals<sup>[1]</sup>. Haifeng Guo(2015) obtained the regional distribution of platform strength by factor analysis method, which is “central collapse”. The profitability of the platform is particularly important, and it can enhance competitiveness through mixed operation<sup>[2]</sup>. Caiyi Lin (2015) proposed that the future core competitiveness of the platform should be the asset-side risk pricing ability through the platform data chart and development analysis<sup>[3]</sup>. Nan Xu(2016) improved the quadrant model to build the platform's “importance-competitiveness” diagnostic model and analyze the platform's competitive advantage<sup>[4]</sup>. Yiheng Xie (2017) builds a competitive evaluation system based on the theory of set pair analysis from the three dimensions of environment, resources and capability, and draws the ability to strengthen risk control and sustainable development by ranking the lower platform<sup>[5]</sup>. Zhenghua Zhan(2017) used the AHP and the entropy method to analyze the resources and capabilities of the platform, and empirically evaluated the platform competitiveness from four aspects: platform marketing, profitability, risk control and development potential<sup>[6]</sup>. Xing Li(2017) draws on the principle of balanced scorecard and constructs a BP neural network prediction model to predict platform competitiveness<sup>[7]</sup>. Yang Mei (2017) uses the multi-attribute decision-making TOPSIS evaluation method based on triangular intuitionistic fuzzy numbers to rank the five types of platform background classification<sup>[8]</sup>.

Based on a large amount of reading literature, this paper combines the previous research experience, using factor analysis methods, and the actual data of the platform in February 2018 to study the platform competitiveness, and provide suggestions for the platform to improve its competitiveness and future sustainable development.

### 4. Research methods and variable selection

#### 4.1 Research methods

The factor analysis method is a multivariate statistical analysis method that classifies some variables with intricate relationships into a few comprehensive factors from the related dependencies within the research variables. The core of the factor analysis method is to analyze the factors of a number of comprehensive indicators and extract the common factors, and then construct the score function by using the variance contribution rate of each factor as the sum of the weight and the score multiplier of

the factor. It is necessary to construct a factor variable and then use the rotation method to make the factor variable more interpretable.

#### 4.2 4.2 Data survey

The data of this article is obtained by the author from the online loan home, and the official website of each online loan platform. The online loan home are the authoritative third-party P2P online loan financing industry comprehensive portal, providing real-time and Comprehensive online loan information and online loan platform data. Considering the effectiveness, availability, representativeness and completeness of the data, the author selected 20 online loan platforms with high activity and large transaction volume from the top 100 households in the development index for data processing. These data are taken from the sample platform data of February 2018. The 20 sample online loan platforms are Lujinfu Loan Platform (LJF), Honglingchuangtou Loan Platform (HLCT), Youliwang Loan Platform (YLW), Paipaidai Loan Platform (PPD), Yirendai Loan Platform (YRD), PPMoney Loan Platform (PPM), Weidaiwang Loan Platform (WDW), Kaixindai Loan Platform (KXD), Yidaiwang Loan Platform (YDW), Tounawang Loan Platform (TNW), Xiaoyinwangjin Loan Platform (XYWJ), Yilongdai Loan Platform (YLD), Xiaoniuzaixian Loan Platform (XNZX), Niwodai Loan Platform (NWD), Aiqianjin Loan Platform (AQJ), Tuandaiwang Loan Platform (TDW), Jimuhezi Loan Platform (JMHZ), Kesujinrong Loan Platform (KSJR), Dianrongwang Loan Platform (DRW).

#### 4.3 Selection of indicators

This paper refers to the research report that has been obtained in the P2P industry, and has consulted a large number of relevant literatures. The nine indicators with the highest correlation are selected from the 18 indicators. The indicators are shown in Table 1.

Table 1 Indicator variables and definitions

variable	Variable definitions
X1 Repayment pressure	Indicates the repayment pressure assumed by the online lending platform in the last quarter. The greater the value, the greater the repayment pressure. Calculated as (the total amount to be repaid in the past 3 months / the total amount to be repaid in the past 1 year) <sup>2</sup> .
X2 Interest rate	Indicates the average comprehensive interest rate of the online lending platform for a certain period of time.
X3 Security	Indicates the security factor of the online lending platform, through the background of the platform (whether it is state-owned background, bank background, association background, venture capital background), platform protection (whether fund custody, whether to extract risk-based principal, whether there is The guarantee institution, whether there is a bid guarantee), these indicators are weighted and averaged.
X4 Average borrowing period	Indicates the weighted average of the total amount of transactions that the online lending platform has completed based on the volume of the transaction for a certain period of time.
X5 Volume	Indicates the total amount of the online loan platform issued by the borrower and the transaction in a certain period of time, in units of 10,000 yuan.
X6 Registered capital	It means that the online loan platform is registered in the industrial and commercial enterprise registration authority according to law, and the unit is 10,000 yuan.
X7 Operating time	Indicates the time when the online loan platform is up and running from the launch of its platform to February 2018, in units of monthly.
X8 Investor	The number of people who have invested in the online lending platform during a certain period of time.
X9 Borrower	The number of people who have borrowed from the online lending platform for a certain period of time.

#### 4.4 Data description statistics

The raw data is initially processed and the data is normalized to prepare for the next factor analysis. The standardization process requires the maximum, minimum, average, and standard deviation of each indicator data. The specific results are shown in Table 2.

Table 2 Descriptive statistics

variable	Minimum value	Maximum value	Mean	Standard deviation
Repayment pressure	2.40	28.79	11.1920	6.71142
Interest rate	6.89	15.15	9.8940	1.95659
Security	0.18	3.27	1.3820	0.99507
Average borrowing period	1.69	33.73	15.3740	10.54218
Volume	922.55	1641873.12	351846.9310	373179.12120
Registered capital	3000.00	20000.00	10896.8000	4922.31226
Operating time	42.00	130.00	69.5500	21.79202
Investor	8.00	662627.00	138835.7000	154430.49230
Borrower	1.00	1008181.00	182675.3000	263593.13400

### 5. Results and analysis

#### 5.1 Preliminary analysis of data

KMO test: Whether the selected data indicators can be factor analysis requires Kaiser-Meyer-Olkin sampling test, which is obtained by simple correlation coefficient and partial correlation coefficient between variables. The value of KMO is between 0 and 1, and the larger the KMO value, the stronger the correlation between the selected variables. When the KMO value is greater than 0.5, it indicates that there is a correlation between the variables, and factor analysis can be performed. The KMO value of the original variable in this paper is 0.736, which is greater than 0.7, so factor analysis can be done.

Bartlett test: Bartlett tests whether the correlation matrix of the selected variables is an identity matrix and judges the independence of the variables. If the value of the significance test is less than 0.01, the factor analysis can be performed to reject the null hypothesis; if the value of the significance test is greater than 0.01, the null hypothesis is accepted and the factor analysis cannot be performed. The test results obtained the significance of the variable selected in this paper is 0.000, which is suitable for factor analysis.

#### 5.2 Factor analysis

The common factor can be extracted by the main variance interpretation, and the common factor number is obtained according to the cumulative contribution rate of the factor. From the results in Table 3, we can propose three factors ( $F_1$ ,  $F_2$ ,  $F_3$ ) in this paper.

Table 3 Total variance interpretation

Ingredients	Initial eigenvalue		Extract the sum of squared loads	
	total	Cumulative contribution rate/%	total	Cumulative contribution rate/%
1	3.418	37.974	3.418	37.974
2	1.855	58.581	1.855	58.581
3	1.297	72.998	1.297	72.998
4	0.850	82.439		
5	0.556	88.617		
6	0.506	94.239		
7	0.240	96.902		

8	0.186	98.970		
9	0.093	100.000		

After principal component analysis, the weights of the variables are determined by the scores of the factors in the component score coefficient matrix. The score results are shown in Table 4.

Table 4 Component score coefficient matrix

variable	ingredient		
	1	2	3
Repayment pressure	0.247	-0.073	0.299
interest rate	0.005	0.404	-0.157
Security	0.309	-0.052	-0.048
average borrowing period	0.290	-0.002	-0.091
Volume	0.071	0.080	0.425
registered capital	0.061	0.122	-0.628
operating time	-0.172	0.407	0.132
Investor	0.251	-0.038	-0.033
borrowings	-0.009	0.421	-0.073

**5.3 Factor interpretation and analysis**

According to the proportion of the original variables in the extracted common factors, the variables can be sorted and summarized: Factor 1 is the platform safety factor. Factor 2 is the borrower factor and factor 3 is the platform operational factor. The platform total score formula is:

$$T = \frac{\alpha_1 F_1 + \alpha_2 F_2 + \alpha_3 F_3}{\beta}$$

Among them,  $\alpha_1, \alpha_2, \alpha_3$  are the contribution rates of each factor, and  $\beta$  is the total contribution rate of the three factors. The scores of the corresponding factors and the total scores of the 20 platforms in this paper are shown in Table 5.

Table 5 Platform score and ranking

Platform	Factor 1	Factor 2	Factor 3	Total score	Ranking
LJF	2.02790	0.86004	1.92523	1.68	1
HLCT	-1.27240	0.32377	1.65380	-0.24	2
YLW	0.33777	-0.27607	0.70600	0.24	3
PPD	-1.13421	3.60303	-0.15779	0.40	4
RRD	0.87032	0.07448	-0.10208	0.45	5
YRD	1.66236	-0.43163	1.35554	1.01	6
PPM	-0.33870	0.04448	-0.61244	-0.28	7
WDW	-0.84228	-0.31429	0.19340	-0.49	8
KXD	-0.59494	-0.94566	-0.72701	-0.72	9
YDW	-0.92030	-0.42157	-0.24902	-0.65	10
TNW	-0.39706	-0.39806	-0.05830	-0.33	11
XYWJ	-0.25811	-1.03396	0.39325	-0.35	12
YLD	-0.47396	-0.15099	0.04481	-0.28	13
XNZX	-0.63932	-0.43723	0.00967	-0.45	14
NWD	-0.01075	0.68670	0.18861	0.23	15
AQJ	2.14141	0.24450	-1.49675	0.89	16
TDW	-0.08979	-0.36641	-0.20837	-0.19	17

JMHZ	0.17978	-0.49269	-1.45016	-0.33	18
KSJR	-0.75935	-1.06570	0.63930	-0.57	19
DRW	0.51164	0.49727	-2.04770	0.00	20

The top ranked platform in Table 5 is also a very active and highly praised platform in the online loan home, which proves the rationality of this research. Therefore, in the first aspect, the core competitiveness of the online lending platform should focus on the platform security issue, that is, the platform's risk control capability. The second aspect of the platform also needs to focus on the borrower side, through innovative products to meet the diverse needs of customers and attract more borrowers. When considering the operation of the platform, the third aspect should not only pay attention to the volume of transactions, but also pay attention to the liquidity of funds.

## 6. Conclusion

The research results of this paper combined with the current development status of the platform can be concluded that the key to the survival and development of the platform is whether it can achieve differentiated competitive advantages in terms of risk control. The P2P platform is a high-risk investment model, so the platform can enhance competitiveness from the following aspects.

(1) Borrower : Strictly review the borrower's credit and qualifications, increase the cost of borrowing default, give timely rewards, reduce the default rate; promote user communication, enhance user attraction by establishing user discussion groups, forums, blogs, etc. Actively innovate and develop differentiated products, diversified products, and launch a variety of quotas to meet the diverse needs of users and attract more users.

(2) Investor: Encourage investors to diversify investment and reduce investment risks; strengthen information disclosure under the premise of ensuring privacy, and disclose information such as borrower default history, platform operation, and default data to investors, avoiding blind investment and high-risk investment.

(3) Platform : It is possible to introduce high-end risk control talents, improve risk response capability, and win investor credit and brand reputation; platform operation management should not only focus on transaction volume, but also pay attention to capital liquidity. While paying attention to improving the benefits of the platform, we cannot ignore the potential funding problems. Technical aspects can improve network technology, increase transaction security, back up necessary data, apply firewall technology and blockchain technology in the system, increase computer network security management, reduce the chance of being attacked by hackers, and protect user privacy information. Actively obtain user feedback and reduce information asymmetry.

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