

Research on the Factors Affecting the Competitiveness of P2P Online Loan Platform

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ABSTRACT. Strict supervision has accelerated the reshuffle of China's P2P online lending industry. The compliant platform is also facing increasingly fierce market competition. It is important to promote platform compliance development by analyzing the influencing factors of platform competitiveness and seeking the core advantages of platform competition. According to the data of 204 representative online loan platforms in China which are randomly selected, based on the factor analysis method, this paper studies the factors affecting platform competitiveness to analyze and judge the core advantages of P2P lending platform. The study found that the P2P online lending platform with competitive advantage is outstanding in terms of volume, operation time, number of investors, and payment balance, while brand influence and security are crucial for platform competition, and regional distribution also has impact on platform competition. The impact is that the eastern economically developed regions have relatively stronger competitiveness.

1. INTRODUCTION

P2P network loan has developed rapidly in recent years, which not only reduces the transaction costs of both borrowers and borrowers, provides lending facilities, and matches the capital needs of small and medium-sized enterprises and individuals, but also leads to the financial risks that are widely concerned by the market. As a new product of the rapid development of information technology, although the domestic P2P development is also located in the information intermediary, but in practice, it has deviated greatly from this positioning. The development of the domestic P2P network loan platform is more similar to the credit intermediary, in order to obtain benefits as the main focus. The excessive growth of the number of P2P network loan platforms often deviates from the correct path, ignoring the issues that should have been paid attention to. For example, the technical foundation of the pre-construction of the platform, the security measures of the website and the huge database should be implemented; information authentication verification of major online loan participants (lender and borrower). The above problems all come from the platform itself, as one of the main participants of the platform lender, the quality of the platform itself will be the first choice for lenders to choose the platform. The core competitiveness of P2P network loan platform should not only pay attention to the various elements of the platform itself, but also can not ignore a series of risks that P2P network loan platform will face in the process of development, such as credit risk, platform investment risk, market risk, liquidity risk, reputation risk and legal and regulatory risk^{[1][2]}. The sustainable development of P2P network loan platform needs to be improved in the core competitiveness. So, what is the competitiveness of the platform? In other words, which platforms are more trustworthy in the market? Furthermore, what are the influencing factors of platform competitiveness? From the perspective of improving the competitiveness of the platform, taking 204 P2P lending platforms in China as samples, this paper selects several indicators that affect the competitiveness of the platform for analysis and evaluation, and attempts to construct an index system of factors affecting the competitiveness of online lending platform. on

the basis of the comprehensive competitiveness ranking obtained from the evaluation system, this paper makes an in-depth analysis. This paper discusses the key factors that affect the lending competitiveness of P2P network and the impact of region on the development of P2P platform. Through these studies, I hope to provide some suggestions for the development of the platform itself, the healthy growth of the industry, and the risk reduction of lenders or investors.

2. Construction of Index System For Influencing Factors of P2P Network Lending Platform Competitiveness

How to evaluate the competitiveness of P2P network loan platform? The common competitiveness evaluation methods are factor analysis, fuzzy comprehensive evaluation, analytic hierarchy process(AHP),artificial Neural Network(ANN)and factor analysis. Among these method, factor analysis ^[3] is used by many scholars on the premise that it can simplify the original variables to several comprehensive variables and effectively solve the problem of multiple collinearity with the premise of the least loss of information. In the existing research, Guo Haifeng and Chen Xiao (2015) also used factor analysis to analyze the competitiveness of P2P network lending platform in China. Due to the short development time of P2P lending platform, a clear and unified index evaluation system has not been found in the existing research. This paper refers to the existing literature on P2P competitiveness research. From the four dimensions of transaction scale, capital dispersion, operating capacity and risk tolerance involved in P2P platform, 22 indexes are selected, such as transaction volume(10000 yuan), per capita investment amount (10000 yuan), average loan period (month), net capital inflow (10000 yuan), average reference rate of return (%), outstanding balance (10000 yuan) and so on. The competitiveness analysis of a platform includes some quantitative indicators, these data can be queried in the online loan house (www.wdzj.com) and the official website of the platform, but the competitiveness covers a wide range, and some qualitative indicators will also affect the overall competitiveness of P2P platform. On the basis of existing scholars' research, this paper uses these qualitative indicators for more comprehensive analysis.

3. Empirical Analysis

3.1. Data Sources

In this paper, we collect data through online and offline multi-channel. The time node for the collected data is as of February 2019. Online data sources are mainly the largest and most authoritative third-party information platform in the online lending industry-www.wdzj.com. Some of the missing data are collected through the platform website, third-party websites such as the first online loan (www.p2p001.com) and so on.

Due to the late and rapid development of P2P lending platform, so far there is not a formal evaluation platform for data mining, limited by the timeliness of data and China's P2P network loan industry began to comply after 2018. The subsequent data analysis is more persuasive for the competitiveness of the platform, so this paper uses the monthly data from June 2018 to February 2019. Due to the change of monthly platform, the online loan house shows different platforms. After data processing and processing, 204 P2P online loan platforms are finally determined for data analysis. The number of these 204 platforms accounts for 80% of the latest online loan home announcement platform. The platform background involves the state-owned assets department, the bank department, the listed department, the private department and the venture capital department, covering a wide range. The registered areas of the platform include not only the first-tier developed cities, such as Beijing, Shanghai and Guangzhou, but also the more developed and underdeveloped areas, including different regions of economic development in China.

In the following, we take the data of 204 P2P network lending platform as an example to analyze the factors affecting the competitiveness of the platform, and use SPSS 23 to process the data. The specific steps are as follows:

3.2. KMO test and Bartlett test results

Before the factor analysis, we must first carry on the KMO sampling appropriateness and the Bartlett spherical test, in order to judge whether the selected sample data index is suitable to adopt the factor analysis. Results as shown in Table 1 the statistical value of KMO was $0.532 > 0.5$. The chi-square value of sphericity test was 1649.417 and the significant level was 0.000 less than that of significant level (0.1). Therefore, according to the metrics given by Kaiser, it can be considered that the original data is suitable for factor analysis.

Table 1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.532
Bartlett's Test of Sphericity	Approx. Chi-Square	1649.417
	df	231
	Sig.	.000

3.3. Variable commonality

The common degree of variables represents the degree to which the original information contained in each variable can be explained by the common factor that can be extracted. As shown in Table 2, it can be seen that most of the indicators have a common degree of more than 70%, which can be explained by factors, and the variable loses less information. Therefore, the ability of these common factors to explain the variables is relatively strong, and the overall effect of factor extraction is ideal.

Table 2. Communalities

	Initial	Extraction
x1	1.000	.919
x2	1.000	.672
x3	1.000	.817
x4	1.000	.598
x5	1.000	.680
x6	1.000	.589
x7	1.000	.801
x8	1.000	.775
x9	1.000	.724
x10	1.000	.886
x11	1.000	.858
x12	1.000	.688
x13	1.000	.719
x14	1.000	.649
x15	1.000	.430
x16	1.000	.651
x17	1.000	.631
x18	1.000	.593
x19	1.000	.685
x20	1.000	.745
x21	1.000	.679
x22	1.000	.607

Extraction Method: Principal Component Analysis.

3.4. Total variance explained

As can be seen from Table 3, according to the principle that the eigenvalue is greater than 1, the first nine principal components are extracted as principal components, and the cumulative

contribution rate of the first nine principal components is 69.986%. Thus it can be seen that the selection of the first nine principal components is enough to replace the original variables, which can better reflect the variation of each index of the competitiveness of the online loan platform.

Table 3. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	% of			% of			% of		
	Total	Variance	Cumulative %	Total	Variance	Cumulative %	Total	Variance	Cumulative %
1	4.268	19.402	19.402	4.268	19.402	19.402	2.876	13.071	13.071
2	2.004	9.108	28.509	2.004	9.108	28.509	2.473	11.239	24.310
3	1.717	7.803	36.312	1.717	7.803	36.312	1.699	7.722	32.032
4	1.487	6.758	43.070	1.487	6.758	43.070	1.503	6.833	38.864
5	1.363	6.196	49.266	1.363	6.196	49.266	1.468	6.674	45.539
6	1.293	5.876	55.142	1.293	5.876	55.142	1.462	6.645	52.183
7	1.168	5.310	60.452	1.168	5.310	60.452	1.400	6.363	58.546
8	1.076	4.892	65.344	1.076	4.892	65.344	1.321	6.005	64.551
9	1.021	4.642	69.986	1.021	4.642	69.986	1.196	5.435	69.986
10	.929	4.222	74.208						
11	.827	3.757	77.966						
12	.759	3.449	81.415						
13	.696	3.165	84.580						
14	.655	2.978	87.558						
15	.614	2.792	90.350						
16	.535	2.431	92.781						
17	.524	2.383	95.164						
18	.402	1.827	96.991						
19	.271	1.233	98.224						
20	.252	1.148	99.371						
21	.107	.484	99.856						
22	.032	.144	100.000						

Extraction Method: Principal Component Analysis.

3.5. Rotated component matrix

The orthogonal rotation of the factor load matrix is carried out by using the maximum variance method to make the factor have the explanation of naming. The results are shown in Table 4, from which we can see that the balance to be repaid, the number of investments, trading volume and operating time have a higher load in factor 1, all of which are related to the overall operation of the platform, which can be called operational capability. The target number of loans, the net inflow of funds and the number of borrowers have a large load in factor 2, which can be called brand strength. When the full standard is used and the proportion of the outstanding amount of the top 10 borrowers has a larger load in factor 3, it can be called borrower credit. Whether there is a guarantee agency, whether there is a bid guarantee and whether there is a fund trust have a larger load in factor 4, which can be called security. The registered area and the loan period have a large load in factor 5, which can be called regional advantage. The average reference rate of return, platform background and whether or not to join the China Internet Finance Association have a large load in factor 6, which can be called macroeconomic strength. Per capita loan amount occupies a factor of 7. The per capita investment amount and the proportion of the top 10 investors to be collected have a large load in factor 8, which can be called investor preference. Whether there is a risk reserve and registered capital has a large load in factor 9, which can be called financial strength.

Table 4. Rotated Component Matrix

	Component								
	1	2	3	4	5	6	7	8	9
x7	.881	.007	.049	.014	.069	.055	-.116	-.033	-.001
x11	.846	.326	-.123	.016	.143	.015	-.001	-.004	-.023
x1	.844	.415	-.099	-.047	.054	.095	.059	-.019	.077
x12	.513	-.211	-.406	.011	.021	.037	.444	.126	-.027
x10	.200	.901	-.087	.028	.109	-.011	-.026	.106	-.043
x5	-.003	.813	-.020	-.062	.046	.077	.084	-.026	-.005
x13	.335	.759	-.023	-.006	.018	-.023	-.147	-.086	.015
x14	-.045	-.087	.774	.073	.128	.037	.054	-.062	-.099
x9	-.083	-.046	.665	-.198	-.269	-.082	.368	.103	-.092
x20	-.032	.059	-.083	.765	-.211	-.069	.183	.068	-.247
x19	.068	-.193	.083	.667	.048	.007	.077	-.167	.394
x18	-.043	.027	-.053	.534	.235	.177	-.459	.017	.071
x16	.049	.071	.077	-.075	.790	-.011	.080	.011	.032
x4	.287	.121	-.229	.098	.570	-.136	-.289	.059	-.097
x6	-.027	.060	-.055	.115	.102	-.715	-.102	.017	-.191
x17	-.008	.099	-.012	.236	-.061	.712	-.165	-.070	-.148
x22	.285	.073	-.231	-.129	.354	.548	.070	.135	-.038
x2	-.053	.020	.178	.150	.047	.030	.780	-.039	-.033
x3	.024	.025	-.087	-.010	.138	.026	.005	.888	.017
x8	-.157	-.096	.505	-.088	-.293	-.178	-.043	.598	.042
x21	-.104	-.007	-.171	-.029	.083	-.056	.027	-.069	.789
x15	.186	.017	.034	.064	-.180	.154	-.157	.242	.501

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

3.6. Factor score and empirical results

The matrix of each component score coefficient is shown in Table 5. After establishing the factor analysis theory factor model in the multivariate statistical analysis^[4] complied by He Xiaogun scholar, we want to know the competitiveness ranking of each platform. First of all, it is necessary to calculate the factor score, that is, using the idea of regression to equation in which the following common factors are dependent variables and the original variables are independent variables:

$$F_j = \beta_{j1}X_1 + \beta_{j2}X_2 + \dots + \beta_{jp}X_p, j = 1, 2, \dots, m \quad (3.1)$$

According to the formula 3.1 and component coefficient matrix in Table 6, the score of the common factor can be obtained, when the factor score is obtained by the operation of SPSS software. For example, the specific expression of the score of the first public factor in this paper is as follows:

$F_1 = 0.295 * X_1 - 0.064 * X_2 - 0.049 * X_3 + 0.050 * X_4 - 0.150 * X_5 + 0.020 * X_6 + 0.411 * X_7 + 0.034 * X_8 + 0.061 * X_9 - 0.076 * X_{10} + 0.309 * X_{11} + 0.185 * X_{12} + 0.042 * X_{13} + 0.071 * X_{14} + 0.090 * X_{15} - 0.075 * X_{16} - 0.049 * X_{17} - 0.042 * X_{18} + 0.058 * X_{19} - 0.016 * X_{20} - 0.089 * X_{21} + 0.06 * X_{22}$. And F_1 score expression can deduce the score of the other eight common factors.

Table 5. Component Score Coefficient Matrix

	1	2	3	4	5	6	7	8	9
x1	.295	.070	.047	-.027	-.080	-.001	.036	-.031	.070
x2	-.064	.072	.049	.145	.140	.036	.596	-.012	.032
x3	-.049	.007	-.096	.052	.112	.031	.046	.694	-.001
x4	.050	-.038	-.028	.061	.357	-.133	-.156	.063	-.099
x5	-.150	.399	-.006	-.018	.001	.050	.122	-.014	.048
x6	.020	.019	-.053	.104	.068	-.508	-.071	.013	-.138
x7	.411	-.150	.169	.002	-.051	-.024	-.146	-.054	-.023
x8	.034	.000	.257	.001	-.131	-.078	-.104	.417	.057
x9	.061	.026	.360	-.082	-.077	-.006	.173	.027	-.015
x10	-.076	.400	-.018	.050	.008	-.031	.047	.090	.008

x11	.309	.014	.040	.015	-.016	-.057	-.009	-.014	-.023
x12	.185	-.164	-.281	.014	-.042	-.015	.342	.118	-.048
x13	.042	.307	.058	.005	-.079	-.051	-.082	-.074	.045
x14	.071	-.033	.556	.078	.218	.060	-.037	-.085	-.037
x15	.090	.010	.064	.040	-.161	.079	-.112	.173	.405
x16	-.075	-.005	.158	-.037	.639	-.014	.129	.014	.059
x17	-.049	.034	.033	.128	-.080	.503	-.115	-.023	-.168
x18	-.042	-.003	.071	.336	.142	.098	-.288	.054	.019
x19	.058	-.059	.126	.439	.067	-.039	.092	-.095	.328
x20	-.016	.065	-.103	.540	-.160	-.061	.158	.114	-.217
x21	-.089	.056	-.075	-.041	.073	-.075	.100	-.052	.677
x22	.006	-.035	-.083	-.099	.217	.368	.099	.124	-.061

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Component Scores.

Taking the contribution rate of each factor as the weight to calculate the competitiveness evaluation score of each network loan platform, the formula is as follows:

$$F = (19.402 * F1 + 9.108 * F2 + 7.803 * F3 + 6.758 * F4 + 6.196 * F5 + 5.876 * F6 + 5.310 * F7 + 4.892 * F8 + 4.642 * F9) / 69.986$$

Through the above calculation, we can get the factor score, comprehensive evaluation score and ranking of P2P lending platform.

4. CONCLUSION AND SUGGESTION

Through the above factor analysis, we can see that the factors affecting the competitiveness of P2P network loan platform are related to all aspects. Among the nine factors extracted, the most competitive is the operating capability of a platform, which can be reflected through the trading volume, operating time, number of investors and outstanding balance of the platform. The longer the operating time, the more experienced the platform is, which can easily deal with the unexpected situation of the platform, so as to attract more investors and keep the platform in the state of capital flow for a long time. The second is the brand influence of the platform, that is, the visibility of the platform. In comparison, people are more likely to agree with the choices of most people, and the platform with strong brand influence has a stronger competitive advantage. In the borrower credit factor, the more information of the borrower, the lower the default rate, which also protects the interests of the lender. In addition, whether the P2P platform has capital hosting, whether there is bidding protection, whether there is a guarantee agency have become important factors for investors to choose the platform, the more comprehensive these guarantees, the more willing investors are to invest in these platforms. And our research finds that the platform background has a great impact on the competitiveness of the platform, the state-owned assets department, the banking department and the listed department platform often rank high, these platforms have high credit and low risk for investors, while the private department and venture capital department platforms are at a disadvantage compared with the above platforms.

Based on the above analysis, we believe that P2P lending platforms must have core competitive advantages in order to achieve long-term development. Therefore, (1) in terms of platform supervision, in order to avoid the phenomenon of platform "running away"^[5], it is necessary for the platform itself and social regulators to supervise at the same time, constantly improve the development norms of the Internet financial industry, and strengthen the strict mechanism of the establishment of P2P platforms and the norms of enterprise behavior of existing platforms. Regulators and platforms should be aware of the role of information disclosure, strengthen information transparency, at the same time, the credit information system should also timely access to China's formal bank credit system to reduce information asymmetry. (2) In the aspect of risk prevention, P2P platform should dig deeply the information of investors and borrowers, establish a

perfect information authentication mechanism, and accurately judge the borrower's capital use, project prospect and repayment ability. Follow up in time for late repayment to avoid default caused by improper use of funds. (3) In the case of alienation of domestic P2P platform operation mode, the establishment of guaranteed platform can attract more investors, and platform should connect funds to bank escrow system and third-party guarantee institutions for effective supervision at the same time. (4) Under the condition of immature domestic regulatory mechanism, P2P platform has one of the inherent requirements of core competitiveness, that is, to improve the internal control mechanism of the platform itself, in addition to the security of hardware facilities, the behavior and skills of P2P practitioners should be strictly regulated. Under the tide of Internet finance, if a P2P lending platform wants to have its own core competitiveness, it should not only grasp the advantages of information technology, but also guard against the double-edged sword of technology, and grasp the development indicators of the platform. Only by doing so can they stand out among many P2P lending platforms.

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