**[Crowdfunding innovations in emerging economies: Risk and credit control in peer‐to‐peer lending network platforms](https://onlinelibrary.wiley.com/doi/10.1002/jsc.2334)**

**Abstract**

The purpose of this research is to figure out the risk of a particular case study of the peer to peer company ‘PaiPaiDai’ in China. As the rapid development of peer to peer lending, the potential credit risk is gradually exposed because of the information asymmetry, which causes the lender cannot gain the repayment because of the default of the borrower. Hence it focuses on how the platform credit rating system deals with the user’s credit information to reduce the possibility of the credit risk. Then, the research concerns on what aspect of credit information can affect the rate of loan success so that the result is able to contribute to the future development of the credit rating system. Moreover, the research is adapt the logistic regression to analyze the relationship between the credit variables and the credit risk, which is to find what the factor that is most likely to lead to the default.

*Key words*: Peer to peer lending; credit risk; information asymmetry; credit rating system.

**1. Introduction**

With the rapid development of internet technology, a new kind of financial lending model has been innovated which is different from the lending types offered by traditional commercial banks. This is called peer-to-peer lending, or "P2P". At this stage, China’s financial industry has gradually entered the internet age. Then again, because P2P platforms have only been a recent development, this new mode of online lending is still in its early stages in China. The majority of finance of society still utilises traditional banks and issues of stocks and bonds. However, this new form brings a change of ideas, which is beginning to have an increasingly fierce impact on the traditional financial industry. This model mainly relies on the Internet technology, making use of the huge quantities of data available. Online lending platforms contribute to both lenders and borrowers at set interest rates, under the condition of a common identity. They do not rely on traditional financial institutions, but through the internet platform itself, to realise the debit and credit transactions. They can raise any ‘idle money’ from the society and conveniently and cheaply service demand for cheap money. This is fast becoming a new characteristic of modern financial service systems.

P2P network lending platforms were first built in developed countries. The world’s first P2P network lending platform was Zopa, which was established in 2005 in the United Kingdom. China’s first P2P network lending platform was set up in Shanghai on August 2007 which acquired the first financial information service licence in 2012. PaiPaiDai was founded more than six years ago and received

more than one and a quarter million registered users. PaiPaiDai has made more than 700 million Yuan of lending transactions, which makes it currently the largest P2P lending transaction platform. After the 2008 financial crisis, the tightened liquidity of the macroeconomic markets provided opportunities for the development for P2P network lending platforms, according to the data provided by the third party platform "Wangdaizhijia", which is a P2P network lending platform in China. In 2008, there were about a dozen platforms in existence. By 2012, there were more than 800 platforms., Also, the network lending platforms amounted to over 30 billion. Since 2012, a series of platforms have appeared, such as the "letter", "Ali small loan" and "Lu Jin" which are very special P2P net loan platforms in China. The P2P financial model is playing an increasingly significant role in solving the problems of small and medium sized enterprises with financing problems, with its unique advantages.

P2P lending also has risks of its own existence which have a negative impact of the industry. As P2P lending has no clear legal documents in our supervision, the social credit system is not perfect, which causes borrower credit risk and internal systemic risk from the lending platform. Basically, P2P platforms in China have no specific, industrial standards, or monitoring environments, so it leads to some platform especially the newly established companies to appear illegally funded- and data leakage prone, which can result in borrower’s defaulting to the contract or collapse of the platform. These issues as a breach to the platform, which leads to a sense of mistrust and causes a serious damage to the development of the P2P lending industry.

The nature of the risks in P2P network lending credit are caused by the asymmetric information and moral hazard of the borrower, as the borrowers have many reasons why they cannot afford or are unwilling to repay the interest on their loan, resulting in damage to the lender’s profits. Zhang Yumei (2010) pointed out that, due to the fact that China has not yet established a completely individual credit system, it is thus difficult to judge the network loan by the borrower’s credit information. This is a significant reason why development of P2P has not proceeded further. From the perspective of the lending platforms, the credit and operating risks have become the main risk factors in the development of P2P, according to the risk assessment and risk prevention of the loan. Lending platforms have become important aspects of improving credit risk systems. The P2P lending platforms in China do not face similar issues as the mature foreign market, and so, it cannot simply imitate the risk control mechanisms from developed countries.

This research is primarily focused on the P2P network lending platforms’ credit risks and the success rate of these loans. There has been a rapid development of P2P lending transactions, which brings a convenient loan for the borrowers that are not rich. However, there have been failures in the platforms because of a series of problems to the P2P platforms. So the research will analyse the PaiPaiDai, which is a particular peer-to-peer lending company in China. This will be done with a specific case and by using the lending platform trading data to get the results, which are relevant to the research question. The aim is to discover ways to enhance the monitoring and service of this system, for both borrowers and lenders. Also, aspects that influence the success rate of the loans shall also be analysed. Furthermore, strategies to strengthen the construction of lending platforms will be explored, which are able to contribute to the development of peer-to-peer lending in China.

As mentioned in the previous sections, this research will focus on the credit risk and success rate of these loans. As a result, three research questions were defined as follows:

1. How does the PaiPaiDai credit rating system control the credit risk?

2. What are the aspects that influence the success rate of loans?

3. What is the relationship between the credit risk and the variables from the borrowers?

The structure of this paper is divided into six sections. The first part begins with an introduction of the peer-to-peer lending, as well as the main objectives of the research. Then, in Section 2, there are reviews of relevant theories and supporting information about the principle of the peer-to-peer lending and what risks are involved in the transaction. Section 3 describes the research methodologies which will be used to fulfil the research objectives and achieves the aims of the research. Section 4 shows research results, which are relevant to the methodologies from Section 3. Then, discussions of the outcomes from previous sections are presented in Section 5. Finally, conclusions are drawn in Section 6. The research summaries, limitations of this research, and suggestions for further studies are included.

**2. Literature review**

This section provides related studies and useful background information, in order to offer readers more knowledge and understanding about the research. Section 2.1 will mainly focus on the basics of the peer-to-peer lending system, as well as the credit risks behind the platform. Section 2.2 describes how the information asymmetry is the main factor that can cause the serious problem of credit information. Section 2.3 focuses on the reasons to generate the credit risk and how it affects the lending, as well as showing the effects of credit rating. Finally, the section 2.4 focuses the theory of herd behavior.

**2.1 Peer-to-peer lending**

P2P lending is a direct response to social trends, because of demands for new forms of relationship with the financial sector under the new information technology age. P2P is a two-sided market that is not too different from the traditional banking system and with its typical challenges (Klafft, 2008). The lender and the borrower are the main target groups for all platforms. Therefore, much research has focused on the factors that are essential for the success of these stakeholders (Freedman and Guangzhou gold, 2008). Whilst the lender seeks the opportunity to invest in a level of risk, the borrower with different risk of default seeks a source of liquidity. As an intermediary, the platform brings these groups together. They attempt to match the expectations of both parties. Lenders and borrowers sometimes engage with organisations and the formation of small communities to focus their interests (Wang, 2009). Online P2P lending can serve as a modified version of traditional micro-financing, since peer-to-peer lending this microfinance is typically collateral-free. This is because the targeted borrowers are typically poor, which are similarly suffer information asymmetry problems.

Ortega & amp; BeH, Briceno (2008) researched on the Zopa platform for borrowers’ data. As a result, the financing efficiency and the borrower’s personal information is proportional. At the same time, there are several studies that show the borrowers’ financial strength, such as the debt to income ratio and the personal information and descriptions, which are important factors that can influence the success of the lending (Kumar, 2007). Lin (2009) and others on the ‘Prosper’ research found that the higher the borrower’s credit rating, the greater the likelihood of the borrower’s success. The lower the interest rate loans, the lower the possibility of repayment default. At the same time, they also found that the borrowers’ credit card usage and historical transaction information will also affect the lender’s decision. The Collier research concludes that the higher the loan to income ratio, the higher the loan interest rate will be; the higher the loan amount, the worse the financial situation, the higher the interest rate will be. Therefore, the borrower must weigh the amount of borrowing and borrowing costs in order to maximise the revenue. Puro et al (2011) also designed a decision support system called Aid System Decision, in order to help lenders to make investment decisions based on their research results.

In a P2P lending platform in the form of a group, if the borrower is a member of the group, then the financing efficiency will be higher (Kumar, 2007) in the same sample. Greiner & Wang (2009) and Berger (2009) also found that being a part of a group can significantly reduce borrowing costs. When the borrower's credit rating is very low due to the increased risk of default, the lender will pay more attention to the social assessment of the internet source, in order to evaluate the risk level. Bruett (2007), Agarwal & Hauswald (2008) and other scholars believed that with the P2P network lending through the supervision of group members, the group of loans can also reduce the risk of information asymmetry caused by the credit.

Lin (2009) used the data provided from Prosper by adapting the social network analysis method, in order to research whether the social networking improves the success rate of P2P platform lending and reduces borrowing costs with a lot of quantitative research. The results showed that the social network signal reliability and verifiability will significantly improve the efficiency of financing, with higher credit rating for friends. As a result, the borrower’s default risk will be reduced. Having many friends and social networks bidding less will reduce its’ financing success rate. The research clearly pointed out that if social network relationship exists, the social capital will reduce the information asymmetry. There are scholarly works based on the theory of behavioural finance in the theory of social network. In research on the relationship between the network and the P2P online transactions, the lower the credit rating of the borrower, more actively will the borrower participate in the platform into members of the exchange, leading to a strong signal of confidence, in order to improve the efficiency of its financing (Collier, 2010).

P2P lending consists of the platform, the borrowers and the lenders, on which the guarantee depends. Through the integration of four sectors, it can be concluded that the P2P lending credit risk is mainly manifested in the following aspects (Xie, 2015):

1. The borrowers credit profile, during the audit stage, contains information that the borrowers provided, but is distorted.
2. The risk of borrower brings the default to the platform, which reflects how they borrow from different platforms. A capital loss is caused by default to multiple platforms.
3. The platform raises lenders guarantees fund as a custody, such as the principal guarantee obligation of contract, which has a risk that the platform will roll all the money and escape.
4. During the process of lending transactions, the borrowers raise interest rates on purpose, defaulting risk after the two sides reached an agreement.

In order to analyse PaiPaiDai and its lending process and system, Wang Yan, Chen Xiaohui, Xing Zengyi (2009) found that the introduction of competitive bidding mechanism provides personal credit to individuals. They believed that P2P lending, in terms of risk control, needs to improve the monitoring index system, including the use of loans, loan interest rates, loan duration, reimbursement, among other factors. To innovate the risk control mechanism, Wang Ziwei, Yuan Zhonghua and Zhong Xin (2012) summarised the risk control methods of PaiPaiDai on loans. They found that PaiPaiDai obtains the borrower risk rating from Zopa, which also requires timely monthly repayments and interest. Luo Yang’s (2010) study on the P2P lending platform and the risk control model of PaiPaiDai loans, found that PaiPaiDai as a platform provides information exchange and capital management, to improve the control of the risk.

Zhang Xiaoxia (2010) analysed domestic and international representative P2P platforms, such as Zopa, Prosper and PaiPaiDai, finding that the powerful mature foreign market with technical support, improved monitoring environment and mature credit system is an important foundation for loan success. This promotion seems more suited for effective trading requirements, which encourages more people to engage in a variety of transaction via the internet.

Wang & Greiner (2011) argued that there are many reasons why P2P platforms are popular, such as the fact that more online financing demand and investment opportunities can be satisfied with lower transaction costs. Also, there are plenty of P2P platforms that have been established, providing smaller loans and without many complex restrictions. Additionally, separating large loans into many smaller ones provides a diversifying mechanism for the investors, thus lowering the risk to each individual lender (Li et al., 2016)

Hence, there is much more research on the peer-to-peer lending system. Cai and Wen, (2013) introduced the characteristic and working principle of P2P network lending platforms, for both domestic and foreign development, pointing out that P2P network lending platforms have certain risks and corresponding countermeasures, due to credit market innovations and reforms. Sufi (2007) and Michael Klafft (2008) also stated that, as well as in the financial market in general, information asymmetries do indeed exist in the lending market network. In addition, with inexperienced investors, under network environments, the credit risk is higher.

**2.2** **Information asymmetry**

Information asymmetry becomes the heart of explanations because economic outcomes such as investment decisions may be inefficient (Stiglitz and Weiss (1981), Myers and Majluf (1984), and Diamond (1991a)). For financial institutions such as banks, credit rating agencies exist on the pretext of partially resolving the adverse effects of information asymmetry (Leland and Pyle ,1977). However, the effectiveness of such financial intermediaries in mitigating information asymmetry remain an under-explored issue empirically.

Information asymmetry is a fundamental problem of online lending, but the largest problem is the issue of agency (Jensen and Meckling, 1976). While lenders want to get as much effective information of the borrower as possible, the borrower may hide some of his information in order to obtain lower interest rates. So, to help the lender to make a decision based on accurate information, the lending platform forces the borrower to provide financial information that has been recognised by outside institution. For example, many platforms require users to provide information such as gender, race or age. Borrowers often have the opportunity to provide social information, which cannot be verified, such as hobbies, family background or photos. In addition, this information determines the P2P loan, which are able to impact the success rate of the loan and the required interest rate.

Asymmetric information can be resolved by requesting that borrowers show as much information as possible, whether financial or personal. A Freedman & Jin (2008) study showed that since, since Prosper began to request more financial and personal information disclosure from the beginning of Feb 2007, the funding rate has increased. This suggests that the alleviation of information asymmetry is able to enhance market efficiency. William et al. (2009) stated that information, such as credit ratings, also helped to mitigate adverse selection.

With a type of high level information asymmetry, the lender can infer the credit score, based on hard information such as the personal information, a bill from a bank and membership of trustworthy communities (Collier & Hampshire 2010). Hence, these signs can affect the bid strategy of lenders on the lending platform. Some research has identified that the inference from the lenders is not only from the hard information, which can dedicate the credibility and the possibility of default, but also on the poor credit rating directly (Iyer et al. 2009).

**2.3 Credit risk and credit rating**

Several studies have shown that P2P lending platforms still associate with risk in certain considerations, as many drawbacks are increasingly exposed (Emekter et al., 2014). Some platforms regularly provide an inspection of the borrower’s identification, credit records, and other recorded information, in order to better control the risk. Online P2P lending still has a high degree of information asymmetry. There is one distinctive feature in common: transactions in electronic credit P2P lending market occur anonymously between fictitious users. Therefore, that information is asymmetrically distributed between borrowers and lenders. Loans are not collateralised and lenders face the inherent risk of default (Steelmann, 2006). Hence, lenders face credit risk from transactions, especially for China’s credit scoring system, which has not been fully established. The uses of funds may not be transparent, which adds a great deal of uncertainty to the normal repayment of principal and interest (Miao, 2012). The largest credit risk is undoubtedly that the debt cannot be returned on time. The credit class of P2P lending mode is far worse than commercial Banks.

The relationship between P2P platforms and the borrowers indicates that credit audit is particularly important. P2P platforms in general, through the network or telephone access to the lender's identity card, online account, academic certificates, asset materials, marriage certificates and other related information, can gain access to the borrower's basic information for inspection (Du, 2014). For some network lending platforms and network community, the borrowers online circle of friends is included in the credit audit criteria. However, these auditing standards on the borrower's credit, the actual condition and the use of the loans are difficult to track. Survey platforms are difficult to ensure the authenticity of the information of the borrower. In addition, poor credit rating borrowers are able to obtain loans through different platforms, with the realisation of the old and new default, which leads to the proliferation of risk.

There are many factors that decide whether the borrower and the lender reach a loan agreement in P2P lending. Borrowers are generally aware of the possible risk and the lender usually cannot fully realize the borrower's risky profile, without considering its ability to pay( Kirschenmann and Norden, 2012). The credit ratings reflect the borrowers’ average quality and utility level to make a comprehensive judgment. The lenders willingness to lend then compares with the loan interest rates. Therefore, the borrower's own credit status, credit level, the borrower's comprehensive credit level and the ability to control the risk of capital, are all necessary conditions for the normalisation of the transaction.

Currently, most platforms are not only intermediary, but also as a different role, the audit, the sponsor and funding managers will lead to some P2P platforms having more power, which leads to the higher risk for the borrowers. Firstly, if the platform guarantees, ignoring the potential risk of the formation of the lender, results in the risk of real distortion. Secondly, the platform uses the lender's funds to invest in other financial activities, which may violate the line of illegal fund-raising. Thirdly, the lender's funds are transferred through a third party to the P2P platform account, because the third party does not have the authority for monitoring, and the flow of funds is unknown, so the platform escapes further risk (Li et al., 2016)

Online P2P lending platforms are often have 2% increase of its total amount of credit transactions, which can raise lending interest rates indirectly, further increasing credit risk(Chen et al., 2013). Another way when the P2P lending platform guarantees loans is by working with credit guarantee companies. However, there are also risks associated with this practice. Normally, banks will be asked to provide a certain percentage of margin and collateral when cooperating with guarantee companies, but there is no uniform requirement for the proportion of margin and collateral that P2P lending platforms afford to guarantee companies. Thus, it is highly likely that the guarantees are insufficient to offset the amount of losses.

P2P lending platforms are also facing the risk of information security, due to their construction requirements, that have relatively low budgets. Most of the program on the platform is usually open source code, which can be vulnerable to hackers. Once attacked by hackers, online lending platforms will encounter information security risks, because the information may be leaked (Chen, 2013).

There are many factors that can affect the default rate. Current studies show that the group effect may reduce the borrower's default rate. Credit loan amount, term receipts, the purpose of the loan, age, educational level, employment status and default rates are all closely related Everett (2008). There have been more than 14,000 data analysis projects on the relationship between P2P network lending platform, and social market with default risk and interest. The conclusions have been that mutual social connection helps P2P platforms to have a lower default risk.

Credit ratings are often viewed as important assessments for firms’ solving credit risk. These certifications serve to transmit relevant credit information. The borrower who wants to lend from the public debt or loan markets may not be able to be successful. For example, in the face of information asymmetry, investors would not only face adverse selection problems, but would also incur high costs from credit analysis and monitoring. Thus, without any certification of their credit rating, the investors would be unwilling to lend money to the borrowers, Sufi (2006).

Herrero Lopez S. (2009) believed that in the current P2P platform network lending platforms, since borrower's assessment and audits are more concentrated on individuals, this will mean that the credit rating is not accurate. Considering the nature of the P2P platform networks, P2P platforms have to show more consideration of the borrower's social relations, so that they can get a comprehensive analysis. Shen, Krumme and Lippman’s (2010) research believed that the current P2P platform network lending platforms are for investors with high risk appetites, and with existence of the ‘herd effect’, the overall risk of the platforms increase (3). Collier and Hamshire (2010) used P2P platforms with community groups based on member behaviour and empirical analysis. They confirmed that the personal reputation connected with the group reputation can lead to group members between mutual supervision, which can effectively reduce the phenomenon of converse and control moral hazard.

The majority of P2P lending platforms provide an overview of the financial characteristics of the borrowers to the lenders, as the main standard of the credit. The most typical feature is the credit rating, detailing income and monthly costs, home ownership or debt to income ratio, which are often determined by external rating agencies that aggregate personal and financial characteristics to a credit-score. Some platforms like Prosper.com provide additional financial information of the borrower's credit line or the bankcard utilisation (Klafft, 2008).

Iyer et al. (2009) researched the impact of credit ratings of borrower on the success of the fund. Questions were raised on whether the lenders can infer the borrower's creditworthiness by consideration of other factors, other than with credit ratings. The result showed that lenders distinguish between borrowers with different credit-scores within the same credit list level category by screening other characteristics of the borrowers, which may be given in the loan listing. The authors of the lenders infer the creditworthiness of borrower’s credit-rating categories, which are mainly from other variables, such as the dept-to-income ratio, the number of current delinquencies or other credit inquiries. The impact of such information on the extent of borrower's willingness to pay the maximum interest rate may still be significant.

Klafft (2008) confirmed that the P2P lending rules are very similar to those of traditional banking systems. His analysis of the data from the platform shows that the borrower's credit rating, which is influenced most by the interest rate of the loan whilst the debt-to-income ratio of the borrower is smaller, has significant impact. Additional information, such as the verification of the borrower's bank account or the verification of housing ownership have almost no impact on interest rates. This analysis shows that the existence of a borrower's bank account is the most powerful determining variable when it comes to the success of a funding, because the borrower's credit rating includes the borrower’s bank account information.

China has its own special characteristics, which have resulted in a rise of the online lending market. Overall, China's tight bank credit environment has helped to promote the development of the online loan business. Obviously, banking is not financing because they assume the loan is out of value, and increase the cost. Mostly, the investigation and the approval of a loan project process is long and costly, and so few banks consider relatively small loan requests. In China, banks can only lend the money whilst they hold sufficient value from the borrowers. This is the traditional way for lending in China (Ma, 2005).

**2.4** **Herd Behavior**

According to previous theories, there are many reasons for us to act like a herd, which have been used as a basis to explain the develop. One of those reasons is conformity preference: individuals naturally wish to conform to the behavior of others (Jone, 1984). Duan et al. (2009) shows the two reason that herding behavior could be especially outstanding on the Internet. Initially,it is about information overload. There is an excessive amount of information on the Web, so online users have difficulty understanding and receiving all the information (Brynjolfsson & Smith 2000).

Due to There are many herding behaviors show that buyers rely on information gathered by other buyers of experience ，so the previous consumers already experienced products and services, therefore, potential buyers believe that those experienced in prior to them have better information and better understanding. ((Lee and Lee, 2012). Copying what others do could be an efficient and reasonable way to make decisions in this situation. The second reason is that people can easily observe others’ selection on the Internet. Most online e- commerce websites support a approach to arrange their products in the order of previous sales performance.Kauffman and Li (2003) found that the former founder decision makers in online adoption invest in what was chosen by the previous adopters. Analysis on herding in the online P2P lending market is in the early stage. Krumme and Herrero (2009) reflected a simulations of diverse scenarios of herding behavior and interaction in an attempt to explain the observed bidding patterns of lenders

**3 Methodology**

This section will discuss the research philosophy and strategy and then describe the methodologies used to achieve the objectives and how it guided the research. A case study is the process or record of a representative company of peer to peer lending which reflects its features and issues. An empirical study is based on direct observation to gain knowledge of the factors of loan success. Third, **l**ogistic regression is logistic regression is used to describe data and explain the relationship between one dependent binary variable and one or more metric independent variables. Therefore, it can be used in describe the relationship between the credit risk and the variables.

**3.1 Research Philosophy**

Selecting the right research method can contribute the research process and help the researchers solve many issues.

Research methods are at the centre of the research framework and play a particularly significant role in the social sciences, in which we are all involved.

The aim of this research is to analyse a specific case and determine the relationship between credit risk and credit information variables. An empirical study of the loan success rate will be combined with the case study to explain the consequences. Therefore, the philosophies used in this research are positivism and interpretivism.

**3.2 Case study**

This case study focuses on the PaiPaiDai loan in the credit system, loan process, and the audit process. It contributes to a deeper understanding of how the peer to peer lending platform handles credit risk and, therefore, reflects the situation of many peer to peer lending platforms in China.

**3.2.1 Case background**

PaiPaiDai was founded in June 2007 and is headquartered in Shanghai. PaiPaiDai is the first pure credit unsecured network lending platform, and was the first approved by the business apartment of China. It has acquired the 'financial information services' qualification for an internet lending platform.

At the end of 2015there were 12 million registered users of PaiPaiDai, making it one of the largest network lending platforms in China. Compared with other domestic network credit lending platforms, PaiPaiDai is characterised by its online only mode of operation. The platform itself is not involved in the loan and it engages in the implementation of information matching, tools, and support and service functions. The borrowers’ rate depends on their actions and the restrictions on the maximum interest rate. This is the most primitive network of lending platform mode in operation.

**3.2.2** **Credit rating system**

The users of PaiPaiDai are able to register after certification; credit behaviour is the lenders making a successful bid and borrowers receiving the funds.

1. Certification mechanism. For the PaiPaiDai loan platform, the borrower should be certified through several personal services, including mobile phone authentication; video authentication; certification account.

(2) Audit mechanism. The audit process ensures that the borrower's identity card photo, mobile phone authentication and application are consistent with the loan purpose. In the pre audit, the PaiPaiDai platform audits the mentioned information and verifies the borrower's personal assets and liabilities, income and expenditure. The focus of the follow-up loan audit is to investigate whether the user is suspected of fraud, has a criminal record, and acts with integrity etc.

(3) Fund management mechanism. Users of PaiPaiDai funds are divided into free and customer funds. The customer fund uses the sub account management model and can completely separate their own funds and customer funds. User top ups and cash withdrawals through the third party payment platform and banks and other systems operations actually deposit the corresponding funds in the bank accounts of these institutions. This can prevent the lender misappropriating the platform’s funds.

(4) Overdue collection and blacklist mechanism. Because the network’s credit risk may cause overdue loans, and the risk cannot be entirely borne by the lender, PaiPaiDai has launched a loan protection system to replace overdue loans, protecting the interests of the lender. The website has a blacklist page which lists the details of borrowers who fail to repay their loans, including their real names, photos, e-mail addresses and mobile phone numbers.

PaiPaiDai enhanced the credit system and robustness of the credit platform to provide a better setting for the debit and credit relationship and control the risk of bad debt to some extent.

**Borrower credit score**

The credit rating, as a credit attribute of the borrower, is the investor's judgment of the borrower's default risk. The higher the credit rating of the borrower on the Internet credit platform, the lower their probability of defaulting on the loan and the greater the probability that they will obtain the loan. A loan is obtained based on the credit rating of the borrower which is based on the certification fraction transformation and the user rating given by past lenders on the platform. Based on these figure, PaiPaiDai will determine the customer's credit rating which is divided into six grades, with English letters of credit rating from high to low. The grades are A, B, C, D, E, HR. The table 3-1 is shown below.

|  |  |  |  |
| --- | --- | --- | --- |
| Credit rating | Score  range | Online-score | Offline-score |
| A | 126-150 | identity authentication （ +10）  Real name authentication of mobile phone  （ +10）  Video  authentication （ +10）  Education Certification（ +10）  The timely repayment of less than 15 days  （ +1）  Overdue more than 15 days  （ -2） | User can provide other verifiable information, such as: Estate license, Marriage certificate, proof of wages, etc. |
| B | 101-125 |
| C | 76-100 |
| D | 51-75 |
| E | 26-50 |
| HR | 1-25 |

**Table 3-1 Borrowing credit score**

The credit rating is determined by PaiPaiDai’s credit evaluation system, the success of the loan rate and the maximum loan amount are affected by the credit rating.

**Lending Credit Score**

The lending credit score is a significant part of the financial lending platform. The credit score can help the credit platform evaluate lenders based on their investment history and judgment. The higher the loan credit score of the lender, the richer their experience and transactions. Therefore, it can be concluded that they engaged in more secure investments which ensure more stable returns. In addition to publishing loan information, the lenders also on the borrowers. When the investors bid, they usually consider the borrower’s credit rating and credit score. As the lending credit score table 3-2 is shown below.

|  |  |
| --- | --- |
| Credit program | Credit score |
| Authentication | +10 |
| Video authentication | +10 |
| Education certification | +5 |
| Mobile phone authentication | +10 |
| Study test | +5 |
| Bid success | +2/ per time |
| Receive interest | +2/ per time |
| Overdue | -10/per time |

**Table 3-2 lending credit score**

**3.2.3 Loan process**

The borrower should have a registered account on PaiPaiDai. Once they are registered then they can browse the types of loans, and choose their own loan applications. Borrowers need to provide their basic personal information, including gender, education, occupation, income and so on.

The platform lets the borrower publically post the loan information and the lender can view this information and use it to determine to risk level of the loan which is based on their level of acceptance.

When a loan successfully reaches full scale within the specified time, PaiPaiDai will audit the loan and if the audit is successful then the borrowers will receive the relevant loan.

Repayment of loan. Repayment of the loan is the last step in the loan process, however, it is also the most important. The borrower shall guarantee the repayment of the loan in the prescribed time.

**3.2.4 Audit process**

PaiPaiDai’s audit is divided into two stages, the first view and review. The first view and review are indispensable. In 2010, PaiPaiDai adopted the automatic audit instead of the original manual audit.

The first view is the preliminary examination stage. The preliminary examination refers to the borrower uploading their basic information, such as name, ID number, unit, etc. to verify their authenticity. If the borrower’s basic information is approved by the audit then they may publish the loan information on the loan platform, however, if their information is false or fails to meet the platform’s requirements then they will not be able to publish on the platform.

Secondly, review. The review process happens when the loan reach a full-scale and the platform audits the loan again.

If the borrower is approved by the relevant regulations, then they can borrow the funds, however, if they fail the audit then they will not get the loan.

In normal circumstances, the standard time for a full-scale loan audit is between one to three working days. In addition, for the people who join PaiPaiDai’s priority scheme the time is relatively short and the audit is typically completed within one working day which greatly improves the efficiency of the process.

**3.3** **Empirical Analysis**

Empirical research has the ability to gain knowledge by the means of direct and indirect observation or experience. Meaning, empirical evidence is the recording of one's direct observations or experiences. Given this, the following piece of research aims to analyze how the sector may influence the success rate of a loan and how to obtain one easily.

Most network lending platforms in the process of an audit borrower’s credit information, involves loan amount, interest rate, time limit, the borrower’s age and gender, marital status, education, and credit rating. Based on this notion, research methods focused on credit information between February 2015 and March 2015, and included 500 successful transactions which are all from the PaiPaiDai website.

1. Loan Amount

According to a survey, PaiPaiDai is primarily involved in small businesses with less than 5,000 yuan (accounts for 86%). Among them, the highest loan amounts are 3,000 yuan (47%) and 5,000 yuan, respectively. From the data of 500 successful transactions, a loan of 10,000 yuan remained as a single figure, with only five people successfully borrowing 20,000 yuan and one person successfully borrowing 30,000 yuan.

1. Time Limited

The period of time for obtaining a loan is one year for those that are short-term.

Figure 3-1 Time limited

(3)Borrowing Interest Rate

The borrowing rate is closely related to the amount and duration of a loan. For rookie borrowers, the platform staff will be recommended based on the borrower’s own characteristics, the amount requested, and the duration of the proposed rate of interest. Thus, when private business owners publish interest rates, the minimum is 16%, whereas payments are overdue, a 15% interest rate can be applied.

Figure 3-2 Borrowing interest rate

(4) Education Level

PaiPaiDai, according to the provided personal qualification levels attained, ensures the authenticity of the information gathered.

Figure 3-3 Education level

The above graph shows that the number of borrowers with undergraduate degrees is lower, accounting for only 20% of all loan borrowers. Among them, undergraduate included 95 people and postgraduate included 6 people. This is due to the high degree of social identity and recognition of the highly educated, meaning there is a less frequent lack of cash flow. From the 500 borrowers, over 300 people in total had high school and college qualifications.

(5) Marital status

Marital status was carefully checked and was based on marriage certificates, cell phone verification, and by calling the borrower's spouse to ensure the information was correct. Because of this, the article will be in accordance with the marital status of unmarried, married, divorced and other. Among them, the other mainly refers to the widowed. As can be seen from the above figure, married people accounted for a great deal of the total figure, reaching 189 people, 281 unmarried people, 27 divorced and 30 other people.

Figure 3-4 Marital Status

(6) Credit rating

According to the information provided by the borrower, the platform will be used for personal credit ratings from various angles. The system was developed by a pat on the loan, which was used to evaluate the borrower's personal credit rating. The system is combined with comprehensive personal data and is based on the historical database pat credit for accurate assessment, thereby reducing the total risk. Non-resident and credit rating is only G and HR who have no qualifications to borrow.

Figure 3-5 Credit rating

(7) age

From the stats, the age of the borrower is mainly gathered from 20 to 40 ,the amount of number is reached at 448 people. Among this ,the age between 21 to 30 is the majority of the loan borrower which accounts 276, it demonstrate that this age period is more likely to get the loan.

Figure 3-6 Age

**3.4 Logistics Regression**

Logistic regression indicates the relationship between the dependent variable and one or more independent variables by estimating the probabilities using a [logistic function](https://en.wikipedia.org/wiki/Logistic_function). Therefore, identifying the relationship between the risk and the credit information variable.

**3.4.1 Data**

This research is focused on the borrower’s age, gender, credit rating, success, the total amount of the loan, the interest rate, duration, and monthly repayment amount for data analysis. More specifically, this research is based on data from the PaiPaiDai borrower information, which was selected from April 2015 to August 2015 on a PaiPaiDai website. The results included 60,237 samples. In order to make the data more reliable, all incomplete data was deleted. Thus, the results included 52,367 samples of user information. All secondary data is from the PaiPaiDai website.

**3.42 Variables**

In order to accurately measure the credit risk of the P2P network lending platform, this research uses borrower default behavior to represent the borrower’s credit risk in lending transactions. This, therefore, adapts to the research methods of Yuan Yu (2014), who used binary choices of the logistics regression model. This is more intuitive for the analysis of the P2P network lending platform of the borrower’s credit risk. Thus, If the borrower defaults, then 1 is written, whereas if the borrower has no defaults, then 0 is written. The variable definitions are shown below (table 3.31).

|  |  |
| --- | --- |
| Variables Name | Definition |
| Risk | Borrower’s credit risk |
| Age | Borrower’s age |
| Credit | Borrower’s credit rating |
| Gender | Borrower’s gender |
| Total | Loan amount of borrower’s |
| Time | Lending term of borrower’s |
| Monthly | Borrower’s monthly repayment |
| Fail | Borrower’s fail times |
| Success | Borrower’s success times |
| Rate | Interest rate |

**3.43 Model**

In order to systematically analyze those factors that may affect the P2P network lending platform and credit risk, the following section focuses on the PaiPaiDai user age, gender, credit, success, fail, time, rate, monthly and total values, to identify the influence of credit risk. Thus, the model is equal to:

risk= α1credit+ α2success+ α3fail+ α4total+ α5rate+ α6time+ α7monthly+ α8gender+ α9age+ε

where, the credit risk is the dependent variable.

Furthermore, number, credit, success, fail, total, rate, time, monthly, age, and gender are the independent variables. Finally, ε is the random disturbance term for the ordered choice model in order to adapt to logistic regression.

**4 Findings**

**4.1** **Finding from the Case Analysis**

1）**Credit Rating System**

PaiPaiDai uses the borrower’s credit rating as the primary basis for judgment of the borrower’s default risk. Due to China currently not having a mature credit management mechanism, the P2P platform is not accurate and does not have a complete assessment of the personal credit rating. Additionally, to this, there is a contradiction between the disclosure of credit information and personal information for security protection reasons. This not only happens on the PaiPaiDai website, but also for the P2P network lending platform. Thus, this is a problem that needs to be solved. In network lending, it does not guarantee that the lender’s trust is entirely dependent on the borrower’s credit. In other words, credit is the foundation of the business model for all peers regarding peer lending, which is an important standard to the transaction.

PaiPaiDai, as a Chinese peer to peer lending platform, has a customer credit system that is still not perfect. This is due to PaiPaiDai finding it difficult to establish an objective and comprehensive rating system for the evaluation of customer credit ratings. Thus, there is a potential lack of quantity in the information. Moreover, there is no third party institution to provide the historical credit status of borrowers for PaiPaiDai, meaning the platform is only based on the customer information submitted on the site. This, in turn, increases the credit risk of the network credit. Developed countries, however, have a near perfect credit system that encourages credit companies to easily access a variety of external sources of information, such as personal credit records, social security numbers, individual numbers, bank accounts and other personal credit information.

There are also problems with regards to the network lending platform, whereby the credit information is not shared. Therefore, borrowers can undertake several loans from several different platforms, meaning there is likely to be an increase in the credit risk.

2）**Risk Control Mechanism**

P2P online lending refers to the network as a carrier and the occurrence of personal loans to individuals. At present, the industry access threshold is low, with no regulatory or legal constraints. Thus, online P2P lending platforms are possibly hiding uncertain risks. In order to prevent and reduce these risks better, an acceleration of stable development in this industry is needed. For example, to understand the user process in the lending credit mechanism PadiPaiDai online lending platform, the credit mechanism of the platform can be summed up as: Authentication, auditing, fund management and overdue collection and blacklist mechanisms. These credit mechanisms, to a certain extent, reduce the risk of bad debts and ensure the safety of loan funds for the borrower. However, mechanisms, such as the "black list" collection mechanisms, involve violations of personal privacy; therefore, suggesting there is the need for further improvement.

Regarding the PaiPaiDai platform, borrowers can publish lending information directly on the loan website. As the network credit platform is not effective in assessing credit situations and because of the information asymmetry, the lender’s benefit may be damaged.

PaiPaiDai is weak in the control of a loan. Thus, the platform is not effective in helping a lender with repayment reminders. When the lender’s money cannot be refundable, the platform will not be able to afford the loan repayment, meaning the lender must suffer their own loss. This is the most obvious drawback for online lending as the lender is unable to attain refunds and interest. As a result, if the platform strengthens the supervision of borrowers, it will greatly increase the operating costs of them.

Another important issue focuses on the security of the network, as hackers may attack the platform if the financial loan has a rich set of private information that can be used for illegal use. This, therefore, threatens the financial security of net loan users and allows for people to engage in illegal and criminal acts, leading to stolen information.

Additionally, PaiPaiDai is a pure credit platform, meaning the borrower does not require collateral for a loan. If a borrower has an uncertain credit rating, it will greatly increase the risk of loans and the total rate of bad debts. If the rate of bad loans rises, then platform liquidity will be affected and will lead to the collapse of the peer to peer lending platform.

PaiPaiDai loans also has a lot of bad debts per year, meaning the risk of bad debts cannot be ignored during consideration. At present, the methods PaiPaiDai loans use to control the bad debts includes reminding the borrowers repay, adding late fees, and adding a default to the borrowers of the loan. This method, therefore, cannot effectively reduce the lender’s credit risk.

In addition, PaiPaiDai loans aim to enhance the audit of borrower loan applications, as the loan should be consistent with the purpose of the application. Thus, there are still some funds that are invested in the stock with a high risk investment, which may cause the lender to not receive the funds due to the problem of asymmetric information. Furthermore, it is also difficult to manage the rate of debt, even if their credit rating is higher there is also a higher rate of bad debt. The reasoning for this is based on the current PaiPaiDai loans and other P2P network credit platforms that focus on the repayment of loans and ignores the strict supervision of loan applications. Thus, ignoring the strict use of a loan will lead to an increase in the rate of bad debts and credit risk.

Compared with general commercial bank loans, PaiPaiDai is faced with a serious risk of debt cannot be repay on time, which request P2P lending platform strethen their monitoring on the repayment. PaiPaiDai is generally meet the require of the short-term financial needs of the borrower, which has higher rate than the commercial bank, sometime it can up to more than and 20 percent as the interest, such a high interest of borrowing has brought strong pressure to the borrower, the credit risk is potentially increase, as some borrowers have not the sufficient ability to repay, but the result is they still can obtain the loan. So how to determine a more appropriate level of interest rates is an important issue of the similarity peer to peer lending platform, Through the statistical analysis of the PaiPaiDai website from 2011 to 2013 thousands of users online transaction data, which found that when PaiPaiDai users credit loan term is higher, the overdue rate and default rate is high; otherwise the loan period is shorter, the overdue rate and default rate are low, so it indicates that there was a positive correlation between them.

Focusing on the risk control mechanism, this type of credit company is not start with professional financial enterprises, which means it lacks a wealth of risk control experience and the complete standard of control process . from the perspective of the borrowers and lenders, because the loan is based on the independent transactions, and the two side are not with rich knowledge of risk identification, risk aversion and the relevant financial knowledge. However，The Credit Companies only as a third party to provide a trading platform, it does not provide the corresponding risk advices.

At present, most P2P credit companies have two ways to deal with flow of transaction funds: the company supervisor open a natural person account or can not be as a artificial person in the bank . These platform corporate with the third payment part like IPS ,Alipay ,in order to Funds flow. However, these third institution can not play as a real credit role to monitor the p2p companies, so it could happen the negligence of the staff or failure of control the fund which may arise funds illegal phenomenon.

At present, due to the lack of clear laws and regulations on the peer to peer lending platform such as pat loans, the monitor institution has no legal basis for the supervision of the network lending company that cause the boundaries of its regulatory responsibilities are not Clear.

In general ,financial institution by understanding the borrower’s credit history and personal information to avoid the risk of default, however, at present China’s credit system is still very imperfect, and only the banks and other traditional financial institutions have the authority to view the user of credit information, in the word P2P network platform cannot be informed of the borrower’s information through the credit system, only through the phone to Access to the information provided by the borrower , and as the existence of serious asymmetric information, after the loan, the credit company can not track the true flow of funds, the actual use of a payment is not known, which may increase the moral hazard of credit. Those are the major risk of the peer to peer lending platform.

**4.2 Findings in loan success**

1）**Loan amount**

The only restriction impacting upon borrowing is the auditing process of the credit information. The platform is based on personal information, credit reporting, as well as the personal credit rating in order to produce the proposed loan amount. Based on to the audit statistics, if the required loan amount is relatively low, this can make accessing credit easier. This suggests that online peer to peer lending is relatively more suited to lower transaction amounts, as the liquidity of low amounts is greater, which is more consistent with the demands of online borrowers. With regard to larger loan amounts, less people are likely to request them due to the greater potential risk, while a longer repayment period is usually necessary. Thus a low loan amount has increased likelihood of being successful.

2）**Lending time limitations**

Borrowers are more inclined to request a one year loan period. Out of the 500 individuals, 185 chose a one year repayment period. Easier terms are also often granted. Thus it can be deduced that the largest volume of loans have one year terms. With regard to the borrowers, the longer the loan period time the better, because they will have more time to manage their debt and raise the money for repayment.

3) **Interest rate**

PaiPaiDai does not take on the responsibility for the overdue or bad debt, rather it only provides the repayment for a particular program, which requires that the borrowers pay an additional fee of 199 yuan in order to obtain the guarantee of repayment. Concurrently, its borrowing rate fell to 12%. The empirical results indicated that out of the 500 individuals sampled, 400 borrowers took 12% of the interest rate in order to borrow successfully. This suggests that the majority of borrowers bought additional services, in order to own the right to default on payment as a means of increasing the bid rate. Ultimately, from the lender’s perspective the crucial aspect is not the concern with interest, rather it is the guarantee of repayment in order to avoid the risk of default.

**4) Age**

As the results illustrate, the most successful rate of repayment within the loan period was seen among those between 21- 30 years old. The reasons for this success are perhaps due to them having a more secure capacity to service interest payments, that they make more funding requests and have greater familiarity with the online loan process.

**5) Education level**

The link between educational attainment and capacity to make repayments can be simply stated that, that the higher the level of educational attainment the greater the repayment capability. Among the sample, 213 individuals had graduated from college and 97 people had a high school education. The borrower form college and high school had insufficient salaries to cover the cost of their outgoings, that is to say that their outlays are often greater than their income, so they requested loans. Technical secondary school and junior high school graduates also comprised a part of the successful borrowers, accounting for a total of 89 people, with a similar number of undergraduate loan requests. This indicates that, if the provided personal information is true and there is a stable source of repayment, while other conditions remain favourable, then investors will also lend money to those from lower education groups.

**6) Marital status**

In China, the majority of married couples possess real estate, which is considered to be crucial evidence of repayment capability. Having a fixed address and house reflects a more stable lifestyle, with less chance of disappearing. Compared to single people, married couples have a relatively stable income and lifestyle, while showing at least a reasonable capability to plan and use funds. Thus these factors are typically perceived as guaranteeing a comparatively secure repayment foundation, as well as being a more favoured source of investment. Unmarried people comprise the majority of young people, who may engage in more impulsive consumption, lack the ability for capital planning as well as other favourable characteristics, thus having a greater demand for funds.

**7) Credit rating**

From the chart, it is apparent that the majority of successful loans to borrowers are not made to those with a high credit rating. For instance, the level of borrowing success for those with B and A credit rating comprised of only 15 people. A considerably greater number of borrowers had a D credit rating, comprising of 146 people in total. The number of borrowers with ratings of C, E and F numbered over 100. Thus not only those with credit ratings of A or B are able to borrow money. Ultimately, this is a particular issue facing China’s peer to peer platform. Despite many lenders having faced defaulted payments from lower rated borrowers, the industry is attempting to encourage companies to be more concerned with the credit rating of borrowers, which may reduce the credit risk. Nevertheless, in an imperfect credit system there are still considerable numbers of people who are unable to meet the requirement for high ratings, which usually necessitates taking on huge potential credit risk. However, even if the lender lacks awareness of realisation of the credit risk, some people may engage in the transaction simply due to the herding effect.

**4.3 Logistic regression**

The results presented in the following table illustrate the loan borrower data pertaining to PaiPaiDai. While the repayment period, gender and age of the borrower do not have a large impact on credit risk, the remaining six variables of credit rating success, failure, time, total amount of the loan, the interest rate as well as the monthly repayment all strongly impact upon credit risk. Among these, the borrower’s credit rating and the total amount of the loan have a significant negative correlation to credit risk. The impact of the borrower’s repayment success, failure, time, interest rates as well as monthly payments have a significant positive correlation with credit risk. The result of the regression table 4-1 is shown below.

|  |  |  |  |
| --- | --- | --- | --- |
| variables | coefficient | Z | P |
| Credit  Success  Fail  Total  Rate  Time  Monthly  Gender  Age | -0.41330  0.41472  0.09445  -0.000064  0.17168  0.0000367  0.000398  0.0589433  0.0291761 | -14.37  32.84  5.03  -6.31  11.35  0.00  6.91  -0.64  0.81 | 0.000  0.000  0.000  0.000  0.000  0.998  0.000  0.518  0.419 |

Table 4-1 result

From the analysis results, it can be known that the greatest impact on the credit risk is the success time of the borrower, It shows a significant positive correlation. Due to the current peer to peer lending platform credit system and regulatory model are not perfect, which resulting in the borrowers fill in the personal information and add fictitious information about the number of successful bidding which is in order to improve the success rate of the loan. According to this , which is leading to borrowers will not as the previous agreement to repay the interest, which greatly improves the credit risk of peer to peer lending platform .Then it is about borrower’s credit rating, it has a significant negative correlation. According to the low credit rating of the borrower’s credit level is relatively low, which is more likely to occur the default behavior, which resulting in a positive correlation between the credit risk.

Then, the number of bids and borrowing interest rate were significantly positive. As interest rates increase repayment pressure of the borrowers , which making the borrower cannot repay interest payments on the due, so that it leads to the positive correlation between credit risk . Borrower loan amount has a significant negative correlation with credit risk, because the borrower of small and medium-sized enterprises or poor are mostly easily to get the financial difficulties, hence the amount is not huge, when the due time arrived due to them still cannot repay the interest, which leads to the loan amount has a negative correlation with credit risk.

There is a positive correlation between the borrower's monthly repayment and credit risk, as the monthly repayment is higher which cause the higher pressure of the borrowers, so some borrower is failed repay monthly, thus increasing the credit risk. There is no obvious correlation between the borrower's loan period, the borrower’s gender, the age of the borrower with the credit risk.

**5 Discussion**

This study is based on a case study of a peer to peer platform to explore the risk during the transactions. From the case description, It clearly shows how the peer to peer platform actual works , and the different steps from the loan process.

As the relevant literature mentioned that the information asymmetry is the main reason which causes the credit risk. According to this , each peer to peer platform such as PaiPaiDai attempt to set up their own credit system, and classify the users into different types of rating in order to let the lender are more easily distinguish the potential risk. However, as the finding mentioned, in China , the credit information is not collected systematic and reliable, because there is the no actual third party institution is really doing the credit information research, on the contrast , the information from the borrowers are usually explored by themselves , though the peer to peer platform has the audit process, but It still happen and amount of default.

Hence, for the improvement of the loan success, the study focus on the factors that may able to influence the success of rate. So as the result, there are some logics behind the empirical result. Among them, the high credit rating is quite a few when comparing with others, this is because an amount of people cannot reach the requirement of a high credit rating, and even the user has a high credit rating, it still has a high rate of bad debt. The lenders do not only require the high-interest rate that they can receive, but the reliable repayment result from the many default events, and from the result it shows that the majority of online loan is concentrated on the college education level and the age is from 21 to 31, as they have a great knowledge of the online loan process and the relatively more demand of fund. So after demonstrating several significant factors, the study has researched on the internal relationship between the credit risk and the variables of the credit information.

From the finding of the logistic regression, the factors which influence credit risk most is the success bids of the borrowers, owing to the lenders are more prefer to invest the people who had a sufficient historical success transactions, and normally the borrowers have the more success bids, they have the lower credit risk. However, because of the imperfect of the credit monitor platform, it gives a chance to the Malicious borrowers to change the success stats in order to get the loan. So it raises the credit risk as these borrowers actually cannot repay the interest on time. In addition, the credit rating which is the most obviously to judge the potential risk, with a higher credit rating , it will have a lower credit risk, it totally represents a clear negative correlation. Moreover, there are more and more platforms and the users have the increasing attention on this factor. With the development of the monitoring of peer to peer lending , the borrowers must be required a higher credit rating, so that they can gain the loans.

**5.1 Suggestions**

Firstly, as peer to peer lending is still as the start stage in China , it requires a legal monitor apartment to manage the online loan ,and put forward a relevant legal regulation to conduct the behavior of the borrowers. Hence, with the strict restriction of the policy, it will reduce the default rate of the borrowers by the relevant punishment .

Then is about rising entrance of the peer to peer lending industry , because the low threshold leads to a huge difference in the quality of the operators and capital strength, which increase the difficulties in the supervision of monitor. Owing to this , this also causes the fraud and moral risk events, which bring a crisis of confidence for the entire industry of the peer to peer lending.

The third is completing and enhancing the credit rating system in China, as it has not an independent third party institution to collect all the credit information, which leads to the information is separately and inaccurately collected by the platform, which causes the information usually is not reliable. So it can learn from the advanced credit rating system from the developed country such as UK and US.

**6 Conclusion**

This study investigated into the risk of peer to peer lending platform, owing to the new financial model of an online loan, which has lower cost and more convenient especially for the small loans when comparing with traditional banks and institutions. Hence, there is more and more peer to peer lending platform established, and the research use PaiPaiDai as a case study result from its relatively success and famous, which is able to represent the general circumstance of the peer to peer platform in China. Then by the case study , to answer the research question how does the PaiPaiDai credit rating system to control the credit risk. It set up a suitable of credit system by their owns to gain the borrowers information and classify it into a different level in order to control the credit risk, and then based on the historic experience of the lender to evaluate its ability to distinguish potential risk which is able to increase the possibility of the loan success. And if there is a default happens , the platform will explore the personal information of the borrower and help the lender to get the repayment. However, it still shows that there has a series of problems which exist in peer to peer lending platform, such as its audit process which is based on the information published by the borrowers, and deal with the default ,the approach of the platform is usually not so effective, in addition the platform will not replace the repayment for the users in general situation, so that may reduce the participants of the lenders.

Then the research is focus what are the aspects that influence the success rate of loans, to analyze the secondary data in the different aspect and then use the graph to shows the difference in the particular period which contributes the research to get the what kind of period of a particular aspect is more likely to get the success of the loan. Finally, by analyzing the relation between the different variables of credit information and credit risk in order to get what the aspect influence the credit risk most, and find a positive or a negative correlation is between them. Among them, the interest rate ,success bids, credit rating, and monthly repayment has a great impact on the credit risk, and the other like gender ,age and time have not an obvious relation to the credit risk.

This research is based on a case study, so it is only a particular case which cannot completely represent all the peer to peer platforms in China. As every peer to peer platform has its own particular situation, so the research mentioned issues in the PaiPaiDai is only a part in the peer to peer lending industry, there still exists other problems because this online loan is still at a start stage in China.

The quantity of the sample in the empirical analysis is not sufficient, and about the factor choose in success rate of the loan, There are a number of factors that have not an obvious effect on the success rate of the loan. This research is lack of an amount of data analysis , which seems more theoretical.

Owing to this research is mainly focus on the perspective of the platform, there has an another aspect from the perspective of the borrower and lender, the further research can separately analyze their bid strategy from both lender and borrower, to get the implication of what approach is able to increase the success of the bid by using a particular strategy.

Except for the study on the bid strategy, the further research can analyze the advanced credit rating system in the developed country, such as the ‘FICO’ mode in the US. The FICO mode has a relative complete credit system, which records personal credit information includes the bank credit, taxation, industry and credit card repayments , compared with the information collected by the China platform, it seems more reliable. This mode is automatically evaluated the interest revenue and the risk management ability of the lender, which is greatly promoted the rate of the loan success. Hence, to get the improvement in China peer to peer lending credit rating system.

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