Wang, Peng

Article
Exploring the critical factors influencing online lending intentions

Financial Innovation

Provided in Cooperation with:
SpringerOpen


This Version is available at:
http://hdl.handle.net/10419/176402

Terms of use:
Documents in EconStor may be saved and copied for your personal and scholarly purposes. You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public. If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.
Exploring the critical factors influencing online lending intentions

Peng Wang¹, Haichao Zheng¹, Dongyu Chen²* and Liangchao Ding²

Abstract
Background: Online lending (P2P lending) is a type of internet finance mainly used to meet the financial needs of small and medium-sized enterprises and groups of individuals. It is a supplement to the traditional financial system.

Method: This paper uses PP Dai.com—the most influential online lending platform in China—as a research object to study the leading factors that affect lenders’ loan trust and perception of information asymmetry. It also studies the impacts of these factors on lending intention.

Results: The results of this study show that the lending intention is mainly influenced by trust; perceived information asymmetry will affect trust, but it will not have a direct impact on lending intention. Trust is significantly affected by the borrowers’ reputation and information integrity. Information asymmetry has various causes, including structural assurance and legitimacy. This perception of information asymmetry significantly prevents the further development of online P2P lending.

Conclusion: The findings in this research imply that there are profound differences between online lending and online purchasing, thus the results obtained in the traditional e-commerce market cannot be applied in the field of online lending without verification.

Keywords: Internet investment; Internet finance; Trust

Background
Small and micro enterprises and personal business firms face the problem of a shortage of funds. With the development of e-commerce—a particular type of lending (online lending)—provides a new solution. Online lending, also known as personal lending or peer-to-peer (P2P) lending, enables borrowers and lenders to trade directly via the Internet without using banks or other financial intermediaries. These are unsecured loans (Lin et al. 2013). This network financing model is based on Web 2.0 technology. Its core is a lending web site, which is a platform between borrowers and lenders. The P2P online lending market has developed rapidly since 2005; lending sites with slightly different modes of operation have appeared all over the world, including in America, Britain, Germany, Italy, Canada, Japan, and China.

There is some recent research on the P2P online lending market abroad, mostly focused on the data analysis of the Prosper open platform in the United States. But there is little related research in China. A deep understanding of the behavior of traders and the internal mechanisms of online lending is needed to help formulate relevant
policies. Compared with the traditional e-commerce model, online lending involves higher risks, and establishing trust is also more difficult. This paper takes lenders as the research objects to study the key variables influencing lending intention in the process of online lending from the perspectives of trust and information asymmetry.

The remainder of this paper is organized as follows. First, it reviews related literature and basic theories, putting forward concept models and hypotheses. Then it introduces the research design and results, including data collection process and related hypothesis validation. Finally, it discusses and analyzes the results and presents conclusions.

**Theoretical basis and research hypothesis**

There are currently many P2P lending platforms in the world; all these platforms have adopted similar lending mechanisms. Users can become lenders and borrowers after registering. Borrowers release loan information, loan amounts, allowable highest interest rate, borrowing reasons, and other personal information on the platform. After verification by the platform, this information is presented to lenders. According to the list of borrowing information, lenders decide whether to loan, the loan amount and what interest rate to apply (i.e., the bid amount and interest rates), etc. Websites will usually require a minimum bid amount (e.g., 50 yuan), and a borrower accepts many bidders. Within the borrowing deadline, when the total bid exceeds the borrowing amount, lower interest rates triumph. After achieving the loan, lenders' capital is transferred to the borrower's account, and the borrower repays the loan over an agreed period of time.

This lending process involves high risks because the borrower is not always willing or capable of paying on time. Hence, choosing the credible borrowers to reduce investment risk is a key point for lenders to consider.

Some scholars have studied the influence of personal information on funding. Because lenders can only judge the risk of default according to limited information, personal information and borrowing information become important signals for evaluating borrowers' credit. Personal information has an important influence on loan performance, borrowing, and lending decisions (Bachmann et al. 2011; Chen & Han 2012). For example, Lin et al. found that when the borrower's credit rating is low, the borrower has a lesser possibility of success. When the interest rate is high, the default rates are also high (Lin et al. 2013). Herzenstein et al. found that the main factors influencing the success rate of loans were borrowers’ personal information and credit rating (Herzenstein et al. 2011). Duarte et al. found that borrowers’ appearance also has a significant impact on the success rate of loans (Duarte et al. 2012). If the borrower has an honest appearance, the success rate is higher; on the other hand, these borrowers have a high credit rating and a low default rate, which is believable.

Scholars’ research also emphasizes on the lenders’ social network and other decision-making information that influences loan behaviors. Online lending platforms not only provide borrowers’ personal information but also provide social networks for lenders to evaluate a borrower's reputation. For example, Lin et al. found that borrowers’ social network information can effectively reduce information asymmetry in trade, improve the success rate of borrowing, and reduce the interest rate and loan default time (Lin et al. 2013). Research by Yum et al. shows that by observing others’ decisions, lenders are able to predict the private information of other lenders, pool wisdom, and improve
their decision-making skills (Yum et al. 2012). Lee et al. found that others’ decisions significantly influence lenders’ behavior, leading to a phenomenon called herd behavior (Lee & Lee 2012). This phenomenon also exists in the markets of the United States. The following behavior is good for boosting lending performance (Zhang & Liu 2012).

Lending behavior involves risk, because there is information asymmetry between borrowers and lenders. To a large extent, perceived information asymmetry affects individual behavior trends. Kim et al. built a trust model about online trading. They argued that trust, risk, and profit are the core factors to decide trade trends (Kim et al. 2008). Greiner and Wang’s research on Prosper has shown that reputation mechanism has a significant impact on lending behavior, and is an important means to reduce uncertain transactions (Greiner & Wang 2010). Domestic scholars’ research also suggests that contracts and credit are the basis of contact between enterprises and consumers, who are influenced by multiple factors such as information authenticity and information transparency (Qiaopei & Song 2012). Research on domestic customer to customer (C2C) online shopping shows that perceived credit score and perceived customer reviews are the key factors that influence customer trust (Ma et al. 2012).

According to the research above, we found that the core issues of P2P lending are information asymmetry in the process of trading and trading trust. Currently, research about P2P lending is mainly concentrated on the online lending market in the United States; studies of the Chinese market are still very limited, and rigorous empirical analysis is more scarce. On the other hand, although some scholars have realized that risk and trust have a comprehensive influence on the trading process, there are no unified trust models to depict online P2P lending behavior. Compared with existing literature, the main innovations of this paper are considering risk and trust in the lending decision and putting forward a theoretical lending behavior model suitable for China’s online market.

In this paper, perceived information asymmetry and trading trust are taken as the key variables that influence lending intention. At the same time, we consider lenders’ personal information and reputation, which play an important role in lending behavior. This information is used to build the online lending behavior theory model, which is shown in Fig. 1.

![Fig. 1 Research framework. (+) a positive influence, (−) a negative influence](image-url)
Perceived reputation

Reputation is embedded in social network (Nahapiet & Ghoshal 1998). Traditional microfinance theory shows that reputation can reduce the risk to lenders, because borrowers with higher reputations are more likely to keep their promises. Freedman’s study confirms that reputation can relieve information asymmetry and adverse selection problems (Freedman & Jin 2008). Studies such as Lin’s also obtained a similar result; they think that reputation in the social network can effectively reduce information asymmetry in the process of trading (Lin et al. 2013). Greiner and Wang’s research (Greiner & Wang 2010) affirmed Lin’s conclusion further: they think that the biggest role of the borrower’s reputation is to help improve the borrower’s perceived integrity. They also found that the greater the borrower’s reputation, the greater the borrowing rate and the lower the loan interest rate. When the borrower’s credit rating is lower, the role of reputation is more obvious. This analysis shows that the borrower’s reputation is the basis of perceived investment risk for lenders. It is an important signal for lenders to measure borrowers’ degree of credibility, and it has a significant impact on lending decisions. The resulting basic assumptions are as follows:

H1: The lender’s perception of the borrower’s reputation has a negative effect on the perceived information asymmetry.
H2: The lender’s perception of the borrower’s reputation has a positive effect on the lender’s trust in the borrower.

Information integrity

Perceived information integrity refers to the accuracy of a lender’s perception and the completeness of borrower information (Kim et al. 2008). Because users are remote from each other in both time and space, the information that consumers get from network transactions is incomplete and continuously changing, thus information quality is not guaranteed. One way to reduce the perceived risk is to search for related information before buying a product. While searching for this information, consumers face the problem of information sources’ reliability. To reduce risk, they need to get high quality information. In online lending markets, borrowing list information is an important basis for borrowers to measure lenders’ degree of believability. Kumar’s research suggests that the borrower’s information integrity is an important factor of credibility. The information integrity of the borrower will have a significant impact on credit behavior (borrowing rates, borrowing rate of full scale) and quality of repayment (default). To a great extent, the authenticity and integrity of the information in the P2P network platform of the borrowing list influences the lender’s degree of perceived information asymmetry and trust. Based on the above analysis, we have made the following basic assumptions:

H3: The lender’s perception of information integrity regarding the borrower has a negative effect on perceived information asymmetry.
H4: The lender’s perception of information integrity regarding the borrower has a positive effect on the trust in the borrower.
Perceived information asymmetry
Perceived information asymmetry refers to a lender’s perception that borrowers may have more information than lenders and may take advantage of this by harming the lender’s interest (Pavlou et al. 2007). Perceived information asymmetry is a problem that concerns consumers. Researches on e-commerce and information systems show that trust is the cornerstone of all social activities. All types of uncertain factors in trading will hinder the generation of trust (Chen et al. 2008). Transaction risk raised by information asymmetry is the key factor in the formation of trust. To ensure the safety of investments with the same return, lenders are more willing to put money into investments where they think the borrowers are credible. Based on the above analysis, we think that when the borrower’s perceived information asymmetry is low, it will be easier for him or her to gain the trust of the lender. Thus, we have made the following basic assumptions:

H5: The lender’s perception of information asymmetry has a negative effect on the lender’s trust of the borrower.
H6: The lender’s perception of information asymmetry has a negative effect on the lending intention.

Trading trust
Trust is based on a belief that the trusted party will behave in a responsible manner in order to achieve the expectations of another party (Pavlou & Gefen 2004; Pavlou 2003). Many studies have shown that trust will significantly impact individual behavior (Chen et al. 2008). Pavlou and Gefen’s research shows that trust can have an effect on decision-making behavior and attitudes (Pavlou & Gefen 2004). Pavlou and Gefen surveyed 127 respondents who had used the Amazon.com shopping site and researched the relationship between trust and consumer behavior. Their results show that a high degree of trust is associated with a high proportion of actual consumption. Online lending involves money transactions, and consideration regarding the safety of investments prompts lenders to require a stronger sense of trust to make a deal. The result is the following basic assumption:

H7: The lender’s trust of the borrower will positively influence the lending intention.

Study design
Variable measurement and questionnaire design
To guarantee the validity of the scale, we used various methods to design our questionnaire. First, all scales refer to the results of authoritative literature. Second, we invited industry experts to participate in a discussion to modify the scales to ensure their readability and effectiveness. Finally, we undertook a preliminary investigation in a small range and a preliminary analysis of the measuring scale; according to the results analysis and respondents’ feedback, we modified the semantics and wording of the scale, determining the final questionnaire. The questionnaire uses a multiple projects Likert scale method and a total of seven points (1 = “completely disagree” and 7 = “completely agree”).

Data collection process
We used an online survey to collect data. All respondents were registered as PPDai.com users. PPDai.com advised users of the survey and posted links on users’ main personal interface. Users who completed the questionnaire will get paid and have an opportunity to participate in a draw. To exclude the interference of invalid questionnaires, respondents were asked to supply their platform-registered account identification and information from the borrowing list, interest rates, and borrower’s credit rating. Questionnaire information that did not accord with the actual information was invalid. We collected 205 valid questionnaires in total.

Descriptive statistics of data sample
Respondents in the data sample are mainly male (84.88 %) and relatively young (respondents aged 21–25, 26–30, and 31–40 accounted for 29.76 %, 32.2 %, and 29.76 % of the sample, respectively). Their education level is relatively high (those with college graduate or undergraduate degrees accounted for 55.61 %), and those with a monthly income of 2000 yuan or above accounted for 77.08 %. Most respondents had used the lending platform network within one year. However, there was a large distribution of usage rates: those who had used it three times or less and 10 times or more accounted for 65.86 % and 22.93 %, respectively. Demographic characteristics of the sample and demographic characteristics of all registered users of the site are roughly the same, which means that the sample is representative.

Results of the study
Measurement model
Before testing our hypotheses, we needed to test the reliability and validity of the variables used to construct the measurement model. This article uses a partial least squares (PLS) structural equation modeling tool called SmartPLS 2.0 and the bootstrapping estimating method to calculate the load of each factor and the path coefficient.

Cronbach’s α value and composite reliability are used to analyze the reliability of the constructing variables. In this article, the construction variable of α value is between 0.74 and 0.89, and the composite reliability value is between 0.85 and 0.92. They are all greater than 0.7, thus we know that the reliability of the various construction variables is very good.

Validity analysis includes two aspects: convergent validity and discriminant validity. Convergent validity refers to the degree of correlation between the same constructs across multiple indices. Scholars such as Gefen think that when the measurement indices corresponding to each factor of the construction variable are greater than 0.7, the scale has good convergent validity (Gefen & Straub 2005). Fornell and Larcker think that if the scale has good convergent validity, the construction of the variable of the average variance extracted (AVE) should be greater than 0.5 (Fornell & Larcker 1981). In this paper, the measurements of factors are all significantly above 0.7 (Table 1) and AVE is between 0.65 and 0.75 (Table 2), showing that the measurement scale has good convergent validity.

Discriminant validity refers to the degree of difference among variables, which can be determined through the following measures: (1) the mean square root of AVE of the construction variables is greater than the correlation coefficient between it and other
variables and (2) the measurement corresponding to the construction of variable factor loading is greater than its factor loading on other variables. Our results show that AVE mean square root of each value variable is significantly greater than its correlation coefficient with other variables (Table 2). The measurement corresponding to variable factor loading is greater than its value in the other variable factor loading (Table 1). Therefore, this paper effectively measures construction validity.

Because this study used the Likert scale method to measure respondents’ subjective evaluations of the questionnaire items, data may subject to common method variance. We put all the measured variables together to do a factor analysis, testing whether a single factor could explain most of the variance. Data analysis shows that the first factor explains only 21.97% of the variance. This means there should be small chance of significant homologous data errors.

### Structural model

A structural model was used to test the relationship among constructs, verifying the accuracy of our theoretical assumptions. The structural model contains two aspects of information: path coefficient and $R^2$. The former shows the extent of the mutual

<table>
<thead>
<tr>
<th>Table 1 Cross-loading matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Item 1</td>
</tr>
<tr>
<td>Item 2</td>
</tr>
<tr>
<td>Item 3</td>
</tr>
<tr>
<td>Item 4</td>
</tr>
<tr>
<td>Item 5</td>
</tr>
<tr>
<td>Item 6</td>
</tr>
<tr>
<td>Item 7</td>
</tr>
<tr>
<td>Item 8</td>
</tr>
<tr>
<td>Item 9</td>
</tr>
<tr>
<td>Item 10</td>
</tr>
<tr>
<td>Item 11</td>
</tr>
<tr>
<td>Item 12</td>
</tr>
<tr>
<td>Item 13</td>
</tr>
<tr>
<td>Item 14</td>
</tr>
<tr>
<td>Item 15</td>
</tr>
<tr>
<td>Item 16</td>
</tr>
<tr>
<td>Item 17</td>
</tr>
</tbody>
</table>

| Table 2 Descriptive statistics and correlation coefficients of variables |
|-----------------------------|---------------------|-----------------------|-------------------|-----------------|
|                             | Mean    | S.D.    | Alpha | CR      | AVE    | 1        | 2  | 3  | 4  | 5  |
| 1. Information asymmetry    | 4.36    | 1.00    | 0.74  | 0.85   | 0.65   | 0.81     |     |    |    |    |
| 2. Perceived reputation     | 4.38    | 0.92    | 0.75  | 0.86   | 0.66   | 0.82     |     |    |    |    |
| 3. Trust                    | 4.34    | 0.97    | 0.89  | 0.92   | 0.75   | −0.12    | 0.40 | 0.87|
| 4. Lending intention        | 4.51    | 0.97    | 0.86  | 0.91   | 0.71   | 0.00     | 0.53 | 0.66| 0.84|
| 5. Information integrity    | 4.37    | 0.94    | 0.81  | 0.88   | 0.65   | −0.88    | 0.65 | 0.58| 0.60| 0.80|
influence among variables; the latter indicates the degree of interpretation of endogenous variables. Based on the research by Kim et al. (Kim et al. 2008), we used the least squares method in this study. After setting up the structural model, path coefficient and $R^2$ were calculated by the program automatically. The method does not need a big sample size, and the results of the method are reliable. Therefore, it is widely used in theoretical hypothesis testing. The path coefficient and $R^2$ are shown in Fig. 2. Perceived reputation ($b = 0.34, p < 0.05$), information asymmetry ($b = 0.60, p < 0.05$), and information integrity ($b = 0.56, p < 0.05$) significantly affect the lenders’ trust of the borrowers, so Hypothesis 2, Hypothesis 4, and Hypothesis 5 gain support. Reputation, information integrity, and perceived information asymmetry explain 69% of the variance in the lenders’ trust. However, perceived information asymmetry is negatively affected by perceived reputation ($b = 0.33, p < 0.05$). The effect of information integrity ($b = 0.08, p > 0.08$) is not significant, so Hypothesis 1 is supported, but Hypothesis 3 is not supported. Reputation and perception of information integrity explain 16% of the perceived information asymmetry variance together. Trust has a significant impact on lending ($b = 0.51, p < 0.05$). The influence of perceived information asymmetry on the willingness to loan is not significant ($b = 0.07, p > 0.07$); trust and perceived information asymmetry together explain 70% of the variance of the willingness to lend. Thus, Hypothesis 7 is supported, but Hypothesis 6 is not supported.

**Discussion and analysis**

The results of this study show that trust has an impact on lending decisions. It is not only a basis for traditional e-commerce but also for the online lending market. Trust is influenced by reputation, perceived information integrity, and perceived information asymmetry. The perception of information integrity has no significant influence on perceived information asymmetry; it was surprising for us to find that perceived information asymmetry has no significant impact on the lending intention. The results show that trading behavior in the online lending market may not be consistent with that in the traditional online shopping market.

The theoretical contribution of this paper is mainly embodied in the following aspects. First, the results of our research provide information that is valuable to understand the nature of borrowing and mechanisms within the online financial environment. Although there is a large amount of literature on trading behavior in the online shopping environment, research that focuses on online financing behavior, especially online lending, is limited. Research results shown in this paper demonstrate that although borrowers’ personal information and reputation developed
through social networks will affect financing, under our country's current market environment, borrower reputation is important in determining a lender's perceived information asymmetry and trust, and information about personal characteristics obviously has no influence on risk perception. The research results in this article help us to better understand the laws of borrowing and subsequently provide beneficial references to the research and design of the P2P online lending market.

Second, we discuss the relationship between perceived information asymmetry and trading trust. Because network borrowing mainly happens between strangers, trust building is mainly based on the consideration of cost and benefit; therefore, the perceived information asymmetry is taken as the dependent variable of trading trust is reasonable. Moreover, perceived information asymmetry does not impact lending intention significantly, which shows that the online lending market and the online shopping market are significantly different. This area requires further research.

Third, the results reveal the influence of borrower reputation on investing in the online context. Although previous studies have shown that reputation has an impact on lending behavior, there is little literature analyzing its intrinsic mechanism. Based on previous research results, we can construct lending trust models and reveal the decision rules of lending behavior. Research shows that reputation is the core variable that influences perceived information asymmetry and trust, and that this is the basis for the lending transactions implemented.

Finally, the results reveal a decision-making rule specific to the Chinese market and investment environment. The rapid development of online lending has caused great interest, and there is a lot of literature to analyze and discuss its trading laws. However, these studies mainly focus on the online lending market in developed regions such as Europe and the United States; there is little literature focusing on developing countries, especially China. Because the European and American markets and the Chinese market have different systems, cultures, and investment environments, European and American market research conclusions are not applicable to the Chinese market, which requires careful verification. Therefore, the research results in this article can help to improve and construct a theoretical system for online borrowing under different cultural conditions. The article can also provide empirical evidence for the research of other scholars in the field of Internet financing.

The practical significance of this paper is mainly manifested in the following aspects. First, the results showed that trust is a core factor affecting willingness to lend; thus, enhancing the level of trust between borrowers and lenders is an effective measure to improve trade efficiency. Perceived information asymmetry has an important influence on trading trust, but its impact on the willingness to lend is not significant; the negative influence of perceived information asymmetry can be offset by other factors (such as a higher return on investment). Thus, relaxing lending market interest rate regulations is helpful to promote the development of the market.

Second, the reputation developed through the borrower's social network has an important impact on the lending intention through its influence on perceived information asymmetry and transaction trust; therefore, constructing a good social relation network has an important significance for promoting the market's prosperity. Although the platform design of the system and the measures to ensure safety
also help to reduce the perception of information asymmetry, promoting lending efficiency through social networks is often better. Under the circumstances of an imperfect system design, the importance of reputation is more obvious. Therefore, to increase the loan rate, borrowers not only need to provide more comprehensive and detailed personal information but also need to accumulate reputations to enhance lenders’ confidence level. Moreover, online lending platforms should also provide various functions to help users effectively foster their own reputations.

Finally, we find that information integrity has a significant influence on trust, but its impact on perceived information asymmetry is not obvious. Post-interview results show risks of investment from many aspects such as imperfect trading platform security systems and problems with illegality in online lending. These issues affect investors’ confidence and feelings of security and will hinder the further development of the market. To solve the above problems, the design of online lending platforms must be improved to enhance security levels and introduce corresponding laws and regulations to regulate trade behavior and clarify and explain the legitimacy of online lending.

This study has achieved some important results, but it has certain limitations. First, the paper emphasizes on the influence of transaction trust and perceived information asymmetry as influenced by borrower reputation and the integrity of information. However, in the actual process of borrowing, there are many other factors affecting lending intentions and loan trust (privacy protection, subjective norms, trust tendency, etc.). To understand the online lending process in depth, we suggest that more factors should be considered in future research. Second, the results of this paper, which used a questionnaire, suggest that follow-up research could include interviews, case studies, experimental studies, and other methods of cross-validation with this paper, forming an evidence triangle so that the conclusion can be more reliable. Finally, because people’s understanding of online lending will continue to deepen, behavior will change with the changes in cognitive level and in the environment; therefore, we recommend a longitudinal study of online borrowing behavior so we can better grasp the evolution of the laws of P2P lending behavior.

**Conclusion**

This article mainly studies the key factors of the online lending market that influence trading intention from the perspectives of trust and information asymmetry. According to the related literature on Internet finance and electronic commerce, we have built an online lending behavior theory model. By doing an online questionnaire survey on PPDai.com, we found that lending is mainly influenced by trust in the borrowers. Perceived information asymmetry will affect trust, but it does not have a significant influence on lending intention; however, borrowers’ reputations and the information integrity of loan requests have a significant impact on trust. These results indicate that the investment behavior of the online lending market has unique characteristics; traditional research in the online shopping-based e-commerce field is not completely applicable to the online lending market. The results of this study are helpful to construct and improve theories about online lending behavior in different cultural environments, and they can also provide other scholars with empirical evidence to do research in the field of internet finance.
Competing interests
We authors declare that we have no competing interests.

Authors’ contributions
PW carried out the research design and drafted the manuscript; HZ participated in survey questionnaire design, data collection, performed the data analysis, and help to draft the manuscript; DC initiated and coordinated the research project, participated in its design and help to draft the manuscript; LD participated in the design of research framework and help to draft the manuscript. All authors read and approved the final manuscript.

Acknowledgements
The authors appreciate the Chinese Journal of Management Review for granting the permission to publish the revised English version of the paper in the Financial Innovation. The original Chinese version of the paper was published on the Chinese Journal of Management Review (Vol. 26 Issue 1, Pp 150-158). This paper is supported by National Social Science Foundation (13CJY121) and National Natural Science Foundation (71302008, 71302186).

Author details
1Economic Information Engineering School, Southwestern University of Finance and Economics, Chengdu, China.
2Dongwu Business School, Soochow University, Suzhou, China.

Received: 26 April 2015 Accepted: 18 June 2015
Published online: 22 July 2015

References