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Impact of culture in peer-to-peer lending☆

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ABSTRACT

We document that culture and cultural perception both influence financial decisions. We examine the impact of clan culture, an important dimension of Chinese culture, on individual lending behavior. Using data from RenRenDai, a leading peer-to-peer lending platform in China, we find that borrowers from regions with higher clan culture are more likely to get loans funded, attract larger bids from lenders, get loans funded faster, are less likely to default, and repay a larger fraction of their loans. These effects are more pronounced when there is greater information asymmetry, borrowers are older or from rural areas, and the legal environment is weaker. These results are robust to alternative measures of clan culture. Lenders rely less on culture as a signal of creditworthiness for borrowers with observable default history. Our results suggest that clan culture acts as a substitute for formal institutional mechanisms and participants in the peer-to-peer market use information about clan culture as a proxy for economic factors, improving efficiency of financial decisions.

1. Introduction

Economists are increasingly aware that culture may affect economic outcomes by shaping individuals' beliefs and perceptions toward decision-making (Zingales, 2015; Berger et al., 2021). Previous research has shown that national, local, or organizational culture influences investment, trading, and corporate decisions. It follows that when agents strategically interact with each other, their actions should in turn be influenced by their rational anticipation of the predictable influence of culture (or cultural stereotypes) on their peers. Our evidence shows that culture impacts financial decisions in two ways. First, one's own culture, representing preferences that may be an outcome of the environment, predicts their financial decisions. Second, financial decisions in interactions with others rationally use cultural perception of others as a signal of their behavior.

Empirical research on the impact of culture in finance is limited by quantifiable measures of culture and by data on individual financial decisions. Our unique data allows us to overcome these limitations. We examine how clan culture, a dimension of culture in China, influences individuals' decisions in peer-to-peer lending. Clan culture has played an important role in Chinese society and has contributed to its social and economic progress over the past millennium (Hsu, 1963; Greif and Tabellini, 2017).[1] Clan culture was rooted in kinship and has broad social functions including maintaining and developing social networks, social organization and protection, and shaping individual values. While serving social functions, clan culture also gradually took on economic functions

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[1] The influence of clan culture is not limited to China. In several developing societies, particularly those in the Middle East, Africa, and Central Asia, clan-based systems still prevail. In such areas, clans continue to have long-lasting cultural effects on social norms and individual behavior (Freedman, 1958; Fox, 1971; Wedel, 2003; Cheng et al., 2021).

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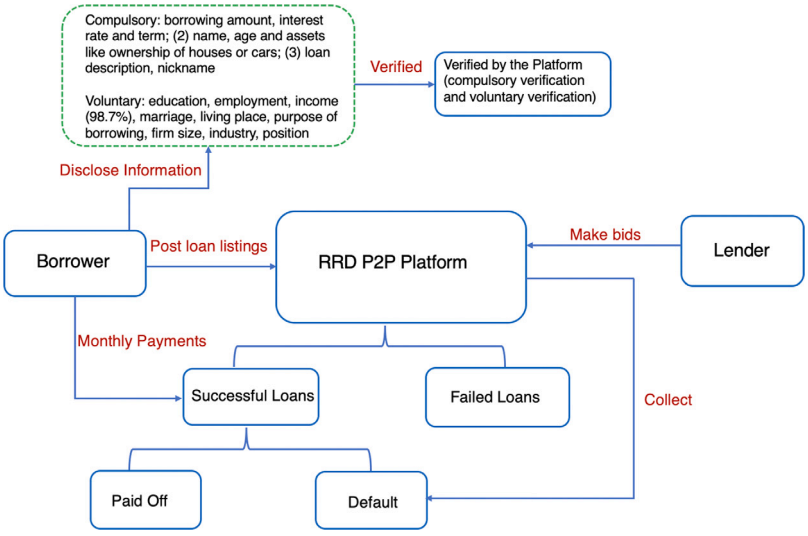

Fig. 1. Borrowing and Lending Process at RenRenDai.

such as providing public goods, distributing economic resources, assisting rural enterprises and business corporations, supporting financing public goods in rural areas, serving as internal financial market, and promoting private economic development. The strength of clan culture varies geographically across China. This variation has permitted studies to document the impact of clan culture on the macro level such as socioeconomic development (Chen et al., 2022c) and patterns of industrial specialization (Fan et al., 2021), or on the corporate level such as entrepreneurship (Zhang, 2020) and risk-taking (Huang et al., 2022). Aggregate consequences of culture must likely arise from their impact on individual behavior. However, the literature has not examined how clan culture impacts individuals' financial decisions. Further, it is not clear how clan culture is related to the primitive factors such as risk and return factors that underlie financial decisions. Our study aims to address this gap by exploring the influence of clan culture on peer-to-peer (P2P) borrowing and lending.

P2P lending allows individuals to crowdfund loans to other individuals without the involvement of banks. Each lender can fund a small amount of the loan to a borrower. Loans are not collateralized (Lin and Viswanathan, 2016) and the lenders and the borrowers are anonymous (Chen et al., 2020). Lenders may overcome adverse selection with nontraditional information about borrower such as their social network (Lin et al., 2013), video information (Wang et al., 2019), friendship and groups (Iyer et al., 2016; Hildebrand et al., 2017), and other voluntary disclosures (Chen et al., 2022a). The clan culture of a borrower is one such signal accessible to lenders. We examine how clan culture impacts borrower behavior and how lenders' perception of borrowers' culture influences their decisions.

We draw our data from RenRenDai (RRD), China's most popular P2P lending platform. More than 2.5 million people have joined RRD since the platform's formal launch in September 2010.[2] RRD was recognized as an AAA (highest level) online lending platform by the Internet Society of China and by the China Academy of Social Sciences in 2014 and 2015. Our data consists of all "manual bidding" transactions on RRD from 2012 to 2015. Borrowers requesting loans at RRD provide mandatory personal information, some of which is verified by RRD, and optional additional information. RRD also issues credit ratings to borrowers. Borrowers request a loan amount, up to a maximum of ¥3,000 to ¥1,000,000 (around $430 to $145,000) depending on their rating and offer an interest rate. A borrower can have multiple outstanding loans. A loan listing is accessible to investors for multiple days to submit bids in multiples of 50 RMB (about $7.50). A loan is successful when it gets 100 percent investment; otherwise, the borrower receives no funding. Once a loan is successful, funds are transferred from the lender(s) to the borrower, and the borrower is required to make monthly loan repayments. The interest and the principal of the loan are amortized on a monthly basis to borrowers throughout the loan period. In the event of a default or delinquency, RRD makes several efforts to collect, such as texting or calling the borrower, contacting the borrower's friends and families, and even conducting on-site collections. Fig. 1 depicts the main steps in the lending process.

We use loan listings posted on RRD from January 2012 to December 2015. We exploit variation in clan culture of borrowers, based on their geographical location, to identify the impact of clan culture on financial decisions. We can do this because there is exogenous geographical variation in the strength of clan culture. The data about individual bids allows us to identify the effect of cultural perceptions on financial decisions. We find that borrowers from regions with higher clan culture have better ex-ante performance. They are more likely to get their loans funded, receive funding faster, and attract larger bids from individual lenders.

[2] China experienced a boom and bust in P2P lending. Following incidents of fraud and the inability of P2P lenders to honor their guarantees to investors, the government cracked down on the industry in 2019. P2P lending ceased completely in 2020.

To examine if lender behavior is rational or biased, we examine borrower behavior. We find that borrowers from regions with higher clan culture exhibit lower default rates and repay a greater fraction of their loan amount. Thus, borrower behavior provides a basis for lender reliance on culture.

Our results are robust to the use of an alternate measure of clan culture. Our results are also robust to the use of an instrumental variable for clan culture. Our result that borrowers with higher clan culture are less likely to default is based on the sample of borrowers who obtain loans, and is, therefore, susceptible to selection bias. We show that our results about the link between borrower culture and repayment performance are robust to adjustment for selection bias using Heckman's model.

Zingales (2015) proposes that the risk of spurious correlation with culture can be reduced by tracing the effect of culture through the economic channels that it is supposed to affect. Following this recommendation, we seek to identify the economic channels behind the role culture plays in peer-to-peer lending. We first consider borrower behavior as borrower clan culture is the main independent variable in most of our analyses. The lower incidence of default among borrowers with higher clan culture suggests that borrowers with higher clan culture are more motivated to repay than borrowers with lower clan culture that are otherwise observationally identical. Survey evidence supports this inference. Residents of regions with higher clan culture report greater adherence to ethical norms, consistent with the traditional role of norms in promoting moral values and discouraging unethical behavior thorough sanctions. An alternative explanation is that borrowers with higher clan culture are more likely to avoid default because of the support they obtain from their social ties or from superior local economic conditions. Survey data provides evidence of stronger social ties and prior literature documents that areas with higher clan culture exhibit greater economic and private sector development. Our results hold after controlling for private sector development. To distinguish between the mechanisms of ethical norms and social ties, we assume that ethical norms are more likely to reduce voluntary default while social ties are more likely to reduce involuntary defaults. We compare the role of clan culture in reducing defaults across areas that vary in quality of legal environment and therefore, may vary in voluntary defaults. We find that the reduction in default risk associated with higher-clan-culture borrowers is more pronounced in areas with weaker legal environment. This suggests that stricter ethical norms of borrowers with higher clan culture explain their superior loan repayment behavior.

Since borrowers with higher clan culture exhibit ethical norms that make them more likely to repay loans, lenders can use clan culture as a signal of borrower creditworthiness, and this may explain their greater willingness to lend to borrowers with higher clan culture. We provide survey evidence supporting the perception that higher-clan-culture borrowers can be trusted more. An alternative mechanism could be that borrowers from higher clan culture are more likely to attract lenders with higher clan culture, who are either more trusting of, or just prefer to lend to borrowers with similar clan culture. Our tests with a limited sample of lenders whose clan culture is known, do not support this mechanism. We do find support for the informational role of clan culture about borrowers' creditworthiness as the lender preference towards loans of borrowers with higher clan culture is stronger among loans with greater information asymmetry and diminishes for borrowers who have a history of loan default.

Finally, we examine whether our findings about the impact of culture on lenders are consistent with our findings about the impact of culture on borrowers. We find that lenders optimally use clan culture as a predictor of borrower behavior. Our results are consistent with an equilibrium in which culture acts as a credible signal of behavior because of its role as an enforcement mechanism of norms.

We contribute new evidence on the causal mechanism between culture and economic outcomes (Guiso et al., 2006, 2015; Zingales, 2015; Greif and Tabellini, 2017; Chen et al., 2022c). There is a growing recent literature on the role culture plays in the financial decisions of institutions (Alesina and Giuliano, 2015). Stulz and Williamson (2003) show that cultural differences explain variation in investor protection across countries. Tabellini (2008) shows that well-functioning institutions are observed in countries or regions where individual values are consistent with generalized morality. Guiso et al. (2009) find that lower bilateral trust between a pair of European countries leads to less trade, less portfolio investment, and less direct investment. Ahern et al. (2015) show that cross-border merger activity is less and merger announcement returns are lower when countries are more culturally distant. Bereskin et al. (2018) show that firms with similar cultures of corporate social responsibility are more likely to merge and to have superior performance of mergers. Siegel et al. (2011) show a negative impact of egalitarianism distance on cross-national flows of bond and equity issuances, syndicated loans, and mergers and acquisitions. Cultural distances across nations predict the foreign bias puzzle in investment portfolios of institutional investors (Karolyi, 2016).

There is also evidence about the effect of culture on aggregate behavior of individuals. Grinblatt and Keloharju (2001) show that Finnish investors are more likely to hold and trade the stocks of firms that are located close to the investor, that communicate in the investor's native tongue, and that have chief executives of the same cultural background. Chui et al. (2010) show that individualism, a dimension of national culture, is positively associated with trading volume, volatility, and momentum profits. Eun et al. (2015) show that culture influences correlations in investors' trading activities. Guiso et al. (2008) show that less trusting individuals are less likely to participate in the stock market. Fisman et al. (2017) show that cultural similarity increases credit volume and reduces default. Similarly, Burtch et al. (2013) suggest that cultural proximity facilitates online lending while cultural difference has a negative effect on the loan amount of the borrowers (Chen et al., 2022b).

Studies on the effect of culture on individual economic behavior show that culture influences preferences, and thereby economic actions (Falk et al., 2018). We make several contributions to this literature. Our evidence about borrower behavior is consistent with the impact of clan culture on their preferences, and consequently, on their loan repayment behavior, overpowering opposing economic incentives. We propose plausible economic mechanisms for how clan culture shapes borrower preferences. Our evidence about lender behavior shows how cultural perceptions impact strategic interactions. The random encounters of borrowers and lenders in our data mitigate the problems in drawing inferences from endogenous interactions. Previous literature has highlighted the role

of culture in coordinating actions within the members belonging to the same culture (Fiske, 2000; Chwe, 2013; Jackson and Xing, 2014). We show that cultural perceptions also help coordinate information transmission across cultures.

We also contribute to the literature on social connections in financial transactions. Much of this literature examines the impact of social ties or social networks, which are endogenous, adaptable and influenced by individual choices (Becker, 1996; Fisman et al., 2017). In contrast, we examine social connections between borrowers and lenders who are unfamiliar with each other. Their behavior is primarily influenced by the other party's inherent cultural endowment, predetermined at birth, and passed through generations. This suggests that economic differences stemming from disparities in cultural endowment among communities can endure over time.

Our research is also relevant to the growing literature about peer-to-peer lending. Previous studies have looked at various metrics of the creditworthiness of borrowers, such as the physical appearance of borrowers (Duarte et al., 2012), physical proximity to lenders (Lin and Viswanathan, 2016), and gender (Chen et al., 2020). While these studies examine how participants in P2P market view individual attributes, they do not focus on cultural attributes. In a closely related paper, Hasan et al. (2022) show that borrower and lender behavior is correlated with contemporaneous voluntary blood donation, nongovernmental organization participation, corporate reputation survey, and citizen reputation survey of the borrower's region. They consider these outcomes to be measures of social capital. As social capital is an imprecise concept (Bhandari and Yasunobu, 2009), a causal interpretation requires identifying the source of exogenous variation in the outcomes considered and isolating it from the economic and institutional environment in which economic decisions are taken (Fernández, 2011). Heeding Zingales (2015) caution against potential spurious correlations, we seek an exogenous cultural factor and the channels through which it impacts economic behavior. We show that clan culture of borrower, an unambiguously exogenous cultural attribute, and its perception impact behavior of borrowers and lenders in the P2P market. Further, we show that the effect of clan culture on borrower behavior is stronger among older borrowers and among rural borrowers, a finding consistent with how clan culture operates, but not necessarily with general social capital. Finally, we show that culture acts as an informal economic mechanism that compensates for poor formal institutional and governance mechanisms.

2. Potential effects of clan culture on P2P lending market

We now review the literature on clan culture to draw hypotheses about the how a borrower's clan culture impacts borrower and lender behavior. Clans come together for risk sharing and resource pooling (Chen et al., 2022c), build physical facilities such as ancestral halls to worship ancestors, maintain genealogical records, and record rules and norms to be followed by members of the clan (Peng, 2004). Clan culture has endured for thousands of years and still impacts norms and cultural values (Fan et al., 2021). Lineage activities such as constructing ancestral halls and maintaining genealogy records continue to be prevalent in China (Greif and Tabellini, 2017).

Genealogy compilation is a crucial aspect of the clan system. Genealogy books serve as a record of the lineage from a common ancestor and recount the clan's honored descendants and events. They also outline the clan's rules and principles of conduct, emphasizing the importance of qualities such as hard work and integrity. Genealogical compilation and common property ownership and ancestral worship strengthen bonds among clan members (Xu, 2012; Cheng et al., 2021). Clans also regulate the behavior of their members and uphold their reputation through internal governance structures and codes of conduct (Watson, 1982; Peng, 2004).

Clan culture has impacted the development of Chinese social structures (Greif and Tabellini, 2010; Hu, 1948). Clans arbitrate compromises, reducing the need for formal legislative and enforcement institutions (Greif and Tabellini, 2010). The Chinese state did not articulate a commercial code until the late nineteenth century and there was no separate legal branch in the Chinese administration. Intra-clan loyalty and interactions limited urbanization, city size, and self-governance, facilitating state control over cities (Greif and Tabellini, 2010). Chen et al. (2022c) suggest that clan culture acted as a substitute to financial markets and limited China's financial development. The tradition of communal property ownership and the pooling of family financial resources reduced the dependence on external capital (Chen et al., 2022c; Cheng et al., 2021). The clan system facilitated resource pooling for business ventures and risk sharing and was the predominant platform for interpersonal cooperation for many generations (Faure, 2006; Pomeranz, 2000; Chen et al., 2022c).

The members of a clan abide by a set of norms for education, life, social interaction, and etiquette (Peng, 2004), which influences their preferences and values (Guiso et al., 2006; Zhang, 2020), and consequently their behavior as market participants. For example, Huang et al. (2022) show that CEOs from regions with a stronger clan culture make more conservative business decisions. At an individual level, Alesina and Giuliano (2015) note that inheritors of stronger familial ties are less mobile and favor stricter labor market rules.

Clan culture promotes strict ethical rules. Greif and Tabellini (2010) point out that the role played by external law enforcement in sustaining cooperation in Europe is taken over by clan culture in China, relying on moral bonds and reputation to deter cheating. Behavior deviating from local social norms can result in social sanctions (Akerlof, 1980) such as warnings from clan elders (Chen et al., 2022c), and even expulsion from the clan (Peng, 2004). To maintain reputation, clans try to prevent their members from harming outsiders, refuse their offenders clan protection (Greif and Tabellini, 2017), and record the offending behaviors of clan members, particularly those with high status, in the genealogy book (Huang et al., 2022). These ethical and reputational concerns are consistent with the evidence that corporate executives from regions with stronger clan culture take less risk and adopt conservative corporate policies (Huang et al., 2022). We expect such behavior to carry over to the loan market and manifest as lower default rate. The effect of borrower values has been demonstrated by Jiang and Lim (2018) who use survey data to show that households that inherit cultural values associated with trustworthiness are less likely to default on household debt. A higher clan culture of a borrower can inculcate stricter ethical behavior and result in a reduced default rate. Further, the reputation of ethical behavior by borrowers with higher clan culture can act as a signal of their creditworthiness and increase their chances of getting loans. Thus, we propose the following two hypotheses:

Hypothesis 1. Borrowers from regions with higher clan culture are more likely to obtain loans than borrowers from regions with lower clan culture.

Hypothesis 2. Borrowers from regions with higher clan culture are less likely to default than borrowers from regions with lower clan culture.

We now discuss other potential mechanisms that may impact the behavior of borrowers of higher clan culture and the behavior of lenders towards borrowers with higher clan culture. One alternative mechanism is social ties. Clan members use clan networks for sharing information, especially in the absence of formal institutions supporting the market (Greif and Tabellini, 2010). The kinship-based social networks embedded in clans permit interpersonal cooperation (Chen et al., 2022c) and facilitate financing (Zhang, 2020). Karlan et al. (2009) show that network connections between individuals act as social collateral to secure informal borrowing. P2P borrowers with higher clan culture may be able to leverage their stronger social ties to avoid defaults on loans.

Trust can influence lender behavior. Hagendorff et al. (2023) show that lenders whose Chief Executive Officers are from countries with higher trust attitude charge lower interest rate on syndicated loans. Duarte et al. (2012) perform analysis of borrowers' pictures to show that lender are more willing to lend to borrowers they trust more. Clans typically establish regulations that mandate harmonious coexistence and mutual assistance among members, thereby reinforcing trust between them (Cheng et al., 2021). Trust can extend to interactions with those outside the clan because clans encourage members to avoid conflict or inappropriate actions that can bring shame to their clan and harm family reputation (Allen et al., 2005; Xu and Yao, 2015; Zhang, 2020). Further, since a clan member's identity is closely associated with their clan (Landa, 1994) and identity encompasses reputation, reputational concerns reinforce trust between clan members (Akerlof and Kranton, 2000). Clans often reside in the same area for hundreds of years, facilitating the development of trust (Karlan et al., 2009). Enhanced social trust in clans facilitates collective action and provision of public goods (Xu and Yao, 2015). If trust positively affects economic exchange and investment (Guiso et al., 2008, 2009), lenders with a higher clan culture may be more willing to lend, either to all borrowers, or to borrowers with higher clan cultures. We attempt to test these mechanisms but are limited by the sparsity of data about lenders' clan culture.

Clan culture may also have an indirect effect on P2P loan outcomes through its impact on economic development. In particular, Zhang (2020) uses survey and census data to show that a higher clan culture leads to a greater development of entrepreneurship and private sector growth. Our empirical analysis controls for measures of local economic development.

3. Data

Our data consists of loan listings posted on RRD, bids on these loan listings from investors, and the repayment performance of borrowers on loans that were funded. Borrowers making loan requests at RRD must disclose to the platform personal information including age, gender, education, income, marital status, house ownership, employment information, and address. They also supply a title, a description of why they need a loan, the loan amount requested, and the loan maturity (ranging from 3 months to 36 months). RRD verifies the authenticity of essential details such as borrowers' national identification cards, gender, age, and addresses. Borrowers optionally provide additional certificates to support the validity of their information, such as income and education. RRD issues its own credit ratings for borrowers based on their information disclosure, borrowing history, and repayment performance, with the following levels in decreasing order of creditworthiness: AA, A, B, C, D, and HR (High Risk). The ratings can change over time. Potential investors observe the information provided by borrowers to the platform.

We restrict our sample to loan listings posted on RRD between January 1, 2012, and December 31, 2015, to avoid periods with significant institutional changes at RRD in the initial launch period and after 2015. We exclude loan listings guaranteed by the platform because they are not typical P2P loans where investors assume risk. We winsorize loan amount and borrower age at 1% and 99%. Our resulting sample has 341,348 loan listings, 21,371 of which were successfully funded. Among the successfully funded loans, 2,413 experienced a default, while the rest were repaid.

We use data from the China General Social Survey (CGSS) in 2012 and 2013 to assess individuals' perception of society, government, and economy.[3] We also use city-level economic data on population, GDP, number of certified lawyers, and the number of banks.

3.1. Key variables

We follow Zhang (2020) and measure clan culture based on the total number of genealogies compiled. We measure clan culture at a city level. Our genealogy data are from The General Catalog of Chinese Genealogy compiled by Shanghai Library and published in 2008. The catalog, the largest collection of Chinese genealogies, consists of 52,401 genealogies written in either mainland China or overseas, covering thirty one provinces and 286 prefecture cities. For each genealogy, the catalog records its written or updated date and the clan's location. We measure the strength of local clan culture as Clan Culture, calculated as the logarithm of one plus the number of genealogies compiled in a city per 1 million of population of the city.

The geographical variation in clan culture is depicted in Fig. 2. Clan culture is stronger in Southeast China and comparatively weaker in the northern and western parts of China. This spatial distribution is consistent with the documented geographical patterns of historical clan organizations (Hu, 1948; Freedman, 1958; Feng, 2013).

[3] The CGSS, conducted by Renmin University of China, is the most representative social survey in China. In 2013, 11,438 people were interviewed across all provinces.

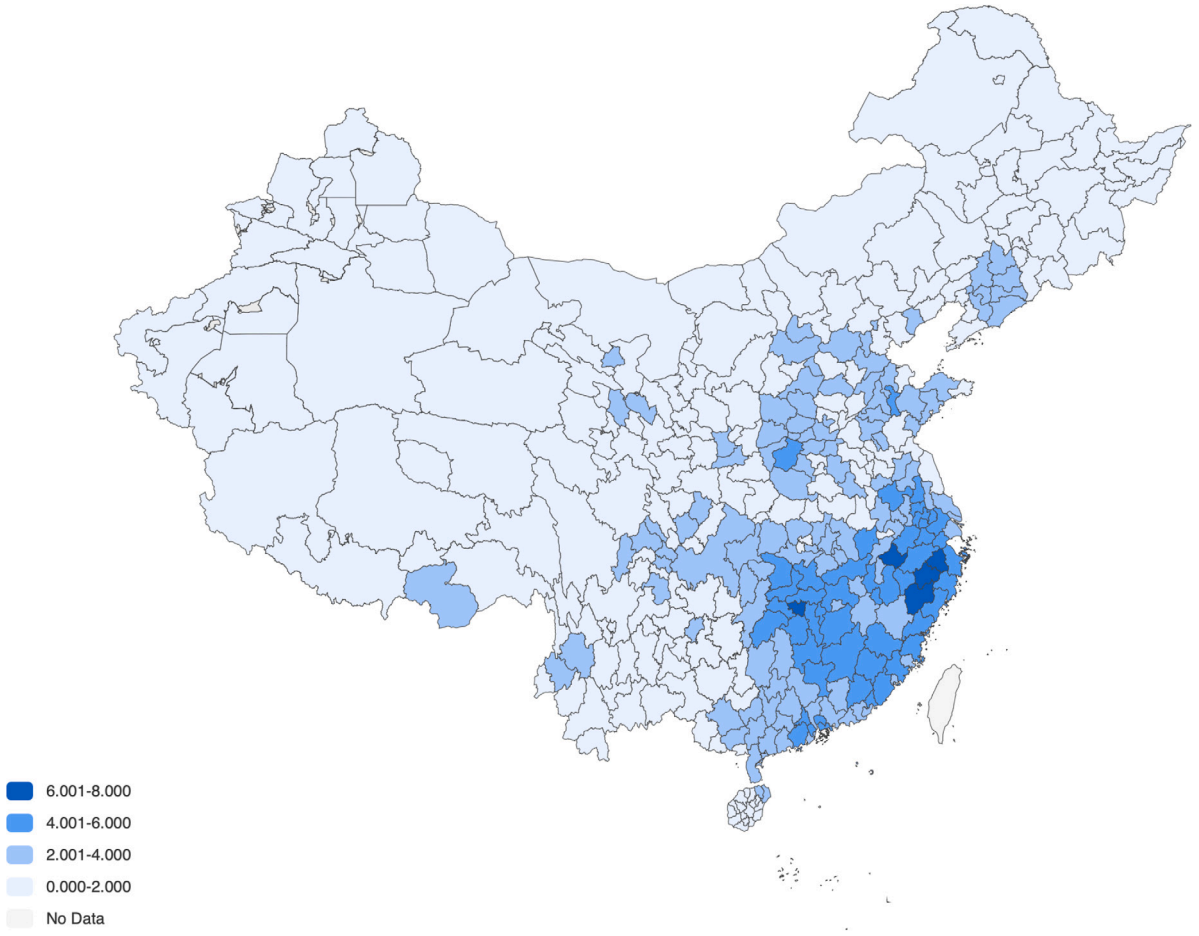

Fig. 2. Spatial Distribution of Clan Culture at City-Level.

We measure a loan listing outcome with the variable Success, which takes the value 1 if a loan listing is fully funded, and 0 otherwise. Loan performance for successful loan listings is measured with the variable Default taking the value 1 if the loan results in a default, and 0 otherwise. Another measure of loan performance, Repayment Ratio, is the ratio of the amount repaid by the borrower to the repayment amount. Following Wang and Tong (2020), we define Funding Time of a loan as the standardized time it takes for the loan to be fully subscribed, adjusted for the loan amount. A smaller value reflects greater popularity of the loan listing among investors. The Average bid amount is defined for a successful loan listing as the average bid amount across all bids.

We incorporate two kinds of control variables in the regression. The first set of control variables relates to loan listing characteristics, such as the term, the interest rate, and the amount requested. The second set of control variables is borrower-specific, such as credit score and whether the borrower has a mortgage or a vehicle loan. These also include city-level controls including GDP per capita to measure economic development, the number of certified lawyers per capita to capture the legal environment, and the number of banks per capita to measure financial environment. Table 1 lists variable definitions. Our main empirical methodology assesses the impact of the borrower's clan culture on lender behavior through the following model:

$$f\left(\text{Probability}\left(Success_i = 1\right)\right) = \alpha_0 + \alpha_1 ClanCulture_i + \alpha_2 X_i + u_{t(i)} + \epsilon_i. \tag{1}$$

where f is a link function, $Success_i$ is the funding outcome for loan listing i, X_i is a vector of control variables including loan characteristics and borrower characteristics (including characteristics of the borrower's city at the time of loan), $u_{t(i)}$ is the year-month effect corresponding to the month $t(i)$ of loan listing i, and ϵ_i is a random error term assumed to be independently and identically distributed across loan listings. Our main empirical methodology to assess the impact of the borrower's clan culture on the performance of a loan estimates the following model:

$$f\left(\text{Probability}\left(Default_i = 1\right)\right) = \alpha_0 + \alpha_1 ClanCulture_i + \alpha_2 X_i + u_{t(i)} + \epsilon_i. \tag{2}$$

where the link function f corresponds to logit or probit specification. Alternatively, we replace the dependent variable with $RepaymentRatio_i$. We cluster standard errors at a province level in most regressions. Our results continue to hold if we cluster standard errors at a city level.

Table 1
Variables and definitions.

Variable	Name	Definition
The probability of funding of a loan listing	Success	1 if a loan listing is fully funded, and 0 otherwise.
The probability of default of a loan listing	Default	1 if a loan has defaulted, and 0 otherwise.
The Funding time of a successful loan	Funding Time	The time it takes for a given loan to be fully subscribed divided by the loan amount.
Repayment ratio of a successful loan	Repayment Ratio	The amount of repayment made by the borrower relative to the total amount if fully repaid of successful loan listings.
The number of lenders	Bidders	The number of bidders.
The purpose of borrowing	Purpose	The purpose of a loan: 0 = did not disclose; 1 = individual consumption; 2 = others; 3 = medical; 4 = investment; 5 = education; 6 = short-term turnover; 7 = renovation; 8 = purchasing house; 9 = purchasing car; 10 = wedding
Gender of Borrower	Gender	1 if a borrower is female, and 0 otherwise.
Loan Amount (RMB)	Amount	Loan amount requested by the borrower.
Interest Rate (%)	Interest	The annual interest rate that a borrower pays on the loan.
Average invested amount	Average Bid Amount	The average amount bid by investors for a loan listing.
Loan Term (months)	Loan Term	Loan term requested by a borrower.
Credit Rating	Credit rating	Credit rating of a borrower: 1 = HR, 2 = E, 3 = D, 4 = C, 5 = B, 6 = A, 7 = AA.
House Property	House Ownership	1 if a borrower has a property, and 0 otherwise.
Car Property	Car Ownership	1 if a borrower has a car, and 0 otherwise.
Age (years)	Age	Age of a borrower.
Education Level	Education	Education achievement of a borrower: 0 = did not disclose; 1 = middle/high school; 2 = college graduate; 3 = university graduate; 4 = postgraduate.
Income (RMB)	Income	Monthly income of a borrower: 1 = less than 1000; 2 = 1001–2000; 3 = 2001–5000; 4 = 5001–10,000; 5 = 10,001–20,000; 6 = 20,001–50,000; 7 = more than 50,000.
Marital Status	Married	1 if married, and 0 otherwise.
Working Experience	Work Experience	Borrowers' working experience: 0 = did not disclose; 1 = no experience; 2 = less than 1 year; 3 = 1–3 years; 4 = 3–5 years; 5 = more than 5 years.
Number of Loans obtained	Log Previous Loans	Natural log of the number of times that a borrower has successfully obtained a loan.
GDP per capita of a city	GDP Per Capita	GDP per capita, a measure of the economic development of a city.
The number of banks per capita of a city	Banks Per Capita	The number of banks per 10,000 persons in a city, a measure of the financial environment.
The number of certified lawyers per capita of a city	Lawyers Per Capita	The number of certified lawyers per 10,000 persons, a measure of the legal environment of a city.

This table presents the definitions of variables used in the paper.

3.2. Summary statistics

Table 2 presents summary statistics of different variables. With a 6% average financing success rate and an 11% default rate, competition for funding is fierce and credit risk is significant on this platform. The average loan size requested is RMB 64,138 (about $9,162) and the average interest rate offered is 13.82%. The majority of borrowers on the RRD platform have a poor credit rating with an average value of 1.12. Their average age is around 32 years. About 43% report that they own houses and about 18% report that they own a car. The average loan maturity requested is around 16 months, and the maximum is 3 years. The average investment of an investor in a successful loan is RMB 1,966 (around $286) and the average repayment ratio is 91%. Successful loans are funded with an average of 25 bids in around 76 minutes.

The average value of clan culture across cities is 2.10 and the highest value is 6.82. We also present the summary statistics of the relevant 2012 and 2013 CGSS data, including the answers to the questions that we use in analysis and personal details such as gender, age, education, and income of the survey participants. The questionnaire employs a rating scale where a score of 1 indicates the least agreeable attitude and a score of 5 signifies the most agreeable attitude.

4. Results

4.1. Clan culture and investor and borrower behavior

Our empirical analysis focuses on the hypotheses that a borrower from a higher clan culture region is more likely to get her loan funded and is also more likely to repay the loan. Fig. 3 shows that province-level clan culture is positively associated with loan success rate and negatively associated with default rate. Fig. 4 shows similar patterns using city-level clan culture. We assess the

Table 2
Summary statistics.

	Mean	Median	SD	Min	Max	N
Loan Listing Characteristics						
Loan Amount	64,138.74	30,000.0	98,506.81	3000.0	1,000,000.0	341,348
Loan APR	13.82	13.0	3.02	6.1	24.4	341,348
Loan Term	16.23	12.0	9.48	1.0	36.0	341,348
Credit Rating	1.12	1.0	0.61	1.0	7.0	341,348
Income Level	3.98	4.0	1.17	1.0	7.0	336,948
Age	31.62	30.0	6.70	22.0	53.0	341,345
Married	0.54	1.0	0.50	0.0	1.0	341,009
Education	1.07	1.0	0.88	0.0	4.0	339,031
Work Experience	1.81	1.0	1.31	0.0	5.0	335,952
House Ownership	0.43	0.0	0.49	0.0	1.0	341,348
Car Ownership	0.18	0.0	0.38	0.0	1.0	341,348
Previous Loans	0.28	0.0	2.40	0.0	144.0	341,348
Success	0.06	0.0	0.24	0.0	1.0	341,348
Successful Loan Characteristics						
Number of Bidders	24.85	13.0	45.63	1.0	747.0	23,237
Average Bid Amount	1,966.18	1,111.1	4764.85	83.3	200,000.0	23,237
Duration	4,561.23	102.0	29,344.66	0.0	603,249.0	23,229
Funding Time	0.36	0.0	3.83	0.0	111.8	23,229
Repayment Ratio	0.91	1.0	0.26	0.0	1.0	21,341
Default	0.11	0.0	0.32	0.0	1.0	21,371
City Characteristics						
Clan Culture	2.10	1.97	1.71	0.0	6.82	346
GDP Per Capita	4.64	3.70	3.20	0.702	27.73	1357
Banks Per Capita	1.24	1.28	0.51	0.19	3.80	1322
Lawyers Per Capita	0.18	0.06	0.68	0.0	10.99	1411
China General Society Survey (CGSS) 2013 Data						
Unethical behavior can be done for profit	1.18	1.0	0.43	1.0	3.0	4910
Dissatisfied with the current social morality	2.89	3.0	0.86	1.0	5.0	5630
CGSS 2012 Data						
Frequently socialize with relatives	3.79	4.0	0.76	1.0	5.0	11,734
Frequently socialize with friends	3.67	4.0	1.01	1.0	5.0	11,755
Majority of people can be trusted	3.47	4.0	1.00	1.0	5.0	11,759
People will take advantage of you if you're not careful	3.06	3.0	1.07	1.0	5.0	11,755
Female	1.49	1.0	0.50	1.0	2.0	11,765
Minority	0.09	0.0	0.28	0.0	1.0	11,765
Education	4.85	4.0	3.01	1.0	14.0	11,763
Age	51.07	50.0	24.34	19.0	86.0	11,765
Income	21,053.93	13,000.0	32,516.42	0.0	1,000,000.0	11,765

This table reports the summary statistics of listing and loan characteristics, the demographic, income, and education information of borrowers, the clan culture measures and province-level economic and financial variables by using RRD data during 2012–2015. It also reports the summary statistics of individual characteristics and attitudes towards trust, socializing and moral ethics based on CGSS data.

effect of clan culture on lending performance by estimating the model in (1). Table 3 reports the results. The dependent variables are the borrowers' loan funding success, the time it takes for a loan to be fully funded, and the average bid amount. We include borrower characteristics, loan characteristics, and the institutional environments of borrowers' home city as control variables.

Columns (1) and (2) show the influence of a borrower's clan culture on the probability that a loan listing is funded. The difference between the two columns is the inclusion of city-level control variables in column (2). The results from both columns show that borrowers from regions with higher clan culture are more likely to get their loans requests funded. The coefficient of clan culture in column (2) is 0.042 with a *t*-statistic of 2.45. The marginal effect (reported below *t*-statistic) is 0.001, and is significant at the 5% level, suggesting that a unit increase of clan culture increases the borrowing success rate on average by 1.59% (0.001/0.063). Column (3) presents the results of Cox Proportional Hazard Model. In the Cox regression, we set the survival time as the time elapsed from the release of the loan listing on the platform to the time when the loan gets funded, measured in 30-minute increments. The results again show that a strong clan culture is positively and significantly related to funding success. Columns (4) and (5) show that loan listings of borrowers from regions with higher clan culture are more popular among investors, since the coefficient of Clan Culture in column (5) is −0.009 (*t*-statistic of −3.17) and significant at the 1% level, suggesting that among those successful loan listings, a unit increase in Clan Culture decreases the funding time by about 0.9%. Columns (6) and (7) show a positive significant correlation between the average amount invested by lenders in successful loan listings and borrowers' clan culture (*t*-statistics of 3.81 and 3.79, respectively), indicating that on average, lenders tend to invest greater amounts in loans of borrowers from a city with a higher clan culture. The findings in Table 3 collectively support Hypothesis 1.

The coefficients of the loan-level control variables show that borrowers with higher credit ratings, higher income levels, higher education levels, and longer work experience have higher funding success, while borrowers providing higher interest rates have lower funding success rate, consistent with prior literature (Chen et al., 2020).

Table 3
Clan culture and borrower success.

	(1) Success	(2) Success	(3) Success hazard rate	(4) Funding time	(5) Funding time	(6) Log average bid amount	(7) Log average bid amount
Clan Culture	0.051***	0.042**	0.021***	−0.009**	−0.009***	0.023***	0.022***
	(3.42)	(2.45)	(4.64)	(−2.51)	(−3.17)	(3.81)	(3.79)
	[0.002***]	[0.001**]					
Loan APR	−0.178***	−0.179***	−0.142***	−0.038***	−0.038***	0.049***	0.048***
	(−31.04)	(−31.60)	(−36.76)	(−6.66)	(−6.67)	(15.45)	(15.80)
Female	0.051	0.050	0.038*	0.006	0.006	0.070***	0.069***
	(1.54)	(1.49)	(1.89)	(0.36)	(0.33)	(3.94)	(3.91)
Age	0.020***	0.020***	0.019***	0.001	0.001	0.010***	0.011***
	(9.61)	(9.79)	(16.95)	(0.69)	(0.66)	(9.93)	(10.04)
Credit Rating	1.131***	1.133***	0.600***	−0.019***	−0.019***	0.114***	0.114***
	(29.95)	(29.52)	(110.65)	(−3.56)	(−3.58)	(19.36)	(18.93)
Loan Term	−0.030***	−0.030***	−0.014***	0.004***	0.004***	0.013***	0.013***
	(−13.68)	(−13.72)	(−15.47)	(5.45)	(5.40)	(15.39)	(15.60)
Education	0.258***	0.257***	0.152***	−0.014**	−0.015**	0.003	0.001
	(10.65)	(11.01)	(17.59)	(−2.71)	(−2.56)	(0.32)	(0.17)
Log Previous Loans	0.719***	0.717***	−0.172***	−0.059***	−0.059***	−0.137***	−0.137***
	(8.70)	(8.72)	(−12.50)	(−4.74)	(−4.73)	(−7.22)	(−7.67)
Income Level	0.127***	0.126***	0.100***	0.001	0.001	0.128***	0.127***
	(7.18)	(6.98)	(17.47)	(0.26)	(0.20)	(22.16)	(20.80)
Married	0.093***	0.093***	0.100***	0.022	0.023	0.026*	0.026*
	(4.91)	(5.00)	(5.63)	(1.55)	(1.57)	(1.93)	(1.96)
Work Experience	0.244***	0.245***	0.139***	−0.004	−0.004	−0.051***	−0.048***
	(18.91)	(18.30)	(20.67)	(−0.68)	(−0.68)	(−6.54)	(−6.48)
House Ownership	−0.067**	−0.062*	−0.006	−0.040***	−0.041***	0.028**	0.032***
	(−2.02)	(−1.88)	(−0.38)	(−3.29)	(−3.44)	(2.69)	(3.20)
Car Ownership	0.040	0.039	0.093***	0.001	0.001	0.046***	0.045***
	(1.03)	(1.03)	(5.28)	(0.05)	(0.05)	(3.85)	(3.99)
GDP Per Capita		0.024***	0.018***		−0.001		0.006
		(2.73)	(5.73)		(−1.03)		(1.65)
Banks Per Capita		−0.029	−0.017		0.031**		−0.034
		(−0.44)	(−0.79)		(2.43)		(−1.53)
Lawyers Per Capita		−0.307**	−0.222***		0.009		0.010
		(−2.32)	(−3.86)		(0.23)		(0.13)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Purpose Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	334,473	333,426	333,411	21,045	20,990	22,874	22,815
Adjusted R^2				0.06	0.06	.36	.36
F Statistic				17.19	15.15	310	298.7

This table presents the results from the regressions of the funding success, popularity, and the log of the average bid amount on borrowers' clan culture and a set of control variables. Year dummies, month dummies and purpose dummies are also included. Columns 1 and 2 use probit models and Column 3 uses Cox proportional-hazards model. Columns 4–7 use OLS regressions. The values in the square bracket in the column 1 and column 2 report the corresponding marginal effects. Z-statistics based on robust standard errors clustered at the province level are reported in parentheses.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

Table 4 presents the estimation results of regressions that test Hypothesis 2. The dependent variable is Default or Repayment Ratio for loans issued for successful loan listings. We include loan-level, borrower-level, and city-level control variables. The coefficient on Clan Culture in column (1) is negative and statistically significant (−0.071 with a *t*-statistics of −3.02). The marginal effect is −0.002, significant at the 1% level, suggesting that a unit increase in clan culture decreases default on average by 1.78% (0.002/0.112). While column (1) estimates a Logit model, column (2) presents estimation results from a Probit model. The probability of default continues to be negatively and statistically significantly related with borrowers' clan culture. We consider the Repayment Ratio as another measure of the borrowers' performance, that can capture all payment information for a defaulted loan. The results in column (3) show that a unit increase in Clan Culture raises the Repayment Ratio by 0.5%. Finally, since more than 12% of the values of Repayment Ratio are 1, we adopt Tobit model to account for censoring. The findings in column (4) show that the coefficient of Clan Culture is statistically significantly positive (0.041 with a *t*-statistic of 2.88). The findings in Table 4, thus, support Hypothesis 2. Collectively, our findings confirm that clan culture has a positive influence on both ex-ante borrower funding success and ex-post borrower repayment performance.

Jiang and Lim (2018) find that borrowers' values have a stronger impact on decisions of weaker borrowers. We also expect the effectiveness of clan culture in improving creditworthiness to be greater in borrowers who are otherwise considered higher-risk based on other observable characteristics. Therefore, we posit that the negative (positive) relation between clan culture and default (repayment ratio) is stronger for riskier borrowers. According to empirical results in Table 4, these are the borrowers with lower credit rating, lower education level, and less working experience. To test this hypothesis, we classify borrowers into those with low

Table 4
Clan culture and loan default.

	(1) Default	(2) Default	(3) Repayment ratio	(4) Repayment ratio
Clan Culture	−0.071***	−0.041***	0.005**	0.041***
	(−3.02)	(−3.15)	(2.31)	(2.88)
	[-0.002***]	[-0.003***]		
Loan APR	0.147***	0.082***	−0.007***	−0.086***
	(8.00)	(8.18)	(−4.63)	(−8.44)
Female	−0.157	−0.096*	0.015*	0.128**
	(−1.55)	(−1.72)	(1.97)	(2.03)
Age	0.033***	0.019***	−0.002***	−0.020***
	(10.73)	(11.35)	(−9.35)	(−12.21)
Credit Rating	–1.668***	−0.748***	0.051***	0.893***
	(−19.04)	(−18.80)	(16.78)	(21.58)
Loan Term	0.034***	0.019***	−0.004***	−0.020***
	(6.76)	(6.43)	(−6.20)	(−7.03)
Education	−0.415***	−0.221***	0.026***	0.246***
	(−11.90)	(−11.16)	(9.95)	(10.20)
Log Previous Loans	0.722***	0.416***	−0.066***	−0.421***
	(6.40)	(6.38)	(−8.64)	(−7.33)
Income Level	0.282***	0.159***	−0.016***	−0.157***
	(14.19)	(14.24)	(−10.17)	(−13.49)
Married	0.048	0.022	−0.009***	−0.012
	(1.03)	(0.85)	(−3.27)	(−0.47)
Work Experience	−0.065**	−0.033**	0.007**	0.040**
	(−2.14)	(−1.96)	(2.68)	(2.23)
House Ownership	−0.068	−0.029	0.003	0.035
	(−1.39)	(−1.08)	(1.00)	(1.18)
Car Ownership	−0.151**	−0.100***	0.017***	0.109***
	(−2.17)	(−2.73)	(3.39)	(2.70)
GDP Per Capita	−0.019*	−0.011	0.001	0.011
	(−1.69)	(−1.57)	(1.55)	(1.50)
Banks Per Capita	−0.007	0.016	0.001	−0.007
	(−0.07)	(0.25)	(0.11)	(−0.11)
Lawyers Per Capita	−0.222	−0.127	0.014	0.177
	(−0.77)	(−0.76)	(0.83)	(0.98)
Year Fixed Effects	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes
Purpose Fixed Effects	Yes	Yes	Yes	Yes
Estimation	logit	probit	linear	tobit
Observations	21,006	21,006	20,976	20,976
Adjusted R^2			.12	
F Statistic			206	.

This table presents the regression results of loan default on borrowers' clan culture, controlling for borrower and loan characteristics. Columns 1 and 2 adopt default probability as dependent variable and implement Logit and Probit regressions, respectively. Columns 3 and 4 adopt repayment ratio as dependent variable and implement OLS and Tobit regressions, respectively. The values in the square bracket in the column 1 and column 2 report the corresponding marginal effects. Z-statistics based on robust standard errors clustered at the province level are reported in parentheses. All models include year, month and purpose fixed effects.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

education (graduated from a college or below), high education (graduated from a university or above), low work experience (less than one year of work experience) and high work experience (more than one year of experience), low credit rating (bottom quartile of credit rating), and high credit rating (top quartile of credit rating). Our unreported regressions with Default or Repayment Ratio as the dependent variables show that clan culture has a statistically significant negative impact on default rate and positive impact on repayment ratio in borrowers with low education, low work experience, and low credit rating, but not in borrowers with high education, high work experience, and high credit rating, confirming that clan culture is a stronger predictor of loan performance for riskier borrowers.

While we include several control variables measured at a city-level, there may be omitted variables that are common to cities in the same province. We attempt to address this concern by including more control variables and by including province-level fixed effects in regressions. Province-fixed effects are feasible in our analysis if clan culture varies across multiple cities in the province. However, four provincial-level municipalities – Beijing, Shanghai, Tianjin, and Chongqing – contain a single prefecture-level city each. We merge each with its geographically closest and economically integrated neighboring province when defining the fixed effect groups. Beijing and Tianjin are grouped with Hebei, Shanghai with Zhejiang, and Chongqing with Sichuan. All regressions are then estimated with province fixed effects defined on these merged units.

We also include urbanization rate, unemployment rate, housing price changes, population, and road density as additional control variables. Urbanization rate, the percentage of urban permanent resident population is obtained from National Bureau of Statistics

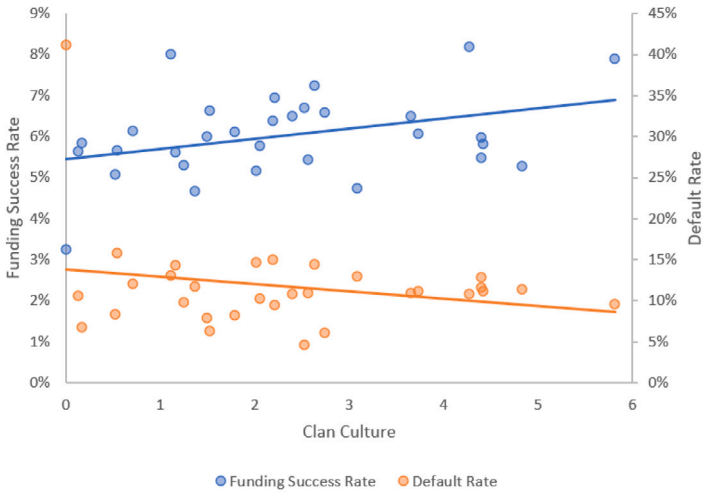

Fig. 3. Province-Level Clan Culture, Funding Success, and Default Rate.

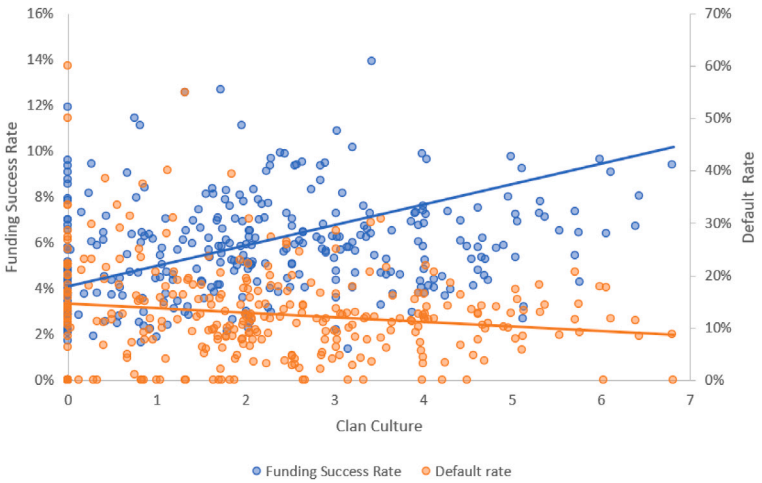

Fig. 4. City-Level Clan Culture, Funding Success, and Default Rate.

of China (NBS), China City Statistical Yearbook and China City Statistical Annual Reports. Unemployment rate, the proportion of registered unemployed within the urban labor force, is from China City statistical yearbook and city-level statistical bulletins. Housing price change is defined as the percentage increase in annual average residential unit listing price (CNY/m^2) relative to the previous year based on data from several real estate data websites. Road density, the ratio of highway mileage to urban land area, is from China City Statistical Yearbook and China Regional Economic Statistical Yearbook.

The regression results are presented in the Appendix in Table 14. Our main results continue to hold qualitatively. That is, borrowers with higher clan culture are more likely to get their loans funded, get loans funded faster, attract larger bids, are less likely to default, and pay higher fractions of their loan amounts on average.

4.2. Clan culture of lenders

We now examine how clan culture of lenders affects their behavior. Unfortunately, the platform does not disclose demographic information about lenders. However, some participants on RRD platform are both borrowers and lenders. Participants can freely switch roles according to their needs. We obtain demographic information about bidders who have also been borrowers at RRD. This data subsample consists of 29,251 bids of 1,811 unique lenders (bidding borrowers) with investments in 10,845 loans.

We examine how lenders' clan culture affects their behavior in Table 5. We first test how lenders' clan culture influences their investment amount. We use the Log Bid Amount as the dependent variable in columns (1) and (2) and include lender-specific variables as independent variables along with loan and borrower controls. Since Lin and Viswanathan (2016) show that home bias influences investment in the P2P market, we include a dummy variable Homecity, equal to 1 if lenders and borrowers are from

Table 5
Lender clan culture and bidding behavior.

	(1) Log Bid Amount	(2) Log Bid Amount	(3) Decision Time	(4) Decision Time	(5) Bid Timing	(6) Bid Timing
Lender Clan Culture	−0.036***	−0.048***	0.103***	0.092***	0.689***	0.497***
	(−4.32)	(−5.47)	(9.37)	(7.83)	(6.71)	(4.87)
Borrower Clan Culture	0.029***	0.025***	−0.048*	−0.054*	−0.292**	−0.331**
	(5.80)	(4.43)	(−1.80)	(−1.75)	(−2.06)	(−2.18)
Homecity	−0.035	−0.043	0.149	0.157*	-2.497*	−2.408**
	(−0.32)	(−0.43)	(21.50)	(1.72)	(−1.86)	(−2.17)
Year,Month,Purpose Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Lender, Borrower and Loan Controls	Yes	Yes	Yes	Yes	Yes	Yes
Borrower Province controls	No	Yes	No	Yes	No	Yes
Lender City controls	No	Yes	No	Yes	No	Yes
Observations	26,662	26,606	21,338	21,294	26,662	26,606
Adjusted R^2	0.07	0.08	0.44	0.45	0.02	0.02
F Statistic	48.28	41.65	171.64	140.95	10.15	9.40

This table examines the effect of lenders' clan culture on their bidding. By matching borrowers' ID with lenders' ID, we obtain a sub-sample of lenders who were also borrowers on the platform and thus obtain their demographics. In Panel A, we show the impact of lenders' clan culture on their investment behavior and use *Log Bid Amount*, *Decision Time* (defined as the logarithm of investor's adjusted decision time for investing in loan) and *Bid Timing* (defined as the amount raised by the loan before being invested by the investor divided by the total loan amount of the loan) as dependent variables, respectively. Regressions include loan controls and macroeconomic controls of both borrowers and lenders cities, and personal characteristics of borrowers and lenders. Z-statistics based on robust standard errors clustered at borrower province level are reported in parentheses.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

the same city and 0 otherwise, as a control variable. We find that lenders' clan culture is significantly negatively related to the bid amount in both columns 1 and 2 with *t*-statistics of −4.32 and −5.47, respectively. Further, the coefficients of Borrower Clan Culture in both models are positively associated with the bid amount, consistent with our main findings. Another variable we use to measure lenders' attitudes is their decision time. Liao et al. (2021) indicate that decision time of investors in the P2P market reflects their decision-making process, and a longer decision time reflects more cautious investment attitude. We follow them to define variable Decision Time as the logarithm of time duration from the listing of a loan to the placement of bid on the loan by the investor, divided by the bid amount. Columns (3) and (4) present the results, indicating that on average higher-clan-culture lenders take more time to bid. A surprising result is the effect of Homecity, suggesting that lenders take more time to bid when borrowers are from the same region.

Lastly, we examine timing of bids to analyze lender behavior. Zhang and Liu (2012) view investment timing as a crucial indicator of investors' enthusiasm towards the loan target and their information processing methods. Delayed investment timing could stem from either a conservative investment approach or an emulation of others' investment behaviors in decision-making. We define Bid Timing as the fraction of the loan that has already been funded at the time of an investor's bid. The results in columns (5) and (6) show that higher-clan-culture lenders tend to invest at a later stage. Taken together, our results suggest that lenders from regions with higher clan culture are less likely to take risks and show a more conservative attitude towards investment. This finding is consistent with Huang et al. (2022), who also show that CEOs local to the strong clan culture areas are less likely to take risks.

We have shown that borrower clan culture impacts funding and performance of P2P loans and that lenders with higher clan culture are more cautious. However, we have treated these effects as independent. We now examine whether lenders with high and low clan culture treat borrower clan culture differently and whether borrowers with high and low clan culture treat lender clan culture differently. We first examine a lender's decision to bid. For each bid by a bidder whose clan culture is known, we consider all loan listings active that day as the set of potential loans on which the bidder could have bid. This results in more than 800,000 bidder-loan observations. We estimate a regression with the binary variable representing whether a bid was made by the bidder on the loan as the dependent variable. The main independent variables are lender and borrower clan cultures and their product. The results are presented in column (1) of Table 15 in Appendix. The coefficient of lender clan culture is not statistically significant. The coefficient of borrower clan culture is positive, though not statistically significant with clustered standard errors (coefficient of 0.040 with *t*-statistic of 1.62). The coefficient of the interaction term between the two clan cultures is not statistically significant. Thus, these results fail to find evidence that lenders' preference for bidding on loans requested by borrowers with higher or lower clan culture depends on the level of their own clan culture.

We next examine whether borrowers' loan repayment behavior depends on lenders' clan culture and if so, does such behavior differ across borrowers with higher and lower clan culture. We estimate regressions with the binary variable Default and the continuous variable Repayment Ratio as the dependent variables for funded loans in which we know clan culture of at least one lender. Since we do not know the clan culture of all the lenders in these loans, we weigh the lender whose clan culture is known by multiplying his or her clan culture with the fraction of the loan that the lender invested in. We also include an interaction between this variable and the borrower clan culture. The results are presented in columns (2) and (3). Borrower clan culture has a statistically significant negative impact on Default (coefficient of −0.073 with *t*-statistic of −3.50) and a statistically significant positive impact (coefficient of 0.005 with *t*-statistic of 2.30) on the Repayment Ratio. However, loan performance does not depend statistically significantly on the lender clan culture. Further, a statistically insignificant coefficient of the interaction term suggests that borrowers with higher clan culture are more likely to repay loans regardless of their lenders' clan culture. These results suggest

that our results about borrower and lender behavior are more likely to reflect an informational mechanism rather than an affinity towards others with similar clan culture.

5. Robustness analyses

We now present several analyses to consider the sensitivity of our main results to alternative specifications.

5.1. Impact of migration

Our geography-based proxy for clan culture may not be accurate for people who migrate. It is beyond the scope of this paper to determine whether borrowers' clan culture reflects the culture of their current city or of their birth city. However, we examine if our results are sensitive to migration by distinguishing between each borrower's birth province and the residence at the time of the loan listing. Our main analysis relies on the current address reported by borrowers to RRD. We infer the birth province from the borrower's national identification number.[4] We estimated the regressions of Table 4 by replacing the clan culture based on their current city with the clan culture based on their birth province. Unreported results of these regressions are similar to our main results. The results continue to hold qualitatively if we restrict the sample to borrowers whose current province matches their birth province. We also examine whether the clan culture of the borrower's birth province or the clan culture of the borrower's current province is a stronger predictor of getting a loan funded. We find that the clan culture of the current province is a stronger predictor of loan success. This may be because a borrower's current province is more accessible to the lenders than the borrower's birth province.

5.2. Alternate measure of clan culture

Our main measure of clan culture is the density of genealogies. We now consider the number of ancestral halls as an alternate measure of clan culture. By providing clan members with a tangible location to aggregate, ancestral halls act as pivotal instruments in promoting solidarity among the members of the clan (Chen et al., 2022b). We obtained the location of ancestral halls from the website http://www.100citang.cn/zongciweb/ditu to calculate the log of the number of ancestral halls in each city normalized by the population of that city. This data is available for only 16 provinces covering around 70% of the loan listings. This reduces the variation in our new measure of clan culture. However, our results remain robust despite this limitation. Table 16 in Appendix presents the results. We continue to find statistically significant positive relations between clan culture and the likelihood of getting loan funded, and the speed of funding. In terms of performance, we continue to find that borrowers with higher clan culture are less likely to default and are more likely to have a higher repayment ratio. Overall, our results do not change qualitatively with a change in the measure of clan culture.

5.3. Endogeneity of clan culture

Clan culture is not randomly assigned to borrowers. Rather, clan culture has developed over centuries. To allay endogeneity concerns, we examine if variation in clan culture through known exogenous determinants explains our results. Formation of clans has been attributed to settlement of Hakkas following population migration caused by military conflicts (Feng, 2013). Following Zhang (2020), we use spatial distribution of the settlements of Hakkas as an instrument variable for clan culture. In unreported results, we find that the instrument variable is relevant, and a higher value of instrumented clan culture predicts a significantly higher funding success rate, lower probability of default, less time for getting funded, larger average bid amount, and higher repayment ratio.

5.4. Selection bias

Our evaluation of the impact of clan culture of borrowers on loan performance is based solely on loans that were funded and may not apply to the entire sample of potential borrowers. Specifically, since we show that borrowers with higher clan culture are more likely to get their loans funded, our sample of loans captures a greater fraction of higher clan culture borrowers than lower clan culture borrowers. If the lower clan culture borrowers whose loans were not funded are much (less) riskier than the borrowers whose loans were funded, then we may be underestimating (overestimating) the impact of clan culture on loan performance. We now attempt to overcome this potential sample selection bias.

Following Heckman (1979), we first estimate a selection model of the probability of funding success. We then estimate an OLS model with Default as the dependent variable, adding the predicted value from the first stage as an independent variable. A credible implementation of Heckman selection model is to identify from the first stage's selection model at least one exogenous independent variable that can be validly excluded from the vector of explanatory variables in the second stage regression. We consider two alternative predictors of loan success.

[4] A Chinese national identification number is an 18-digit number assigned at birth. The initial two digits of the number denote the individual's birth province. For instance, a person with identification number beginning with "11" must have been born in Beijing, RRD obtains national identification number from borrowers during the application process and reveals its first three and last three digits to lenders.

We first follow Chen et al. (2020) to leverage the peer effect for identification. Literature in finance has acknowledged the crucial role played by peers in shaping financial decision-making. For instance, Faccio et al. (2016) have adopted the percentage of firms with a female CEO as an instrument for a firm to hire a female CEO. We adopt an approach like that in Chen et al. (2020) and create an instrument called Peer Success, defined as the average loan success rate of borrowers who share similar characteristics with respect to their educational level, monthly income, and length of working experience. Specifically, we classify borrowers into different groups, each group representing a unique combination of education (5 levels), income (7 levels), and work experience (6 levels). This results in 210 groups of borrowers in the data. We include the loan success rate of peers with comparable attributes as an additional explanatory variable in the selection equation as the peer loan success rate may influence the funding probability of an individual borrower. Our rationale is that lenders may treat borrowers in the same observable peer group similarly. A borrower's probability of default, however, is likely to depend on observable or unobservable borrower-specific characteristics rather than peer success rate. Identification requires that peer success rate should not be indirectly included in the second stage as a linear combination of other variables. While the variables used to define peer groups are included in the second stage, the peer success rate, that varies across groups, is not a linear function of these variables, and is therefore, not collinear with the second stage variables.

The results of the Heckman model are shown in Table 6. Column (1) reports the first stage estimation of Success. The coefficient on Peer Success is positive and statistically significant, suggesting that increased funding success rate of peers increases the likelihood of a borrower successfully obtaining funding. In column (2), we report the results of the second-stage regression of Default after adding Inverse Mills Ratio (IMR_Peer Success) computed from the first stage. The coefficient on the Inverse Mills Ratio is positive and significant, indicating that it is appropriate to address sample selection bias. After adjusting for sample selection bias, the coefficient on Clan Culture is −0.004, and is statistically significant at 10 percent significance level. In accordance with the assumptions of the selection model, the second-stage results are from a linear regression. However, our results hold even if we perform a logit estimation in the second stage or use repayment ratio as the dependent variable. We repeat Heckman selection model with the timing of loan posting during the day as a different predictor of loan success in the first stage. Psychology literature documents that attention and cognitive resources vary systematically over the day. Work on sleep and investor attention finds that sleep loss reduces attention and dampens reactions to public announcements (Han et al., 2025). In peer-to-peer lending, bid amounts decline from morning to night and bids arrive fastest in the afternoon and slowest at night (Wu et al., 2024). We conjecture that loans listed in night may attract less attention from bidders than loans listed during the day. We include in the first stage a binary variable Midnight that takes the value one for loans listed between 11pm and 7am and takes the value zero otherwise. This variable is unlikely to be related to loan default. In the first stage estimation results reported in column (3), the coefficient on Midnight is negative and statistically significant, as expected. In the second-stage results reported in column (4), the coefficient on the Inverse Mills Ratio (IMR_Midnight) is positive and statistically significant. The coefficient on Clan Culture is −0.005 and is statistically significant at 5 percent significance level. Thus, as expected, our results suggest that borrowers with higher clan culture are less likely to default in the entire sample of borrowers.

6. Potential mechanisms

In this section, we aim to uncover potential mechanisms behind our findings. We consider ethical norms, social ties, and private sector development as the potential channels through which clan culture impacts borrower behavior. We consider the use of clan culture as a measure of borrower creditworthiness and trust as potential channels for lender behavior. Since our main variable of interest, clan culture, varies geographically, not at an individual level, we consider differential impact of clan culture across borrower, lender, and geographical characteristics to help us distinguish between different mechanisms.

6.1. Mechanism for borrower behavior

We find that borrowers from regions with higher clan culture are more likely to repay loans. To examine whether adherence to ethical norms could be a mechanism for this finding, we analyze the data from the 2013 CGSS. The CGSS questions address individuals' perception of society, government, economy, etc. The data has been used by Chen et al. (2022b), Zhang (2020) and Hasan et al. (2022). We examine two questions in the 2013 CGSS related to ethical and moral behavior. One question asks whether individuals are willing to act unethically to gain benefits, and the score ranges from 1 (never) to 3 (always). A lower score indicates more ethical behavior. The second question is about satisfaction with the current social and moral situation and the answers are on a scale of 1 (strongly satisfied) to 5 (strongly dissatisfied), with a higher value indicating more ethical behavior.

We now explore if these survey questions suggest a correlation between ethical behavior and clan culture. Table 7 presents the results of regressions with the answers to the two questions as dependent variables and Clan Culture as the main independent variable. The negative and statistically significant coefficient of Clan Culture in column (1) shows that individuals from cities with higher clan culture are less likely to state that unethical behavior is acceptable. The results in column (2) show that the result is robust to controlling for other personal characteristics.[5] The results in columns (3) and (4) suggest that those in cities with higher clan culture are more likely to hold society to higher ethical standards. The evidence in this table suggests that higher

[5] China is composed of the Han ethnic group and 55 other ethnic minorities. We define the variable minority as 1 if the survey participant belongs to an ethnic minority, and 0 otherwise. Our main results continue to hold if we exclude ethnic minorities.

Table 6
Heckman Model for Selection of Successful Loans.

	(1) Success	(2) Default	(3) Success	(4) Default
Peer Success	2.664***			
	(13.33)			
Midnight			−1.014***	
			(−8.03)	
Clan Culture	0.019**	−0.004*	0.021***	−0.005**
	(2.21)	(−1.75)	(2.70)	(−2.18)
IMR_Peer Success		0.145***		
		(7.13)		
IMR_Midnight				0.068***
				(7.27)
Income Level	0.005	0.033***	0.052***	0.027***
	(0.50)	(17.40)	(5.90)	(15.61)
Loan APR	−0.080***	0.001	−0.076***	0.006**
	(−31.82)	(0.42)	(−31.09)	(2.74)
Credit Rating	0.583***	−0.012	0.578***	−0.041***
	(28.81)	(−1.23)	(27.07)	(−6.90)
Female	0.019	−0.009	0.013	−0.011
	(1.21)	(−1.07)	(0.75)	(−1.25)
Age	0.009***	0.004***	0.009***	0.003***
	(9.44)	(11.52)	(9.07)	(10.52)
Loan Term	−0.014***	0.003***	−0.015***	0.004***
	(−13.79)	(3.68)	(−14.01)	(5.21)
Education	0.087***	−0.019***	0.128***	−0.024***
	(7.94)	(−7.54)	(12.59)	(−8.94)
Log Previous Loans	0.353***	0.093***	0.223***	0.085***
	(8.19)	(9.34)	(4.66)	(8.60)
Married	0.049***	0.013***	0.029***	0.013***
	(6.13)	(3.46)	(3.32)	(3.48)
Work Experience	0.095***	0.007*	0.123***	−0.002
	(11.95)	(1.91)	(18.98)	(−0.67)
House Ownership	−0.022	−0.007*	−0.020	−0.004
	(−1.44)	(−1.86)	(−1.33)	(−1.14)
Car Ownership	0.004	−0.016***	0.007	−0.017***
	(0.26)	(−2.87)	(0.37)	(−3.18)
GDP Per Capita	0.012***	−0.000	0.012***	−0.001
	(2.87)	(−0.29)	(3.07)	(−0.91)
Banks Per Capita	−0.017	−0.003	−0.024	−0.002
	(−0.54)	(−0.33)	(−0.77)	(−0.15)
Lawyers Per Capita	−0.111*	−0.034	−0.101*	−0.025
	(−1.88)	(−1.57)	(−1.67)	(−1.20)
Loan Controls	Yes	Yes	Yes	Yes
City Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes
Purpose Fixed Effects	Yes	Yes	Yes	Yes
Observations	333,426	21,006	333,426	21,006
Adjusted R^2		.14		.13
F Statistic		486.4		369.5

This table presents the Heckman two-step regression results on the probability of default. Columns 1 and 3 are estimated by Probit regression while columns 2 and 4 report the corresponding second-step linear regression results. IMR_Peer Success in column 2 is the inverse Mills ratio corresponding to the use of Peer Success in first stage in column 1. IMR_Midnight in column 4 is the inverse Mills ratio corresponding to the use of Midnight in first stage in column 3. Other control variables remain unchanged. Z-statistics based on robust standard errors clustered at the province level are reported in parentheses. All models include year, month, and purpose fixed effects.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

clan culture is associated with higher ethical standards. Some enforcement mechanisms for sustaining higher ethical standards in societies with higher clan culture have been suggested in the literature. While behavior deviating from local social norms can result in social sanctions such as warnings from clan elders (Chen et al., 2022c), expulsion from the clan (Peng, 2004), or refusal from clan protection (Greif and Tabellini, 2017), clans usually rely on moral and social sanctions and rewards rather than punishments for transgressions. Frequent interactions among clan members facilitate reputation mechanisms to discourage violations of norms (Liu, 1959).

Another mechanism for the impact of clan culture on borrower behavior can be social network. A stronger social network of a borrower can make the borrower's ability to repay more robust to adverse idiosyncratic shocks. To examine social network ties,

Table 7
Clan culture and ethics.

	(1) Unethical behavior can be done for profits	(2) Unethical behavior can be done for profits	(3) Dissatisfied with current social morality	(4) Dissatisfied with current social morality
Clan Culture	−0.019*	−0.023***	0.036**	0.033**
	(−1.76)	(−3.08)	(2.32)	(2.37)
Female		−0.010		0.022
		(−0.64)		(0.79)
Minority		−0.008*		−0.022**
		(−1.74)		(−2.39)
Education		0.000		0.036***
		(0.13)		(5.15)
Income		0.000*		0.000*
		(1.77)		(1.90)
Age		−0.001**		−0.003**
		(−2.47)		(−2.16)
Observations	5490	4919	5540	4961
Adjusted R^2	0.006	0.02	0.004	0.034
F Statistic	3.07	7.17	5.37	9.88

This table reports individual attitudes towards moral ethics based on the respondents' answers in CGSS 2013. Control variables include dummy variables for gender, ethnic status, education level, income level and age. Z-statistics based on robust standard errors clustered at the city level are reported in parentheses.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

we analyze responses to two survey questions from 2012 CGSS: frequency of social interactions with relatives and the frequency of social interactions with friends. The survey questions asked how often respondents socialized in their free time with relatives and with friends during the preceding year, with a higher score representing more frequent social interaction.

Table 8 presents the results of regressions that examine how responses to these questions correlate with clan culture. The positive and statistically significant coefficient on Clan Culture in column (1) shows that residents of areas with higher clan culture are more likely to socialize with relatives. The positive and statistically significant coefficient on Clan Culture in column (3) indicates that people in cities with higher clan culture are more likely to socialize with friends. The results in columns (2) and (4) show that these results are robust to controlling for personal characteristics. The results of additional regressions reported in columns (1) to (4) of Table 17 in the Appendix show that these findings are robust to inclusion of several additional economic control variables.

A third potential mechanism for the effect of clan culture on borrower behavior is economic development. Clan culture has compensated for formal institutions in shaping economic development in China. For example, Zhang (2020) shows that clans are associated with a higher occurrence of entrepreneurship, greater employment, and greater development of privately owned enterprises. Fan et al. (2021) find that industries dependent on relationship-specific investments tend to cluster in areas with stronger clan culture. While economic development can have an impact on the financial situation of borrowers, we already control for borrower characteristics, which presumably account for the impact of economic development on borrowers' financial situation. It is possible that greater economic development changes future economic opportunities available to borrowers and incentivizes them to repay their loans. However, our regressions in Table 4 to examine borrower behavior already control for measures of economic development, such as GDP per capital, lawyers per capita, and banks per capita. Thus, while economic development may be a channel through which clan culture influences borrower behavior, the impact of clan culture on borrower behavior that we document is incremental to the economic development channel.

We now examine if the mechanism behind the impact of clan culture on borrower behavior is more likely to be borrowers' ethics or social network. Higher ethical standards are expected to be more effective in reducing voluntary or strategic defaults by borrowers who default even though they can repay their loans. In contrast, a stronger social network is likely to be more effective in augmenting a borrower's ability to pay to reduce involuntary defaults. Our test to distinguish between ethics and social network as the main mechanism behind the impact of clan culture on borrower behavior assumes that ethics are more likely to be binding in weak legal environments. That is, ethical considerations act as a substitute for strong legal environment in deterring loan defaults (Shavell, 2002). For example, Guiso et al. (2004) point out that when enforcing a contract becomes a lengthy process, the mitigation of risks, such as financial default, will become increasingly reliant on the feasibility of ethical sanctions or the presence of ethical norms within a specific community. Benabou and Tirole (2011) show that when the costs of enforcing external punishments is high, the principal will try to economize on them by identifying the "type" of agents based on their intrinsic values such as morality and reputation. That is, intrinsic values play a more significant role in deterring misbehavior in these situations. Ethical norms act as replacements for standard governance mechanisms in overseeing deviant behavior in the absence of effective external governance mechanisms (Callen and Fang, 2015). Following this line of reasoning, we propose that if clan culture impacts borrower behavior due to the ethical norms associated with clan culture, then the effect of clan culture on borrower behavior should be more pronounced in regions with weak legal environments.

We create a binary variable Weak Legal Environment that is one for cities with less than the median number of law offices per 10,000 residents. We estimate regressions to determine whether the impact of clan culture on loan repayment depends on legal environment, keeping the same control variables as in Table 4. Table 9 presents the results. Column (1) has Default as the dependent variable. The coefficient on the interaction of Clan Culture and Weak Legal Environment is negative and statistically significant at the 5% level ($t = -2.46$). Column (2) present results of regressions with Repayment Ratio as the dependent variable. The coefficient of the interaction of Clan Culture and Weak Legal Environment is positive and statistically significant at the 1% level. These findings are consistent with clan culture acting as a substitute for legal environment, and therefore, with our hypotheses that the impact of clan culture on borrower default may arise from greater adherence to ethical norms in areas with high clan culture rather than from the benefit of a stronger social network. Our results are consistent with the evidence in Jiang and Lim (2018) who show that values acquired through cultural transmission and parental influences affect household financial decisions. The ethical norms associated with higher clan culture can represent these values. We also show that these effects are more prominent in the absence of strong formal institutions.

Hasan et al. (2022) have shown that borrowers from regions with higher social capital are less likely to default. This raises the question how is clan culture different from social capital. Unlike clan culture, social capital is an imprecise concept (Bhandari and Yasunobu, 2009) and since various studies use different measures of social capital, clan culture may overlap with some measures of social capital and not with others.[6] We now discuss how the effect of clan culture on P2P lending differs from that of general social capital. In unreported results, we find that the impact of borrower clan culture on loan performance documented in Table 4 continues to hold qualitatively when we control for measure of social capital employed in Hasan et al. (2022).

We perform two additional analyses to distinguish the effect of clan culture from the effect of general social capital. The impact of clan culture in shaping social and economic behaviors is not uniform across all demographic groups. Older individuals are more deeply embedded in clan networks and therefore, their decisions are more influenced by clan culture. This pattern arises from several factors. First, older generations were socialized in environments where clan-based trust and reciprocal obligations were central to economic interactions, whereas younger individuals have been increasingly exposed to market-based mechanisms and urbanization (Greif and Tabellini, 2010). Second, older individuals often hold greater responsibilities within clan structures, such as maintaining family connections and overseeing social obligations (Coleman, 1990). Finally, younger generations are more likely to relocate to urban areas and integrate into broader financial systems where personal creditworthiness takes precedence over kinship ties. In contrast, general social capital need not exhibit this same age-dependent variation. Social capital can be accumulated through diverse sources, including professional networks, educational institutions, and civic engagement (Bourdieu, 1986). Moreover, social capital can evolve throughout an individual's life.

We, therefore, expect the impact of clan culture to be stronger on older borrowers than on younger borrowers, unlike the impact of social capital. In Panel A of Table 10, we present regressions where the main independent variable of interest is the interaction of Clan Culture and a dummy variable for older borrower which takes the value of one if the borrower age is at least forty. The results in columns (1) and (2), with Default and Repayment Ratio as the respective dependent variables, show that the interaction terms are statistically significant (coefficients of −0.145 and 0.006 with t-statistics of −3.03 and 2.13, respectively). That is, clan culture has a greater impact on reducing default and in increasing loan repayment among older borrowers.

We next examine variation in impact of clan culture across rural and urban areas. Clan culture has a larger impact on people in rural areas than in urban areas (Chen et al., 2024). Hsiao (1960) documents that the clan usually attained its fullest development in rural areas. Kinship ties were better preserved in the villages which tend to have lower mobility than cities. The typical social organizations developed to be clans in villages and guilds or civic associations in cities. Social capital, however, does not inherently exhibit such a rural–urban divide. If we observe that the effect of clan culture on borrower behavior is more pronounced in rural areas than in urban areas, this would highlight another way clan culture's impact on loan outcomes is distinct from that of social capital.

We classify cities into rural and urban areas following the methodology proposed by the Organization for Economic Co-operation and Development (OECD). In Panel B of Table 10, we present regressions where the main independent variable of interest is the interaction of Clan Culture and a dummy variable for a rural borrower. The dependent variable is Default in column (1) and Repayment Ratio in column (2). The coefficients of the interaction terms are statistically significant (coefficients of −0.123 and 0.010 with t-statistics of −2.88 and 3.13, respectively). That is, clan culture has a greater impact on reducing default and in increasing loan repayment among borrowers from rural areas. These results from Table 10 show that clan culture's impact on P2P borrowers differs qualitatively from that of social capital.

As discussed earlier, the results in Table 5 suggest that lenders from regions with higher clan culture are less likely to take risks. This offers another potential mechanism for our results. Lenders may be more likely to lend to borrowers from higher clan culture regions because they perceive these borrowers as more risk-averse.[7] It is difficult to identify risk-aversion in our sample as we do not directly observe risk-aversion and risk avoidance may be driven by risk-aversion or ethics. Nonetheless, we create a measure of perceived risk-avoidance. We create a variable, Borrower Safety, to capture a borrower's perceived ability to repay a loan when taking on a new loan. Specifically, Borrower Safety is defined as the ratio of lower bound of the self-reported income range to the total monthly repayment obligation from any existing, unpaid loans and the new loan. In unreported regressions, we find statistically significant evidence that borrower with higher Borrower Safety are more likely to get their loans funded. However,

[6] For example, Cao et al. (2022) measure social capital as clan culture.

[7] We thank an anonymous referee for this suggestion.

Table 8
Clan culture and social network.

	(1) Frequently socialize with relatives	(2) Frequently socialize with relatives	(3) Frequently socialize with friends	(4) Frequently socialize with friends
Clan Culture	0.024**	0.022**	0.037**	0.031**
	(2.26)	(2.41)	(2.05)	(2.23)
Age		−0.000		−0.005
		(−0.73)		(−1.34)
Female		−0.005		0.057
		(−0.12)		(0.70)
Minority		0.017		−0.138***
		(1.07)		(6.38)
Education		0.043***		0.093***
		(9.89)		(8.96)
Income		−0.000***		0.000
		(−3.31)		(0.40)
Observations	11,531	11,531	11,552	11,552
Adjusted R^2	0.002	0.033	0.003	0.119
F Statistic	5.12	21.31	4.22	55.07

This table reports attitudes towards information source and socializing based on the respondents' answers in CGSS 2012. Control variables include dummy variables for gender, ethnic status, education level, income level and age. Z-statistics based on robust standard errors clustered at a city level are reported in parentheses.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

Table 9
Impact of clan culture based on legal environment.

	(1) Default	(2) Repayment ratio
Clan Culture	0.001	−0.001
	(0.03)	(−0.37)
Weak Legal Environment (WLE)	0.476*	−0.041**
	(1.92)	(−2.10)
WLE × Clan Culture	−0.121**	0.010***
	(−2.46)	(2.88)
Loan Controls	Yes	Yes
City Controls	Yes	Yes
Year Fixed Effects	Yes	Yes
Month Fixed Effects	Yes	Yes
Purpose Fixed Effects	Yes	Yes
Observations	21,006	20,976
Adjusted R^2		.12
F Statistic		146

This table examines how the impact of clan culture on default and repayment performance depend on legal environment. The binary variable Weak Legal Environment equals one for cities with less than median number of law offices per 10,000 residents. All models include fixed effects as indicated. Robust standard errors clustered at the province level and Z-statistics are reported in parentheses.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

inclusion of Borrower Safety as an independent variable leaves unchanged the statistically significant coefficient of Clan Culture in column (2) of Table 3, suggesting that the impact of Clan Culture cannot be attributed solely to perceived risk-aversion. We also find that Borrower Safety does not have a statistically significant impact on default for funded loans, However, we acknowledge that our data does not permit us to convincingly rule out that clan culture is a proxy for risk-aversion.

6.2. Mechanism for lender behavior

We now investigate the mechanism behind lenders' preference to invest in loans of borrowers from regions with higher clan culture. The first potential mechanism is the use of clan culture as a measure of borrower creditworthiness. Lenders on a peer-to-peer network lack the level of information that traditional financial intermediaries obtain during the loan underwriting process. Since borrowers with higher clan culture are less likely to default and repay a greater fraction of their loan obligations on average, lenders using all information rationally should be more willing to lend to borrowers with higher clan culture.

Another potential mechanism for lender behavior is that lenders form subjective beliefs about borrowers' creditworthiness influenced by the stereotypes about character or intention to pay associated with different social groups. To examine whether clan culture of a borrower is associated with investors' trust in the borrower, we use two questions in CGSS 2012. Table 11 presents results of regressions examining how the responses to these questions correlate with clan culture. The positive and statistically significant (at the 5% significance level) coefficient of Clan Culture in column (1) show that people in regions with higher clan

Table 10
Borrower age and rural or urban areas.

Panel A: Younger and Older Borrowers			
	(1)	(2)	(3)
	Default	Repayment Ratio	Success
Clan Culture	−0.043**	0.003	0.023*
	(−2.05)	(1.50)	(1.66)
Clan Culture × Older Borrower	−0.145***	0.006**	0.132***
	(−3.03)	(2.13)	(4.86)
Older Borrower	−0.22	0.46**	−0.045
	(−0.95)	(2.66)	(−0.42)
Borrower and Loan Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes
Purpose Fixed Effects	Yes	Yes	Yes
Observations	21,006	20,976	333,426
Adjusted R^2		.12	
F Statistic		207.53	

Panel B: Rural and Urban Borrowers			
	(1)	(2)	(3)
	Default	Repayment Ratio	Success
Clan Culture	0.020	−0.003	0.051***
	(0.52)	(−0.93)	(3.01)
Clan Culture × Rural Borrower	−0.123***	0.010***	−0.015
	(−2.88)	(3.13)	(−0.78)
Rural Borrower	0.568***	−0.042***	0.136*
	(3.43)	(−3.63)	(1.90)
Borrower and Loan Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes
Purpose Fixed Effects	Yes	Yes	Yes
Observations	21,006	20,976	333,426
Adjusted R^2		.12	
F Statistic		302.02	

This table examines the impact of age and rural versus urban area on funding success and loan outcomes. In Panel A, the older borrower variable is 1 for borrowers aged at least 40 and 0 otherwise. In Panel B, the rural borrower variable is 1 for borrowers living in rural areas, as determined by OECD methodology. In each panel, the dependent variables are default on funded loans, repayment ratio on funded loans, and funding success of a loan in columns 1, 2, and 3, respectively. Z-statistics based on robust standard errors clustered at a province level are reported in parentheses. All models include year, month and purpose fixed effects.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

culture are more likely to trust each other. Column (2) shows that this result is robust to controlling for gender, education level, minority and income level. Column (3) similarly shows that those in areas with higher clan culture are less likely to believe that others will take advantage of them. Column (4) shows that the robustness of this result to the inclusion of demographic control variables.

The results in Table 11 can be interpreted as evidence that those with higher clan culture exhibit greater trust towards most people or that they are trusted more by most people. Jiang and Lim (2018), while interpreting survey responses of U.S households to a similar question, document that these two interpretations are highly correlated. Since we have already established that borrowers from areas with higher clan culture behave as if they have high ethical standards, greater trust towards those with higher clan culture is a rational response to their higher ethical standards. In contrast, the more trusting behavior of the residents of areas with higher clan culture towards others may reflect their subjective beliefs. We consider this to be one potential mechanism for our results and call it the lenders' trust mechanism. The results of additional regressions reported in columns (5) and (6) of Table 17 in the Appendix show that the relation between clan culture and trust is robust to inclusion of several additional economic control variables.

Lenders' trust mechanism can explain the result that borrowers from higher clan culture areas are more likely to get their loans funded if these loans are more likely to be evaluated by lenders from higher clan culture who, according to the trust mechanism, are more trusting. We can only test this hypothesis with our limited sample of lenders whose clan culture is known. Column (1) of Table 15 presents results of a regression where the dependent variable is a binary variable that takes a value of one if the lender bid on a loan and zero otherwise. The independent variables include borrower and lender clan cultures, their interaction, and several control variables. While the coefficient of the borrower clan culture is positive, indicating that borrowers with higher clan culture are more likely to elicit a bid, the coefficient of the interaction term between borrower clan culture and lender clan culture is not statistically significant. This suggests that the preference towards borrowers with higher clan culture is not restricted to lenders with

Table 11
Clan culture and trust.

	(1) Majority of people can be trusted	(2) Majority of people can be trusted	(3) People will take advantage of you if you're not careful	(4) People will take advantage of you if you're not careful
Clan Culture	0.012**	0.012**	−0.017***	−0.016***
	(2.05)	(2.13)	(−3.19)	(2.83)
Female		−0.017*		−0.043***
		(−1.97)		(−4.11)
Minority		−0.018		0.017
		(−0.45)		(0.56)
Education		−0.000		−0.003
		(−0.05)		(−1.26)
Income		−0.000		−0.000
		(−0.58)		(−1.53)
Age		0.001*		−0.001**
		(1.76)		(−2.22)
Observations	11,556	11,556	11,552	11,552
Adjusted R^2	0.002	0.010	0.003	0.006
F Statistic	4.21	2.69	10.21	7.22

This table reports individual attitudes towards trust based on the respondents' answers in CGSS 2012. Control variables include dummy variables for gender, ethnic status, education level, income level and age. Z-statistics based on robust standard errors clustered at a city level are reported in parentheses.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

higher clan culture and the higher trust level of people with higher clan culture is unlikely to be the mechanism behind greater funding success of borrowers with higher clan culture.

The results in columns (2) and (3) of Table 15 show that the coefficients of the interaction terms are not statistically significant. This suggests that while borrowers with higher clan culture default less and repay a greater fraction of their loans, this behavior is not particular to loans with more lenders with higher clan culture. Thus, the results in Table 15 also rule out alternative mechanisms such as homophily or ethnic homogeneity that can manifest in a preference of lenders and borrowers towards others with similar clan culture so that a match between borrower and lender clan culture affects loan outcomes.

We now examine the simultaneous impacts of three potential mechanisms: trust, social network, and ethics on borrower and lender behavior. We create measures of trust, social network, and ethics based on the answers to survey questions that form the dependent variables in Tables 11, 8, and 7, respectively. Table 18 in the Appendix presents results of regressions with these measures, clan culture, and other control variables as independent variables, and funding success and loan default as the dependent variables. The results in column (1) show that the coefficients of Clan Culture and Ethics are statistically significant at 10% level in predicting Success. The lack of statistical significance of the coefficients of Trust and Social Network does not necessarily rule out the corresponding mechanism because of multicollinearity and because of the noisy measures. However, weak significance of ethics and clan culture suggests that perceived ethics of borrowers impacts lenders' decisions and so does clan culture, even after controlling for trust, social network and ethics. Excluding Clan Culture as an independent variable in column (2) does not qualitatively change the results. The regressions in columns (3) and (4), with Default as the dependent variable, show that both Ethics and Trust significantly reduce default. However, clan culture coefficient continues to be statistically significant, indicating that clan culture contains additional information beyond trust, social network, and ethics, that is predictive of default rate. These inferences are, however, speculative since our survey-based measures of trust, social network, and ethics are noisy.

We now examine whether the use of clan culture as a measure of creditworthiness (related to borrowers' ethics) explains lenders' preference for borrowers with higher clan culture. If clan culture is used as a measure of creditworthiness, we expect borrowers' clan culture to impact lenders' decisions more in loans where lenders have access to less information about borrowers. Information provided by potential borrowers on RRD consists of compulsory disclosures and voluntary disclosures. Besides loan-related information such as interest rate, personal information such as gender, and property information like ownership of a house or car, additional information disclosure is voluntary. Using a median split on the number of information disclosures, we label the bottom half (below the median) as high asymmetry and the top half (above the median) as low asymmetry.

We create a binary variable High Information Asymmetry that equals one for loan listings with less than the median number of information disclosures. Table 12 presents the results of regressions that examine whether the impact of clan culture depends on information asymmetry. The dependent variable in column (1) is the funding success for borrowers. The interaction of Clan Culture and High Information Asymmetry has a positive and statistically significant impact on funding success (0.549 with $t = 12.38$). A similar pattern is observed when we use Funding Time as the dependent variable. The coefficient of the interaction variable is negative and statistically significant at 5% in column (2). The coefficient of the interaction variable is positive and statistically significant in column (3) indicating that the positive effect of clan culture on bid amount larger when information asymmetry is high. These results, indicating the greater influence of clan culture in loans with high information asymmetry, suggest that lenders may be using clan culture as a substitute for other measures of creditworthiness.

We noted earlier that clan culture has a larger effect on loan performance of older borrowers as reflected in Panel A of Table 10. This suggests lenders' preference for borrowers with higher clan culture should be more pronounced among older borrowers.

Table 12
Clan culture and information asymmetry in loans.

	(1) Success	(2) Funding time	(3) Log average bid amount
Clan Culture	−0.007	−0.003	−0.002
	(−0.46)	(−1.15)	(−0.32)
High Information Asymmetry (HIA)	−4.453***	0.034	−0.257***
	(−20.00)	(1.63)	(−3.90)
HIA × Clan Culture	0.549***	−0.012**	0.132***
	(12.38)	(−2.39)	(8.90)
Loan and Borrower Controls	Yes	Yes	Yes
City Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes
Purpose Fixed Effects	Yes	Yes	Yes
Observations	333,426	20,990	22,815
Adjusted R^2		0.06	.38
F Statistic		16.31	500.1

This table reports the impact of clan culture on borrowers with different levels of information asymmetry. The borrowers are divided into two groups based on their number of their voluntarily disclosures. Borrowers with more (less) than the median number of disclosures are classified as low (high) information asymmetry group. Loan, borrower, and city-level characteristics are included as control variables. Z-statistics based on robust standard errors clustered at a province level are reported in parentheses. All models include year, month, and purpose fixed effects.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

We present results of a regression with loan success as the dependent variable in column (3). The coefficient of the interaction term between Clan Culture and a dummy variable for older borrower is positive and statistically significant, confirming that lenders rely more on borrower clan culture when borrowers are older. The results in columns (1) and (2) of Panel B of Table 10 show that clan culture's impact on loan outcomes is greater in rural areas. Again, if clan culture is used as a measure of creditworthiness, we expect lenders to rely more on borrower clan culture in rural areas. However, in the results of a regression with loan success as the dependent variable in column (3), the coefficient of the interaction term between borrower clan culture and a dummy variable for rural borrower is not statistically significant. While this result doesn't provide additional support for borrower clan culture acting as a measure of creditworthiness, it may reflect lenders' inability to distinguish between urban and rural areas.

7. Do lenders learn?

Our results suggest that borrower clan culture is used as a measure of creditworthiness by lenders. We now consider a test to examine if the magnitude of the impact of clan culture on borrowers' likelihood of getting loans is consistent with the effect of clan culture on borrowers' loan repayment.

If clan culture acts as a surrogate for creditworthiness, its impact should decline when availability of other measures of creditworthiness improves. We expect the credit premium associated with the clan culture to diminish as a borrower develops a longer history of performance on past loans. For a borrower with a short performance history, investors may be more likely to extend loans if the borrower has a higher clan culture. However, if the borrower defaults on a loan, the investors should take this information into account, making further loans to the borrower less likely even if the borrower has high clan culture. Thus, we expect the impact of clan culture to be more significant among borrowers who have never defaulted than among repeat borrowers with previous defaults. We create a binary variable Default History that equals one for a loan listing whose borrower has defaulted at least once before the current loan. We estimate regressions with the same control variables as in Table 3 and present the results in Table 13.

In column (1), with the funding success as the dependent variable, we find that the coefficient of the interaction of Clan Culture and Default History is negative and statistically significant (t-statistic of −2.00). The effect of clan culture on improving funding success is less significant for borrowers who have defaulted in the past. We observe the same pattern in column (2), where Funding Time is the dependent variable. Although a higher clan culture reduces the time for funding of loan for both subsamples, the effect is statistically significantly weaker for borrowers with prior defaults, indicating that the incremental informativeness of clan culture to lenders diminishes after borrowers experience a default. The results in column (3) provide similar inferences. One weakness of this analysis is that the smaller sample size of borrowers who have defaulted can limit the statistical power of these tests. Overall, the results from Table 13 are consistent with credit history and clan culture acting as substitute sources of information for investors.

8. Conclusion

We investigate the role cultural considerations play in individual financial decisions and whether these considerations constitute behavioral biases or rational behavior. The laboratory for our investigation is the peer-to-peer lending market where we can observe individual decisions and where the lack of formal underwriting may make cultural information particularly relevant. We use a large

Table 13
Learning from default experience.

	(1) Success	(2) Funding time	(3) Log average bid amount
Clan Culture	0.076***	−0.011***	0.023***
	(4.79)	(−4.37)	(4.12)
Defaulted History (DH)	3.381	−0.092	0.089
	(1.58)	(−1.43)	(1.23)
DH × Clan Culture	−1.309**	0.036**	−0.035**
	(−2.00)	(2.05)	(−2.38)
Loan and Borrower Controls	Yes	Yes	Yes
City Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes
Purpose Fixed Effects	Yes	Yes	Yes
Observations	333,301	20,873	22,690
Adjusted R^2		0.06	.36
F Statistic		14.77	245.5

This table presents results of regressions to examine the impact of learning about default experience on funding success, popularity, and the log of the average bid amount. The binary variable Default History equals one for a loan listing whose borrower has defaulted at least once before the current loan. The regressions have the same control variables as in Table 3. Loan, borrower, and city-level characteristics are included as control variables. Robust standard errors clustered at the province level and Z-statistics are reported in parentheses. All models include year, month, and purpose fixed effects.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

panel dataset of bid-level data from RenRenDai, a leading peer-to-peer lending platform in China, to examine whether clan culture impacts borrower and lender behavior. Our understanding of the decision-making by individuals in peer-to-peer lending is much less developed than our understanding of the institutional lending with formal underwriting models. Individuals are more likely than institutions to pay attention to culture, either to extract information, due to behavioral or informational biases, or due to non-financial motives.

We find that culture is used to differentiate borrowers in peer-to-peer lending. Borrowers from regions with higher clan culture enjoy an apparent advantage. Specifically, borrowers from higher clan culture are more likely to have their loan requests funded, get loans funded fully more quickly, and attract larger bids from lenders. The decisions of lenders, however, seem to be economically justified as borrowers from regions with higher clan culture are less likely to default and are likely to repay a greater fraction of the loan. These results control for the usual risk measures available to lenders. Our results suggest that clan culture may be a signal for risk that is not captured by observable characteristics such as income, education, and prior loan history. This may be an artifact of the poor quality of these risk measures. Nonetheless, the significance of clan culture is consistent with the prior literature that suggests that clan culture develops ethical norms that can be a substitute for formal institutional governance and enforcement mechanisms. These results are stronger for loans that are riskier ex ante and weaker for borrowers with default history. Our analysis suggests that the results cannot be attributed solely to migration, specific measure of clan culture, endogeneity of clan culture, or selection bias in funded loans.

Additional survey-based evidence suggests that lenders may be influenced by the perception that residents from higher clan culture areas have greater ethical standards and are more socially networked. This is supported by the evidence that the lender preference for borrowers with higher clan culture is stronger in loans with greater information asymmetry. Our analysis suggests that greater adherence to ethical norms may be the driving force behind fewer defaults of borrowers from areas with higher clan culture. This inference is supported by the evidence that the reduction in default risk associated with higher-clan-culture borrowers is more pronounced in areas with weaker legal environment. In summary, our results suggest that culture is used by individuals in their financial decision-making as a substitute for formal institutional or governance mechanisms.

Our findings show that an individual's culture influences her behavior and the perception of another person's culture influences economic interaction with that person. Our results about the cross-sectional variation in these effects suggest that these two effects are intertwined in an equilibrium. Communities with higher clan culture have an incentive to live up to their reputation to continue to reap the benefits of that reputation while communities with weaker clan culture have no incentive to deviate from the lower expectations of creditworthiness. Our analyses do not answer two questions. First, how do communities ensure that individuals in those communities act in the interest of the community to preserve the culture. Second, why do different cultures evolve the way they do?

CRediT authorship contribution statement

Anand M. Goel: Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Hongju Ren:** Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Appendix

See Tables 14–18.

Table 14
Baseline regressions with province fixed effects.

	(1) Success	(2) Funding time	(3) Log average bid amount	(4) Default	(5) Repayment ratio
Clan Culture	0.031***	−0.010*	0.009*	−0.140***	0.011***
	(2.78)	(−1.85)	(1.68)	(−5.39)	(4.15)
Loan APR	−0.180***	−0.039***	0.046***	0.148***	−0.007***
	(−38.14)	(−6.75)	(14.93)	(7.76)	(−4.51)
Female	0.046*	0.005	0.068***	−0.181	0.015*
	(1.88)	(0.31)	(4.85)	(−1.64)	(1.87)
Age	0.020***	0.001	0.011***	0.032***	−0.002***
	(14.27)	(0.79)	(13.17)	(10.99)	(−8.66)
Credit Rating	1.128***	−0.020***	0.114***	−1.755***	0.050***
	(85.76)	(−3.73)	(30.67)	(−22.99)	(16.21)
Repayment Period	−0.029***	0.005***	0.013***	0.033***	−0.004***
	(−25.91)	(5.53)	(20.48)	(6.61)	(−6.29)
Education	0.257***	−0.015***	0.004	−0.419***	0.027***
	(23.80)	(−2.94)	(0.68)	(−11.57)	(9.51)
Log Previous Loans	0.685***	−0.060***	−0.140***	0.723***	−0.064***
	(15.31)	(−5.29)	(−15.48)	(5.91)	(−8.16)
Income Level	0.131***	0.002	0.124***	0.282***	−0.016***
	(17.21)	(0.29)	(31.78)	(13.91)	(−10.08)
Married	0.088***	0.027*	0.021*	0.041	−0.009***
	(4.25)	(1.87)	(1.87)	(0.93)	(−3.42)
Work Experience	0.242***	−0.004	−0.044***	−0.063**	0.007***
	(26.35)	(−0.71)	(−9.17)	(−2.09)	(3.00)
House Ownership	−0.055***	−0.042***	0.032***	−0.094**	0.005
	(−2.83)	(−3.06)	(3.10)	(−2.04)	(1.56)
Car Ownership	0.041*	0.001	0.040***	−0.140**	0.016***
	(1.77)	(0.03)	(3.45)	(−2.04)	(3.41)
GDP Per Capita	0.014***	0.001	−0.003	−0.007	0.001
	(2.62)	(0.31)	(−0.93)	(−0.47)	(0.87)
Banks Per Capita	0.007	0.014	0.007	−0.169	0.016*
	(0.20)	(0.83)	(0.38)	(−1.51)	(1.94)
Lawyers Per Capita	0.174	−0.057	0.085	0.473	−0.044
	(1.61)	(−1.10)	(1.54)	(1.43)	(−1.48)
Urbanization	−0.417***	0.019	0.039	−0.122	−0.010
	(−3.53)	(0.33)	(0.65)	(−0.30)	(−0.28)
Unemployment Rate	−0.005	−0.008	0.008	0.017	−0.001
	(−0.35)	(−0.76)	(1.01)	(0.48)	(−0.43)
Housing Price Change	−0.187**	−0.010	−0.051	0.408	−0.010
	(−2.18)	(−0.29)	(−1.19)	(1.50)	(−0.48)
Population	−0.000***	0.000	0.000	−0.000***	0.000***
	(−3.10)	(0.60)	(0.79)	(−4.11)	(6.13)
Road Density	0.026	−0.005	0.006	−0.103	0.014**
	(0.85)	(−0.37)	(0.42)	(−1.63)	(2.63)
Province Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes	Yes
Purpose Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	320,908	20,313	22,078	20,329	20,304
Adjusted R^2		0.06	.37		.12
F Statistic		7.739	241.8		247.1

This table presents the results from the regressions of the funding success, popularity, the log of the average bid amount, default, and repayment ratio on borrowers' clan culture and a set of control variables. Urbanization is the percentage of urban permanent resident population, housing price change is the percentage increase in annual average residential listing price per unit area relative to the previous year, and road density is the ratio of highway mileage to urban land area. Province dummies, year dummies, month dummies and purpose dummies are also included. Provinces with little variation in clan culture share a fixed effect with their neighbors. Columns 1 and 4 use probit models. Columns 2,3,5 use OLS regressions. Z-statistics based on robust standard errors clustered at the province level are reported in parentheses.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

Table 15
Interaction between borrower clan culture and lender clan culture.

	(1) Bid	(2) Default	(3) Repayment ratio
Lender Clan Culture	−0.019		
	(−1.34)		
Borrower Clan Culture	0.040	−0.073***	0.005***
	(1.62)	(−3.50)	(2.30)
Lender Clan Culture × Borrower Clan Culture	−0.001		
	(−0.43)		
Lender Clan Culture (Average)		0.007	−0.001
		(0.10)	(−0.35)
Lender Clan Culture (Average) × Borrower Clan Culture		0.004	0.001
		(0.35)	(0.14)
Homecity	0.015	0.284	−0.016
	(0.26)	(1.02)	(−0.97)
Year,Month,Purpose Fixed Effects	Yes	Yes	Yes
Lender Fixed Effects	No	Yes	Yes
Lender, Borrower and Loan Controls	Yes	Yes	Yes
Borrower and Lender City Controls	Yes	Yes	Yes
Observations	865,611	17,903	20,321
Adjusted R^2			0.18

This table examines interaction between borrower clan culture and lender clan culture. By matching borrowers' ID with lenders' ID, we obtain a sub-sample of lenders who were also borrowers on the platform and thus obtain their demographics. Regressions include the product of the two as an independent variable. Column 1 is based on all lenders whose clan culture is known and all loans that were active on the day one of these lenders places a bid. Columns 2 and 3 consider funded loans in which we know the clan culture of an investor and include weighted lender fixed effects for multiple lenders in a loan. Regressions include loan controls and macroeconomic controls of both borrowers and lenders cities, and personal characteristics of borrowers and lenders. Z-statistics based on robust standard errors clustered at borrower province level are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

Table 16
Alternate measure of clan culture.

	(1) Success	(2) Funding time	(3) Log average bid amount	(4) Default	(5) Repayment ratio
Clan Culture Alternate	0.107***	−0.011**	0.020	−0.169***	0.011**
	(2.58)	(−2.08)	(1.06)	(−2.99)	(2.62)
	[0.003**]			[−0.004**]	
Loan and Borrower Controls	Yes	Yes	Yes	Yes	Yes
City Controls	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes	Yes
Purpose Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	264,691	16,867	18,381	16,879	16,860
Adjusted R^2		0.057	0.36		.12
F Statistic		18.80	684.90		235.34

This table checks the robustness of our results with respect to an alternate measure of clan culture. We calculate the log of the number of ancestral halls in each city normalized by the population of that city. The main independent variable is the new measure of clan culture. The dependent variables are funding success, popularity, average bid amount, default probability and repayment ratio. The control variables are the same as in Table 3. The values in the square bracket in the column 1 and column 4 report the corresponding marginal effects. Z-statistics based on robust standard errors clustered at the province level are reported in parentheses.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

Table 17
Survey results with additional macroeconomic controls.

	(1) Unethical behavior can be done for profits	(2) Dissatisfied with current social morality	(3) Frequently socialize with relatives	(4) Frequently socialize with friends	(5) Majority of people can be trusted	(6) People will take advantage of you if you're not careful
Clan Culture	−0.029***	0.042***	0.020*	0.035**	0.010*	−0.017***
	(−3.98)	(3.25)	(1.85)	(2.03)	(1.72)	(−2.94)
Female	−0.007	0.020	0.018	−0.129***	−0.015*	−0.045***
	(−0.67)	(0.64)	(1.13)	(−6.46)	(−1.68)	(−4.21)
Minority	−0.012**	−0.025*	0.001	0.045	0.007	−0.026
	(−2.29)	(−1.98)	(0.02)	(0.60)	(0.37)	(−1.11)
Education	0.001	0.033***	0.041***	0.094***	0.000	−0.005*
	(0.35)	(4.70)	(9.01)	(9.39)	(0.12)	(−1.90)
Income	0.000**	0.000**	−0.000***	0.000	−0.000	−0.000
	(2.42)	(2.44)	(−3.05)	(0.52)	(−0.66)	(−1.63)
Age	−0.001**	−0.003**	−0.001	−0.004	0.001*	−0.001**
	(−2.39)	(−2.31)	(−0.84)	(−1.31)	(1.71)	(−2.26)
GDP Per Capita	0.001	−0.012	0.011	0.001	0.004	−0.015**
	(0.13)	(−1.02)	(1.23)	(0.10)	(0.71)	(−2.33)
Banks Per Capita	0.057	−0.031	0.076	0.043	−0.037	0.003
	(1.05)	(−0.43)	(1.48)	(0.46)	(−1.45)	(0.11)
Lawyers Per Capita	0.470*	−0.238	−0.452**	−0.496*	0.047	0.254*
	(1.70)	(−1.09)	(−2.20)	(−1.70)	(0.45)	(1.88)
Urbanization	−0.353**	0.606**	0.152	0.427	−0.116	0.006
	(−2.34)	(2.48)	(0.83)	(1.65)	(−1.27)	(0.07)
Unemployment Rate	0.002	0.055*	−0.026	−0.031	−0.004	−0.014
	(0.18)	(1.77)	(−1.27)	(−1.05)	(−0.34)	(−0.92)
Housing Price Change	−0.282	0.863***	0.292	0.237	−0.026	0.046
	(−1.25)	(3.63)	(1.42)	(0.82)	(−0.29)	(0.62)
Population	0.000	−0.000***	−0.000	−0.000**	0.000	0.000
	(0.15)	(−3.58)	(−0.66)	(−2.63)	(0.94)	(1.65)
Road Density	−0.013	0.038	0.080*	0.039	0.016	−0.013
	(−0.49)	(0.73)	(1.83)	(0.62)	(0.97)	(−0.68)
Observations	4,847	4,888	11,232	11,252	11,256	11,262
Adjusted R^2	0.04	0.05	0.04	.12	0.01	0.01
F Statistic	5.589	10.28	14.12	39.73	1.577	4.29

This table reports individual attitudes towards moral ethics (based on CGSS 2013), information source, socializing, and trust (based on CGSS 2012). Control variables include dummy variables for gender, ethnic status, education level, income level, age, and economic control variables. Z-statistics based on robust standard errors clustered at the city level are reported in parentheses.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

Table 18
Trust, social network, ethics and loan outcomes.

	(1) Success	(2) Success	(3) Default	(4) Default
Clan Culture	0.028*		−0.038**	
	(1.82)		(−2.03)	
Trust	0.321	0.427	–2.212***	–2.390***
	(0.79)	(0.97)	(−5.05)	(−5.68)
Social Network	0.402	0.353	0.537	0.598
	(1.22)	(1.01)	(1.23)	(1.36)
Ethics	0.836*	1.051**	–1.304**	–1.595***
	(1.80)	(1.96)	(−1.97)	(−2.66)
Borrower and Loan Controls	Yes	Yes	Yes	Yes
City Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes
Purpose Fixed Effects	Yes	Yes	Yes	Yes
Observations	324,377	324,502	20,494	20,499
Pseudo R^2	0.27	0.26	0.25	0.24

This table presents the regression results of loan success and loan default on borrowers' clan culture, trust, social network, and ethics, controlling for borrower and loan characteristics. Trust, Social Network, and Ethics are based on the answers to survey questions that form the dependent variables in Tables 11, 8, and 7, respectively. Z-statistics based on robust standard errors clustered at a province level are reported in parentheses. All models include year, month and purpose fixed effects.
*** Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

Data availability

The authors do not have permission to share data.

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