Does Borrowers' Cultural Norms Matter in Marketplace Lending? Evidence from Local Confucianism

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Abstract

We examine the role of borrowers' cultural norms in online lending markets. Using data from one of the largest marketplace lending platforms in China, we show that borrowers from regions with a stronger Confucian culture influence are more likely to be funded and receive more campaign proceeds relative to loan size. Moreover, borrowers' local Confucian culture is associated with favorable lending outcomes through enhancing the creditworthiness and predictability of borrower behaviors. Ex-post analysis suggests that borrowers from regions with a stronger Confucian culture have less default, and their lenders enjoy higher returns. Taken together, our findings reveal the unique role of local cultural norms in enhancing transaction efficiency by mitigating the adverse selection and moral hazard problems in marketplace lending.

"Promises must be kept and action must be resolute."

— The Analects of Confucius

1. Introduction

Marketplace lending, the direct financing arrangement between two parties without the involvement of financial institutions, has experienced exponential development during the last decade. According to a recent research report, the global marketplace lending market was valued at $67.93 billion in 2019 and is projected to reach $558.91 billion by 2027.[1] The development is driven by the advanced technology, such as big data analytics, artificial intelligence, as well as the growing demand from both consumers and businesses for more accessible and flexible financing options. Compared to traditional lending markets, marketplace lending market has its unique features. First, default rates in marketplace lending are consistently higher than those in traditional loans over time. The average default rate for marketplace lending loans in LendingClub stands at 20% over the period 2007-2018, whereas the corresponding delinquency rate for US traditional lending is less than 5% (Croux et al., 2020). In China, the non-performing loan ratio of traditional bank loan is less than 1%, while that of the marketplace lending loan is over 10% (Liu, Li and Zheng, 2023). Second, as a decentralized and anonymous credit market without financial intermediaries, marketplace lending market has significant information asymmetry between the parties of a transaction, which makes it costly for investors to distinguish borrower "types". To overcome the issue, most marketplace lending platforms require borrowers to disclose crucial information, e.g., the usage of funds (Iyer et al., 2016; Liao et al., 2021) and encourage borrowers to provide additional information, e.g., credit history (Michels, 2012; Hu et al., 2023). Finally, due to limited financial expertise and experience in evaluating loan quality using traditional financial matrix, typical lenders in this market tend to use non-standard or "soft" information in loan screening in their lending decisions (Duarte, Siegel, and Young, 2012; Lin, Prabhala and Viswanathan, 2013).

Given these features, prior research investigates individual lenders' information acquisition and processing in marketplace lending. On the one hand, a large literature explores lenders'

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[1] "*Peer to Peer Lending Market by Business Model, Type, and End User: Opportunity Analysis and Industry Forecast, 2020-2027*", Allied Market Research, 2020.

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behavioral biases in the process and their sub-optimal lending decisions.[2] On the other hand, several studies show that lenders could obtain superior lending outcomes by actively incorporating non-standard, soft information.[3] In particular, recent literature (e.g., Chen et al., 2020; Lin, Prabhala, and Viswanathan, 2013; Hasan, He, and Lu, 2022) has highlighted the important roles of social capital, such as social network and trustworthiness, in affecting individual investors' lending decisions. However, we still have limited knowledge about how cultural norms shapes peer lenders' investment decision criteria, which is an important question, given that culture norm is one of the three key elements of social capital (e.g., Putnam, 1995; Schneider, 2009).[4] In addition, as soft information, borrowers' local cultural norms, particularly those related to morality, can play a role in mitigating the information frictions. We fill this gap in literature by focusing on the role of borrowers' local cultural norms, an important type of shared beliefs and rules that govern behaviors of individuals within social groups (Nunn, 2022). In particular, we investigate whether and how lenders in China's marketplace lending consider the culture in borrowers' regions in their investment decisions.[5]

We examine this issue in the China market because it provides an ideal laboratory to study the role of culture in financial market. Specifically, since laws and regulations for investor protection is still developing in marketplace lending in China (Huang and Wang, 2021), lenders rely more on informal institutions such as culture to assess the default risk of their loan investments. Moreover, we choose Confucianism as our key culture variable of interest because of its influence, which centers on personal virtues and morality, with rules that effectively govern individual behaviors (Yao, 2000). As such, Confucian values and ethics can be of particular relevance to investors' decisions in marketplace lending. Finally, due to historical reasons, there are large and persistent regional differences with respect to the prevalence of Confucian culture even within a province (Du, 2015; Gu, Sun, and Zhou, 2023), which allows us to control for the impacts of formal institutional characteristics within a province.

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[2] See, Ravina (2019), Lin and Viswanathan (2016), Jiang, Liu, and Lu (2020), Hu et al.(2023), Liao et al., 2021) for behavioral biases of individual lenders in marketplace lending markets, among others.
[3] See Iyer et al. (2010, 2016), Duarte, Siegel, Young (2012), and Michels (2012) for rational information acquisition and processing by individual lenders in marketplace lending markets, among others.
[4] The other two elements are networks and trust (generalized trust and trustworthiness).
[5] He and Hu (2016) document that borrowers' culture influences the availability and terms of bank loans as religious borrowers' traits (e.g. ethical behavior, honesty) can mitigate informational frictions. Fisman, Paravisini and Vig (2017), Albareto et al. (2022) show that cultural proximity (e.g. shared codes, beliefs and ethnicity) between lenders and borrowers increases the quantity of credit and reduces credit costs and default rates.

Against this backdrop, we develop two competing hypotheses on the link between borrowers' local Confucianism and lenders' investment decisions. The first hypothesis postulates that borrowers' local Confucian culture can have a positive effect on the outcomes of their loan listings. Previous literature (e.g., Hausman and McPherson, 1993; Scott and Marshall, 2009; Young, 2015) shows that cultural norms that reinforce group-level evaluation and monitoring of individual choices can curb opportunism by internalizing the costs of immoral acts for group members, thereby enhancing trustworthiness. Furthermore, since group cultural norms are stable overtime, conforming members exhibit high behavioral consistency, making their actions more predictable (Biel and Garling, 1995; Hardin, 2003; FeldmanHall and Shenhav, 2019).[6] As such, cultural norms can mitigates the classical adverse selection issue in loan contracting. Broadly, several studies (e.g., Ellickson, 1991; Posner, 2000) show that cultural norms can encourage interactions among the members in a society.

Confucianism has long served as the cultural cornerstone and the practical doctrine of business ethics in China. Confucian norms advocate righteous and trustworthy business behaviors (Koehn, 2001; Lam, 2003; Du, 2015) and discourage unethical acts, such as exploitation and dishonesty, by inducing shame and moral distress (Chang, 2010; Mitsui, 2019; Gu, Sun, and Zhou, 2023). To the extent that local Confucian culture can signal people's ethical behaviors, we would expect that the loans by borrowers from regions with a stronger Confucian culture are more likely to be funded and they also receive more funding for their loans.[7]

By contrast, our alternative hypothesis argues that a stronger local Confucian culture may have an adverse effect on the outcomes of the borrowers' loan listings. Specifically, previous literature (e.g., Alesina and Giuliano, 2015) documents that local cultural norms can promote kinship-based institutions, which create isolated, close-knit local groups. Studies find that these tight kin networks foster in-group favoritism (Akbari, Bahrami-Rad, and Kimbrough, 2019), cultivate distrust of people outside the group (Bahrami-Rad et al., 2019), allow cheating (Tabellini, 2008) and discourage out of group cooperation (Enke, 2019).

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[6] Nunn (2012) shows that culture and norms arise when environments are complex and uncertain and information acquisition is costly.

[7] Low quality borrowers cannot mimic such signals without incurring a cost as the strength of geography based moral norms is inferred from borrowers' residential addresses, which is verified by the platform and bears high credibility (Hasan, He, and Lu, 2022).

Studies on Confucian culture (e.g., Liu, 2007; Greif and Tabellini, 2010; Chen and Ma, 2022; Chen, Ma, and Sinclair, 2022) also have similar findings. In particular, these studies show that Confucianism emphasizes family ties and advocates kinship based moral norms to facilitate cooperation and transactions (*guanxi*) within the clans, which helps to develop a robust internal financial market within the group. However, such in-group loyalty in Confucian culture can lead individuals to put family interests above those of outsiders, hindering their transactions with outside members (e.g., Fei, Hamilton, and Zheng, 1992). To the extent that most marketplace lending take place between two parties who don't know each other, stronger Confucian culture in borrowers' regions may signal lower creditworthiness and less behavioral consistency. Thus, we would expect that lenders are less likely to bid for the loans by borrowers from regions with a stronger Confucian culture.

To test these two competing hypotheses, we use a large sample of 314,807 loan listings from a leading marketplace lending platform in China, *Renrendai*, over the 2011-2015 period. Following previous literature (e.g., Chen, Ma, and Sinclair, 2022; Kung and Ma, 2014), we measure the strength of Confucian culture in borrowers' location using the geographical density of the Confucian temples in the 19th century, which are retrieved from provincial gazetteers complied at various time points throughout the 19th century. Confucian temples are built to worship and honor Confucian sages and local eminent Confucian exemplars. There are more Confucian temples in regions with stronger the influence of Confucian culture, which would further deepen the Confucian ethics in turn (Ho, 1962). Thus, the density of Confucian temples in a region can be a valid indicator of the strength of local Confucianism. Following prior studies (e.g., Hasan, He and Lu, 2022), we focus on the likelihood of funding success and the fraction of campaign proceeds relative to loan size as the main lending outcomes, which are the results of individual investors' bidding decisions.

Our baseline results show that borrowers from regions having higher density of historical Confucian temples are more likely to have their loan listings funded and receive more funding, which are consistent with the positive role of Confucian culture in marketplace lending. In particular, a one standard deviation increase in the Confucian temple density of borrowers' regions is associated with approximately 1.069 times increase of the odds of their funding success and a 7% increase in the fraction of campaign proceeds they receive to loan size relative to the sample

mean. Our findings continue to hold in a battery of robustness checks using alternative model specifications, measures of Confucian culture, and sample selection criteria.

To alleviate endogeneity concerns, we employ a multi-pronged approach. First, we control for other religious and cultural traits that could affect both Confucian strength and lending outcomes, provincial-specific time-varying covariates, as well as year-month variant factors. Second, we remove the loans listed by immigrants and use the propensity score matching method to address the self-selection issue. Finally, we follow Du (2015), Chen, Xiao, and Zhao (2021) and perform two-stage-least-squares (2SLS) regression using the distance between borrower location and Confucian centers as the instrument variable. We find confirming results from these exercises.

We then investigate cross-sectional variations for the impact of Confucian culture. We find that the positive effect of Confucian culture on borrowers' lending outcomes is more pronounced for borrowers with less certifications or successful funding history on the platform. We also show that the positive effect of Confucianism is stronger in regions with lower levels of trustworthiness, better legal environments, as well as in regions that experienced fewer causalities during the Culture Revolution. Importantly, these results suggest that Confucian culture plays a more pronounced role when other dimensions of social capital are absent and formal institutions are well-established.

There is an alternative view that borrowers with stronger Confucian culture enjoy favorable lending outcomes because individual lenders are susceptible to behavioral biases such as representativeness and stereotype (Kahneman and Tversky, 1972; Gilbert and Hixon, 1991; Bordalo et al., 2016). In particular, the positive effects of Confucian culture on local borrowers' loans are due to the subjective higher weight of trustworthiness assigned by lenders to borrowers living in regions with stronger Confucian culture.[8] Importantly, these behavioral bia driven lending decisions tend to be suboptimal, and the funded loans tend to have more default. However, we examine the loan performance and do not find evidence consistent with this alternative. In particular, we find that the loans by borrowers from regions with stronger Confucian culture have lower loan default probabilities, and their lenders enjoy higher ex post returns. Collectively, the results suggest that incorporating Confucian culture in the lending decision is likely to be rational and leads to efficiency gains.

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[8] Prior literature has shown that cultural biases widely exist in personal financial decisions (Grinblatt and Keloharju, 2001; Giannetti and Yafeh, 2012; D'Acunto et al, 2021).

Our contributions to literature are threefold. First, we contribute to the literature on the classical adverse selection and signaling issue (Akerlof, 1970; Spence; 1973) in emerging marketplace lending. Compared to conventional lending markets, marketplace lending markets inherently have greater information asymmetry and less standard financial information, exacerbating the problem of adverse selection. We show that borrowers' local culture can effectively signal the creditworthiness and consistency of borrower behaviors, which serves as an important type of soft information to mitigate the adverse selection problem. As such, our research also offers a novel explanation to the geographic differences in lending outcomes across borrowers' locations (Grinblatt and Keloharju, 2001; Lin and Viswanathan, 2016; Fisman, Paravisini and Vig, 2017; Fisman, Sarkar, Skrastins and Vig, 2020).

Second, our findings add to the literature on the roles of social capital in economic exchange. Previous literature relates social capital to various economic transactions.[9] Unlike these studies, our work documents local cultural norms as a crucial element of social capital on economic exchange at the individual level. In this regard, our analysis is closely related to the recent literature (e.g., Chen et al., 2020; Lin, Prabhala, and Viswanathan, 2013; Hasan, He, and Lu, 2022) that probes the roles of social network and trust in personal financial decisions in marketplace lending markets. Our study complements these studies by uncovering two unique channels for borrowers' local cultural norms to shape lenders' investment decision rules, i.e., constraining borrower opportunism by serving as a monitoring mechanism and enhancing the predictability of borrower behaviors by reinforcing their creditworthiness, which distinguish cultural norms from other elements of social capital.[10]

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[9] See Karlan (2005), Carlin, Dorobantu and Viswanathan (2009), Guiso, Sapienza, and Zingales (2009), Ang, Cheng and Wu (2015), Karlan, Mobius, Rosenblat and Szeidl (2009), Kinnan and Townsend (2012), Guiso, Sapienza, and Zingales (2004, 2008), Hoi, Wu and Zhang (2019), Ahern, Daminielli, and Fracassi (2015), Xie, Zhang, and Zhang (2022) for the important role of social capital in the international trade and investment, formal and informal borrowing, financial development, corporate governance, mergers and acquisitions and innovative activities, among others.

[10] Our paper is closely related to Hasan, He, and Lu (2022), who examine the financing outcomes on the *Renrendai* platform and document that borrowers from high social capital regions have higher funding success and receive more biddings from the lenders. Our study differs from theirs in at least three aspects. First, we are focusing on cultural norms as one specific aspect of social capital while their study focuses on the trust and trustworthiness as another aspect of social capital. Second, we use historical data more than 100 years ago to construct our measure of moral norms, which mitigates the potential concern on reverse causality. Last but not least, we use more granular data at the prefectural level instead of provincial level, which helps to identify cultural diversity within a province. For example, the southeast part of *Shandong* province is the hometown of Confucius and has a strong Confucianism tradition for hundreds of years, while the coastal area of the east *Shandong* province has much less of this tradition.

Third, our study also speaks to the on-going discussion on the economic effects Confucian culture. On one hand, a few studies describe Confucian moral norms as kinship-based morality that prioritizes the interests of extended families at the expenses of outsiders and encourages relational transactions (Bertrand and Schoar, 2006; Greif and Tabellini, 2010; Wong, 2014; Chen, Chen and He, 2019; Chen, Ma, and Sinclair, 2022). On the other hand, several studies document Confucian morality as a form of generalized morality that facilitates cooperation and reduces economic expropriation (Lam, 2003; Du, 2015; Gu, Sun, and Zhou, 2023). Our work joins the discussion by showing that Confucian culture is conducive to arm's length marketplace transactions, thereby highlighting the generalized morality attribute of Confucian culture.

2. Institutional background

2.1. Marketplace lending in China and Renrendai online lending platform

Created in England in 2005, marketplace lending platforms emerge all around the world. In the past decade, the marketplace lending market has experienced exponential growth around the world and served as an important supplier of credit to consumers (Tang, 2019). The first marketplace lending platform in China was established in 2007. By December 2019, the total number of marketplace lending platforms had reached 6,610, which could be found in almost every province in mainland China with highest numbers in *Guangdong*, *Beijing*, *Zhejiang* and *Shanghai*.[11] The marketplace lending market in China is also among the largest across the world (Nemoto, Storey, and Huang, 2019). As of December 2018, the total lending amount reaches over ¥7.9 trillion, which is approximately 20% of consumer loans provided by the traditional banking sector (Braggion, Manconi, and Zhu, 2023).[12] In its heyday, there are 3,607 operating marketplace lending platforms and the monthly turnover is around ¥254 (USD40) billion. The average annual interest rate of loans listed on Chinese marketplace lending platforms is 12%, within the range of rates charged by credit card. Borrowing is primarily short-term on this market, with the average maturity around 10 months.

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[11] The data is sourced from *Wangdaizhijia* (WDZJ.com), one leading web portal for marketplace lending in China (He & Li, 2021; Wang et al., 2022).

[12] As of December 2019, there are in total 180 million P2P lenders and 132 million P2P borrowers, which are around 12.79% and 9.43% of the entire population of China, respectively, indicating that P2P lending market is a prevalent and important source of credit to Chinese consumers.

Launched in April 2010, *Renrendai* is one of the earliest marketplace lending platforms in the country. As of July 2020, its total trading volume reaches ¥113 (USD17.4) billion, contributed by more than 3 million borrowers and 1 million investors. Importantly, this platform makes great efforts in information disclosure, which brings the highest rating in the enterprise credit assessment by the Internet Society of China. *Renrendai* has been providing both unsecured consumer credits, which is commonly referred to as marketplace credit, and on-site verified or collateralized loans that target small businesses. Our study focuses on the former, because *Renrendai* provides principal and interest guarantees to the lenders in other type of loans.[13] Like other marketplace lending platforms, the standard for loan listings on *Renrendai* is low relative to personal loans from banks. To apply for a loan, the potential borrowers are required to submit a photocopy of their ID card and with personal information, such as age, gender, income, residential address, real estate or car ownership status, etc. In addition, borrowers are encouraged to provide supporting documents for verification of their personal information, which can boost their rating. Borrowers are also required to specify their maturity and intended purposes in the loan listings. Borrowers have the option to specify interest rates before December 18, 2014, while the platform posts the interest rates based on the loan duration after that. In addition, the platform assigns a credit rating to each borrower based on the information disclosure before posting their application online, for lenders to bid.

During the bidding, the loan will funded only if the amount requested by the borrower is filled. Borrowers are expected to repay according by the installment schedule. If a repayment by a borrower is overdue, the borrower faces an overdue charge by the platform. If a repayment is made within 30 days behind schedule, a penalty daily interest of 0.15% is applied to the unpaid balance. The interest rate can go up to 0.6% if the repayment is overdue for more than 30 days. In addition to the fee, late repayments can trigger a rating downgrade, which affects the borrower's financing cost and the success of future applications. For outright default, the platform may take legal action to recover the loan.

2.2. Confucian cultural norms

The philosophy of Confucianism was developed based on the teachings of the Chinese philosopher Confucius (551-479 BCE) in the Spring and Autumn period and inherited by Mencius

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[13] *Renrendai* provides only principal guarantees to lenders of unsecured consumer credits.

(372-289 BCE) in the Warring States period. Since the Han Dynasty (202 BCE-220 CE), Confucianism has become the official state philosophy and the predominant moral norms. In order to maintain the middle way in life of peace and prosperity (Tu, 1998), Confucianism advocates a strict code of moral ethics one should adhere to. The core of Confucian moralities is known as *Five Constant Virtues*, which are benevolence (*ren*), righteousness (*yi*), propriety (*li*), wisdom (*zhi*), and trustworthiness (*xin*).

These Confucian virtues work together and form the moral standards that play a central part in the discipline of individual behaviors and decision making in the long history of China (Han and Altman, 2010). More importantly, Confucianism prescribes a pursuit of moral cultivation of oneself by emphasizing self-control and self-perfection. This constant self-examination that regulates one's behaviors toward the self-cultivation and refinement of one's characters, would increase moral awareness (Tu, 1998).

In fact, individuals often behave ethically according to the long-standing Confucian moral norms even in anonymous economic and financial interactions (Woods and Lamond, 2011). Confucian culture would regulate individuals' behaviors by prioritizing adherence to the virtues of benevolence, righteousness, and trustworthiness above economic profitability.[14] In addition, the virtue of trustworthiness in Confucianism usually requires individuals' adherents to be honest and trustworthy.[15] Given that the Confucian values trustworthiness, it is natural to trust the information disclosed by those who follow Confucian norms (Koehn, 2001).

3. Data, sample, and variables

3.1. Data and sample

To carve out the role of Confucian culture in investors' lending decisions in marketplace lending, we extract all loan listings posted on *Renrendai*. First-time borrowers are required to provide their ID card, residential address, bank account, and cellphone number when registering.

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[14] A notable example is the struggle between righteousness and profits. The idea of righteousness relates to living and behaving according to moral principles, rather than focusing on material gains and self-interest.[14] This internal moral constraint would guide the obliged individuals act in ways consistent with the philosophy of "righteousness over profits" and "from righteousness to profits". Accordingly, many people in China with relatively weaker rule of law and property rights, repay their unsecured credit loans because they consider it a moral responsibility (Zhang, 2017).
[15] This is manifested in the dialogue of Confucius and his students: "I do not know how a man without truthfulness is to get on"; "I daily examine myself on three points: whether, in transacting business with others, I may have been not faithful; whether, in interaction with friends, I may have been not been trustworthy; whether I may have not mastered and practiced the instructions of my teacher."

They can voluntarily provide additional information for verification, including income, educational qualification, marital status, assets, and occupation, etc. When submitting loan applications, borrowers are required to specify loan title, description, loan amount, maturity and interest rate[16]. After borrowers submit loan requests with necessary information, their loan listings will be posted online, and lenders are able to browse and filter loan listings. Lenders can place bids on the amount (minimum ¥50) of the loan listings they are willing to fund. A listing only gets funded if the full loan amount requested are filled by investors.

Our sample is composed of 314,807 loan listings spanning the period from January 1, 2011 to December 31, 2015. We exclude 675 loan listings from 2010, the launching year of *Renrendai*. All these listings are concentrated in the fourth quarter. We end our sample by the end of 2015 due to the 2,137 unsecured loan listings in 2016, with a funded rate of 99.44% which is similar to the average funded rate of secured loans.[17]

3.2. Variables

3.2.1. Dependent variables

Following previous studies (e.g., Lin, Prabhala, and Viswanathan, 2013; Hasan, He and Lu, 2022; Gao, Lin and Sias, 2023), we focus on two funding outcomes, namely the success of loan and the funded portion of a loan. We measure the success of a loan using *Success*, which is a dummy variable that equals one if a loan listing is funded and zero otherwise. We measure the funded portion of a loan (*Fraction*) as the proportion of campaign proceeds divided by the requested amount regardless of the funding outcome. Intuitively, loan listings preferred by investors are more likely to be funded and receive more campaign proceeds relative to loan size. Moreover, in further analysis, we follow previous literature (e.g., Iyer et al., 2016; Chen, Jiang and Liu, 2018; Pursiainen, 2023) and use two variables to measure ex-post loan performance. The first variable, which measures whether a borrower defaults on her loan (*Default*), is a dummy variable that equals one if a funded loan defaults and zero otherwise. The second variable captures lenders'

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[16] Borrowers can specify interest rates until December 18, 2014; afterward, the platform posts interest rates based on the loan duration.
[17] The sample in our study is similar with Chen, Huang and Ye (2020), but different from Hasan, He and Lu (2022). Firstly, we focus on unsecured consumer credits by excluding all the on-site verified or collateralized loans (the loan success rate of these two categories is close to 100%, and there have been no defaults). Secondly, we utilize a potential-dyad analysis to form potential lender-borrower loan pairs, deviating from the real lender-borrower bid pairs employed by Hasan, He and Lu (2022). Our methodology enables us to investigate whether lenders are more inclined to invest in loans listed by borrowers residing in prefectures with a more robust Confucian culture.

holding period return (*Lenders' total return*), which is calculated as net return (total payment received minus principal) divided by the principal.

3.2.2. *Key explanatory variable*

Following Chen, Ma, and Sinclair (2022), Kung and Ma (2014), we use the historical number of Confucian temples that a prefecture had established in 19th century to proxy for the strength of local Confucian culture.[18] Confucian temples were built to worship Confucian sages and local eminent Confucian exemplars. The erection of Confucian temples and the associated rituals represented an important means of promoting Confucian ethics in historical China (Yang, 1961). More Confucian temples were built in prefectures with stronger Confucian strength, which would further deepen the Confucian ethics in turn (Ho, 1962). More importantly, these Confucian temples have considerable and continuous impacts on local residents and thus shape their ethical philosophies. Therefore, the number of Confucian temples gauges the strength of Confucian cultural norms in a prefecture.[19] In particular, we use the number of temples in the 19th century to capture local Confucian culture strength because the strength of local Confucian culture were stable in the past hundreds of years and the historical measure was less likely to capture other unobserved factors (Gu, Sun and Zhou, 2023). We obtain the data on local Confucian temples from the provincial gazetteers compiled at various time points throughout the 19th century,[20] which provide the most systematic record of Confucian temples at the prefecture level. To control for the size of prefectures, we normalize the temple number by the prefecture's land area (in 1,000 km)^2 (*Temple density*). We focus on Confucian strength in the workplace of borrowers rather than their birthplace because lenders in *Renrendai* can only observe their counterparties' workplaces.

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[18] Since China is a large country and there are obvious regional disparities within a province, measuring Confucian moral strength at province-level may be too coarse. We choose the prefecture as our unit of analysis so that we can observe the rich variations that existed within a single province. For instance, prefectural disparities of Confucian strength are obvious even in *Shandong Province*, the hometown of Confucius, given that the number of Confucian temples per 1,000 km^2 in the western part of *Shandong* (e.g., *Jining*, *Liaocheng*) is two or three times that in the eastern part (e.g., *Qingdao*, *Rizhao*).

[19] Based on the specific Confucians for honoring, the temples mainly include *wenmiao* (for honoring Confucius and other sages), *minghuan xiangxian ci* (for honoring the notable officials and local virtuous Confucians), and *zhongxiao jieyi ci* (for honoring the local loyal and filial men), among others (Yao, 2000).

[20] The provincial gazetteers that record detailed information about Confucian temples in historical China include Bian et al. (1885), Hao and Xie (1984), Huang (1884), Ji et al. (1899), Jiangsusheng difangzhi bianzuan weiyuanhui (1991), Long (1950). Lü, Zhang, and Liu (1921), Ren and Yang (1948), Ruan and Chen (1822), Shen et al. (1897), Shen (1984), Sun (1882), Xie (1802), Xu and Li (1736), Yang and Chang (1796-1820), Zeng et al. (1881). Zeng and Wang (1895).

[Insert Figure 1 here]

Figure 1 depicts the geographic distribution of the density of Confucian temples (per 1,000 km^2) across 265 Chinese prefectures. The higher the temple density, the darker the colors in the figure. For instance, the number of Confucian temples was highest in prefectures located in the provinces of *Shandong*, *Zhejiang*, *Jiangsu*, *Fujian*, while those in *Gansu*, *Ningxia*, *Guangxi* had barely one or two temples (per 1,000 km^2) throughout the 19th century.

3.2.3. Control variables

To isolate the effects of Confucian culture on lending outcomes, we follow previous literature (e.g., Jiang, Liu, and Lu, 2020; Chen, Huang and Shaban, 2022) and control for several loan, borrower, and regional characteristics.[21] Specifically, we first include loan listing characteristics that are documented by previous literature (Hertzberg, Liberman, and Paravisini, 2018; Galema, 2020) to be important determinants of funding outcome and loan performance in marketplace lending, such as *Loan spread*, *Loan amount*, and *Loan maturity*. We also include the length of listing title and description (*Listing words count*) in the regressions as recent studies (e.g., Gao, Lin, and Sias, 2023) show that borrowers' writing, such as number of words, linguistic features, can reveal useful information for lenders and influence funding outcomes.

Next, we follow previous literature (Chen, Huang and Ye, 2020; Hasan, He and Lu, 2022) and include a list of borrower characteristics that affect funding outcomes of loans. In addition to personal characteristics, such as *Gender* and *Age*, we follow Jiang, Liu and Lu (2020) and include a dummy variable indicating whether more than one of the credentials provided by borrowers has been verified by the platform (*Borrower check*) in the regressions, instead of the credit ratings, to proxy borrowers' credit quality, because previous studies (e.g., Di Maggio and Yao, 2021; Chen, Huang and Shaban, 2022) show that borrowers can manipulate voluntarily disclosed information and inaccuracy of borrower-provided information is prevalent in marketplace lending market.[22] Moreover, we also include *Marriage*, *Income*, *Property ownership*, *Mortgage*, and education

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[21] Borrowers' information disclosure on *Renrendai* includes compulsory disclosure and voluntary disclosure. The former includes loan characteristics such as loan title, description, amount, maturity and borrower characteristics such as nickname, age, property ownership. The latter includes borrowers' income, education, employment, marriage, credentials for verification as well as purpose of borrowing.

[22] When making loan requests, borrowers are requested to submit valid documentation for verification by the platform, such as credit reports, diplomas, academic certificates, income statements, property certificates, among others. These documentations are disclosed voluntarily by the borrowers. More important, borrowers' credit rating reported on the platform is a snapshot of the time we collected the data, which suffers from the endogeneity estimation bias.

(*Education[3-year college]*, *Education[4-year college]*, *Education[postgraduate]*). In particular, lenders are more likely to bid for loans listed by borrowers with higher education, income, or properties. They also prefer borrowers with less debt, which are considered to be more capable of repaying the loans (Jiang, Liu, and Lu, 2020). Additionally, as borrowers' employment stability is also a major consideration in lenders' investment decisions (Dorfleitner et al., 2016), we include the size of the employer (*Firm size*), the employer industry (*Manufacturing sector, Service sector*) and borrowers working experience (*Working experience[1-3]*, *Working experience[3-5]*, *Working experience[>5]*).

For regional covariates, we include the natural logarithm of *GDP per capita* and *Population density* in a prefecture to control for local economic conditions because previous literature (e.g., Croux et al., 2020; Lin and Pursiainen, 2022) find that economic development and population concentration are positively correlated with funding outcomes of loans. We further control for prefectural bank density, defined as the number of banks scaled by land area in 100 km^2, to account for the effects of formal financing channels on marketplace lending. We also incorporate the average household deposits per capita in a prefecture to control for the regional household saving behavior. Moreover, we include the modified trustworthiness index of each province in the regressions to account for the social capital of a specific province,[23] as Hasan, He, and Lu (2022) show that the loans by borrowers from high social capital regions have better funding outcomes in online marketplace. Finally, we consider several historical regional variables that can be correlated with local Confucian culture and contemporary lending outcomes. Specifically, we first control for the prefecture-level population density in 1910, retrieved from Cao (2000), because Acemoglu, Johnson, and Robinson (2002) find that historical population density is positively associated with the levels of regional agricultural output and commercialization. We then include a dummy variable indicating prefectures with treaty ports opened in the late Qing period based on Yan et al. (1955),[24] because previous studies (e.g., Bai and Kung, 2015) show that Western religious culture

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[23] The original trustworthiness index in Zhang and Ke (2003) is constructed from an enterprise survey asking managers which province they trust the most. With the help of China Entrepreneur Survey System, the survey was conducted among Chinese business leaders in 2000, involving thirteen industries and all types of systems of ownership. More than 5000 top managers of enterprises responded the questionnaire. The question about trust is: "From your experience, which five regions do you consider most trustworthy? List from high to low." We modify the index by filtering out the impacts of local economic development because trustworthiness is highly correlated with local economic conditions (Jiang, Liu and Lu, 2020).

[24] The treaty port system dates back to the late Qing dynasty of China. Along with the "unequal treaties" that was signed by Qing government, China conceded more than 80 cities called "treaty port" to Western countries from the 1840s to the 1920s. The Westerners established municipal authorities, factories, schools, police and judiciaries in these ports and the Western missionaries were admitted by Qing government. After a hundred years, in January 11, 1943,

is likely to diffuse in prefectures having treaty ports due to the presence of Christian missionary in these places, which can undermine local Confucian culture. We present the detailed variable definitions and data sources in Appendix A.

Finally, we match the prefectural boundaries in the 19th century to those of today's China using the China Historical Geographic Information System (CHGIS) as China's prefectural boundaries have changed drastically over the past hundred years. Doing so allows us to merge the historical variables (*e.g., Temple density*, *Historical population density*) with current geographical demarcation. Figure 2 shows the details of the matching process.

[Insert Figure 2 here]

3.3. Summary statistics

For brevity, we report the sample distribution by year and province in Appendix B. Panel A shows that the number of loan listings increases over time, indicating that marketplace lending market exhibited strong growth during 2011-2015. During this period, the average success probability and the funded portion of a loan decreased dramatically during the same period from 16.364% to 5.356% and from 19.243% to 5.356%, respectively. In addition, for funded loans, the default rate rose quickly from 3.181% to 17.212%, while lenders' ex-post return declined sharply from 1.795% to -4.081%, suggesting the significant default rate due to the information asymmetry between borrowers and investors. Panel B shows that borrowers are largely concentrated in *Guangdong* and east coast provinces, such as *Jiangsu*, *Zhejiang*, *Shandong*, and *Fujian*. Both the funding probability and default rate exhibit large cross-province variation. In particular, the funding probability is the highest in *Zhejiang* (8.426% and 8.58%), followed by *Jiangsu* (8.19% and 8.321%), where the Confucianism has a high influence. Moreover, the average default rate is highest in *Liaoning* (28.1%), followed by *Inner Mongolia* (18.9%) and *Sichuan* (18.4%).

Panel A of Table 1 presents the descriptive statistics of our main variables. We find that only 6.4% of loan listing are funded, among which 14% are default, suggesting that borrowers' competition for funding is high while there is significant credit risk on *Renrendai*. On average, the loan size is ¥60,885 and the funded portion of a loan regardless of success or not is 6.563%. The annual loan spread is 7.888% and the average maturity is approximately 16 months, which indicate

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China signed treaties with Britain and the United States to abolish extraterritoriality and the treaty ports system ceased to exist.

that loan listings on *Renrendai* are small short-term loans with relatively high costs. The loan title (loan description) contains an average of 7.2 (52.5) Chinese characters.

[Insert Table 1 here]

For borrowers' characteristics, we find that only 26.9% of the borrowers have their credentials verified by the platform. Moreover, 87.2% of the borrowers are male, and 50.3% of the borrowers are married. The average age of borrowers is less than 30, and 63% of them have at least college education, suggesting that most borrowers are young and well educated. In addition, the income of 56.47% of borrowers is higher than ¥5,000. On average, 43% of borrowers own property, and 13.8% of borrowers have a home mortgage.

Panel B of Table 1 presents the correlation matrix of our key variables. We find that *Temple density* is positively and significantly correlated with two lending outcome variables, *Success* and *Fraction*. Although the unconditional relations are interesting, we next turn to multivariate tests to for a more rigorous examination of the relation between local Confucian culture and marketplace lending outcomes.

4. Main findings

4.1. The baseline model

We examine the effects of local Confucian culture on the funding outcomes in marketplace lending by estimating Eq. (1) below:

$$y_{i,j,p,t} = \beta_0 + \beta_1 Temple\ density_{j,p} + \beta_2 X_{i,j,p,t} + u_t + \varepsilon_{i,j,p,t} \qquad (1),$$

where $y_{i,j,p,t}$ refers to whether loan listing *i* borrowed by individual *j* in prefecture *p* and year *t* is successfully funded (*Success*) or its funding portion (*Fraction*). The key explanatory variable is $Temple\ density_{j,p}$, which measures the strength of local Confucian culture influence in prefecture *p* where borrower *j* is working. *X* represents the set of control variables described in Section 3.2. u_t represents the year fixed effects and $\varepsilon_{i,j,p,t}$ is the error term. We conduct logit regressions using the dependent variable *Success, which* is a binary variable. We also perform Ordinary Least Squares (OLS) regressions with dependent variable *Fraction,* which is a continuous variable measuring the funding ratio. Our key variable of interest is β_1, which captures the effects of local Confucian culture of a prefecture on the successful probability or the funding ratio.

[Insert Table 2 here]

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Table 2 reports the results of our baseline regressions in Eq. (1). In columns (1) and (3), we only include the key explanatory variables while in columns (2) and (4), we include all control variables described in Section 3.2.3 and year fixed effects. We find that the coefficient estimate of *Temple density* is positively and significantly associated with *Success* (*z*-statistics = 2.72 and 3.52) and *Fraction* (*t*-statistics = 2.67 and 3.63) in columns (1) and (2) and columns (3) and (4), respectively. Economically, a one standard deviation increase in *Temple density* corresponds to the odds of being funded increase by approximately 1.069 ($e^{6.655 \times 0.010}$) times and a 7% (6.655×0.069/6.563) increase in the funded portion of a loan relative to the sample mean. Collectively, these results suggest that a borrower from where Confucian culture has a stronger influence is more likely to be funded and get a higher funded portion of the requested amount.

The coefficients of other control variables are generally consistent with prior literature. For instance, loans with lower risk, such as those with lower spread and longer title and description, tend to have a higher probability of being funded and a higher funded portion (Dorfleitner et al., 2016; Chen, Huang, and Ye, 2020). Similar to Galak, Small, and Stephen (2011), we find that the demographics and economic conditions of prospective borrowers are important factors in lenders' decisions. In particular, married borrowers, borrowers with high personal income, older borrowers, and borrowers with more verifiable credentials are more likely experience favorable lending outcomes.

Furthermore, we conduct a battery of tests to ensure our results are robust to alternative measures of Confucian culture, model specifications and sampling criteria. The results are reported in Appendix C. One of the challenges in our study lies in constructing a valid measure to proxy for the strength of Confucian culture. We consider the robustness of our findings by using alternative Confucian culture measures. Following previous literature (e.g., Kung and Ma, 2014; Du, 2015), we employ *Jinshi density* and *Chaste women density* and as two alternative proxies for Confucianism and re-conduct the regressions. Specifically, *Jinshi density* is defined as the number of *Jinshi* in the Ming and Qing Dynasty normalized by land area (per 100 km^2). It is a valid proxy in that obtaining *Jinshi* degree via the civil service exam in Imperial China requires a thorough understanding of Confucianism as a central subject for the examination. The data are manually collected from Zhu and Xie (1980). *Chaste women density* is defined as the number of chaste women officially elected by the Qing Dynasty normalized by land area. It captures the strength of local Confucian culture in that the deeds of the chaste women were considered a reflection of the

Confucian ethics pertaining to subordination, loyalty and purity. More important, the density of chaste women was less likely to be correlated with economic prosperity. The data are manually collected from provincial gazetteers. The results presented in Panel A and B show that the coefficient estimates of *Jinshi density* and *Chaste women density* are consistently and significantly positive, indicating that stronger Confucian culture is associated with an increase in funding likelihood and fraction of proceeds relative to loan size.

Secondly, we check the robustness of our results to the alternative model specifications. Given that only 6.4% of loan listing are successfully funded and the proportion of proceeds relative to loan amount for 92.42% of the loan listing is equal to zero, we employ the Re-logit and Tobit specification. [25] The estimates reported in Panel C show that borrowers from prefectures with strong Confucian culture are indeed more preferred by lenders.

Thirdly, we perform several subsample tests according to additional sample filtering criteria where we expect positive effects of Confucianism remain robust. According to laws and regulations in China, loans with extreme amount or interest rate are illegal. [26] To address the potential bias related to illegal fundraising, we drop the loan listings with large loan size (larger than ¥ 200,000) or high annualized interest rate (higher than 24%). The re-estimated results are reported in Panel D. We find the coefficients of *Temple density* are still significantly positive at 1% confidence level. The east-west difference in China has been considerable historically, with the east being culturally and financially more prosperous. Thus, one might suspect that the positive effects of Confucian strength on funding outcomes arises from the inherent east-west difference. To address this concern, we remove the loan listed by borrowers residing in central and western provinces and re-run the analyses, with the resulting estimations presented in Panel E. [27] The results confirm our claim that Confucian culture facilitate successful funding.

Lastly, some of the loan listings on *Renrendai* get fully funded very quickly. In all the loan listings that are successfully funded, 3.3% of loans are fully funded in less than one minute, 10.7%

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[25] Following the methods suggested by King and Zeng (2001), we use the Re-logit regression to address problems in the statistical analysis of rare events data, binary dependent variables with dozens to thousands of times fewer ones than zeros.

[26] According to the regulation of the supreme people's court of the People's Republic of China, if an individual illegally collects funds and the amount is more than ¥ 200,000, he would be investigated for criminal responsibility. And the private loan with annual interest rate less than or equal to 24% would be protected by law.

[27] The central and western provinces in our sample include *Inner Mongolia, Anhui, Shanxi, Jiangxi, Henan, Hubei, Hunan, Yunnan, Sichuan, Ningxia, Gansu, Guizhou, Chongqing, Shaanxi, Qinghai, Guangxi*. The remaining eastern China include *Beijing, Shanghai, Tianjin, Shandong, Guangdong, Jiangsu, Hebei, Zhejiang, Hainan, Fujian, Liaoning*.

in no more than five minutes, 13.9% in less than ten minutes. Lenders usually have a short time frame to make decisions given that loan details are not observable until they are publicly listed. Due to time pressure, lenders in the marketplace lending market primarily focus on interest rates and quickly seize high-interest-rate loan listings without sufficiently examining other information in loan contracts (Liao et al., 2021). To address this fast investment decision bias, we exclude the loan listings fully funded in less than five minutes and re-estimate the regression. The results are presented in Panel F and the coefficient estimates of *Temple density* continue to be significantly positive. [28]

4.2. Tests of endogeneity

Although we have shown a robust positive relation between borrowers' local Confucian culture and their lending outcomes, its causal interpretation remains hypothetical. The baseline regressions are potentially subject to three types of endogeneity. First, although we include a long list of covariates in the baseline regressions, our estimation may suffer from omitted variables that can be correlated with both the local Confucian culture and financing outcomes. The second concern is measurement error: counting the number of Confucian temples only in the 19th century may not be sufficient to reflect Confucian culture strength given its long existence over 2,000 years.[29] The last issue is selection bias -- borrowers with certain traits may self-select into the prefectures. To alleviate these endogeneity concerns, our first strategy is to explicitly describe issues related to potential omitted variables, measurement error bias, and selection bias that we can think of, and design specific tests to address them. In our second strategy, we employ an instrumental variable approach to mitigate the remaining endogeneity concerns. We tabulate the results in Table 3, Table 4 and Table 5.

4.2.1. Tests of omitted variables

First, other religions in borrowers' domicile regions, such as Taoism and Buddhism, also advocate ethical behaviors, and thus may play an important role in influencing lenders' investment decisions (Siegel, Licht, and Schwartz, 2011; He and Hu, 2016). To account for this possibility,

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[28] In the un-tabulated tests, we find that our results remain qualitatively similar if we exclude the loan listing fully funded in less than three minutes or ten minutes.

[29] Measurement error may also arise from the crudeness of the proxy, given that only the number of Confucian temples were observed but not their sizes and the number of pilgrims in each temple.

we include five additional variables that capture the intensity of local religions other than Confucianism, such as *Buddhism density, Taoism density*, *Christianity density, Catholicism density*, *Islamism density* in the regressions. In particular, *Buddhism density, Taoism density, Christianity density, Catholicism density*, *Islamism density* are defined as the number of religious sites for Buddhism activities, Taoism activities, Christianity activities, Catholicism activities, and Islamism activities normalized by the land area in a prefecture in 100 km^2, respectively. Moreover, borrowers from regions with strong clan culture may also be preferred by investors as kinship-based reputation and trust help to form strong moral constraints to guide individuals' behavior (Greif and Tabellini, 2017). Following Chen, Ma and Sinclair (2022), we measure the strength of local clan culture using *Genealogy density*, which is defined as the number of genealogy books compiled in a prefecture before 2007 normalized by land area (per 100 km^2). Genealogy books recorded lineage members and relationships to concretize the sense of belonging and promote lineage cohesion and specified clan rules for members to follow, detailing 'carrots' for conformity and 'sticks' for deviations. It captures the strength of clan culture in the reasoning that regions that cared more about clan solidarity and hence devoted more efforts to clan organizing would, in general, have kept more genealogy books. Data are obtained from Comprehensive Catalogue on Chinese Genealogy (*Zhongguo Jiapu Zongmu* 2009) of Shanghai Library. Furthermore, we include the provincial-level composite social capital index as in Hasen, He, and Lu (2021), who show that social capital affects funding outcomes in marketplace lending.[30] The results in Panel A of Table 3 show that *Temple density* still has a positive and significant effect on the probability of funding success and the funded portion of loans after controlling for variables related to other regional religions and culture, suggesting that other cultural traits do not fully explain our findings.

[Insert Table 3 here]

To further control for unobservable time-varying regional characteristics and year-month variant factors that may correlate with borrowers' local Confucian culture and funding outcomes of their loans, we control for province-year fixed effects and year-month fixed effects. The results are presented in Panel B and Panel C of Table 3, respectively. We find that the coefficients of *Temple density* are remain positive and statistically significant, suggesting that the positive effect

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[30] Social capital refers to features of social organizations, such as networks, norms and trust that facilitate action and cooperation for mutual benefit (Putnam, Leonardi, and Nanetti, 1994). For this test, we remove *Trustworthiness* in Eq. (1) as it is one dimension of the social capital index.

of borrowers' local Confucian culture on their loan outcomes is less likely to be driven by provincial-level macroeconomic factors that are changing over time or year-month time variant factors.

4.2.2. Tests of selection issues

By no means people randomly select their domicile regions. Instead, many factors determine a person's likelihood of choosing to live in a region with stronger Confucian culture influence. To the extent that these factors are correlated with a person's morality in marketplace lending, our estimated effect of borrowers' local Confucian culture on funding outcomes of their loans is subject to selection biases. To mitigate this concern, we first remove the loans listed by borrowers whose birthplace and working place is not the same.[31] The results in Panel D of Table 3 show that the exclusion of these moving borrowers does not affect our baseline findings. Second, we match each borrower in a prefecture with high *Temple density* with a borrower in a prefecture with low *Temple density* using the Propensity Score Matching (PSM) method to control for the selection bias. In particular, we first model the borrower level probability of living in a high *Temple density* prefecture, where the dependent variable is a dummy variable that equals one if borrowers' prefectural temple density is above or equal to the sample mean and zero otherwise. We then the nearest neighbor matching approach is used to estimate ATT. The results in Panel E of Table 3 reveal that *Temple density* remains positive and significant, indicating that ethical borrowers choosing to live in regions with stronger Confucian culture is unlikely to be the driving force of our results.

4.2.3. Consider lenders' information: The effects of Confucian culture in lenders' bidding decision

Our estimations so far do not include lenders' information, as *Renrendai* only displays the borrowers' information, leaving lenders' information unobservable. This omission may introduce bias to our baseline results, given the existence of both home and cultural similarity preference in the marketplace lending market (Lin and Viswanathan, 2016; D'Acunto et al, 2021). More importantly, while our results suggest that borrowers from regions with a strong Confucian culture

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[31] Since *Renrendai* did not disclose borrowers' immigration history, we define immigrants as those birthplaces are inconsistent with workplace at the prefecture level.

are more preferred by investors, little is known about the role of Confucian strength on lenders' lending decisions in the marketplace lending market. To address this gap and control for lenders' crucial information, we undertake a two-step process to identify a specific subsample associated with borrower and lender characteristics.

Following the methodology of Chen, Jiang, and Liu (2018), Hasan, He, and Lu (2021), and Jiang, Liu, and Lu (2020), we first construct the lender-level controls by identifying each lender according to a unique ID assigned by the platform. For a lender to obtain a unique ID, they must have at least one loan on the platform. We gather loan-level characteristics and bidding records from October 2011 to December 2015, which include the lender user ID, loan ID, bid timestamp, and bid amount. After matching lender and borrower IDs, we identify 2,276 lenders with demographics in 63,177 bidding records, corresponding to 18,801 loans.

Subsequently, following Lin and Viswanathan (2016) and Sorenson and Stuart (2001), we employ a potential-dyad analysis to investigate the impact of Confucian culture on the likelihood of lenders investing in a specific loan. This approach establishes all possible pairwise combinations between loans and lenders, setting a bidding indicator that equals one if the lender lends money to the specific loan listing and zero otherwise. By modeling the alternative loans faced by each lender, this approach allows us to study whether lenders are more likely to invest in loans listed by borrowers residing in prefectures with stronger Confucian culture. We obtain the final lender-borrower pairs by matching the bidding records with the nearest investible loan based on borrower-level information (credit rating, interest rate, loan amount, and maturity) in the potential-dyad set. Finally, our final sample has 85,389 lender-borrower pairs.

Next, we examine the impact of Confucian culture on lenders' bidding behavior. To isolate the effects of culturally induced morality and eliminate alternative explanations, we control for the same prefecture indicator to absorb the effect of local bias. Additionally, we include a set of variables at the lender, loan, borrower, and prefectural levels that may influence lending behavior. The model is formalized as follows:

$$Bidding_{i,j,t} = \alpha + \beta Temple\ density_i + \gamma L\_vars_j + \delta B\_vars_i + w_{i,j} + \mu_t + \varepsilon_{ijt} \qquad (2)$$

where the $Bidding_{i,j,t}$ is a dummy variable equaling one if lender j lends to borrower i at time t, and zero otherwise. *Temple density* is the number of Confucian temples normalized by the land area in a prefecture, which is the same as Eq. (1). *L_vars* represents lender-level information, including gender, age, marriage status, income, property ownership, mortgage, education, working industry,

and working experiences. These lender-level characteristics are defined in the same manner as borrower-level characteristics. *B_vars* constitutes a rich set of loan, borrower, and prefectural level characteristics, consistent with the specifications in Eq. (1). The indicator *w* takes a value of one if borrower *i* and lender *j* are from the same prefecture, aiming to absorb the effect of local bias. Other variables maintain the same definitions as in Eq. (1). To address the potential autocorrelation among observations within the same lender group in the residual term, we cluster standard errors at the lender level.

Given that our dependent variable is a dummy variable, we employ logit regression for coefficient estimates, and the results are presented in Table 4. In column (1), we only add the *Temple density* and year fixed effects into the model. The coefficient of *Temple density* is highly significant and amounts to 0.009. Moving to column (2) and adding the same prefecture indicator along with a battery of lender, loan, borrower, and prefectural-level characteristics, we estimate a statistically significant positive effect of temple density on the likelihood of bidding. This suggests that lenders are more likely to lend money to borrowers from regions with higher temple density. In the last column, we replace the same prefecture indicator with the temple density of the lender's domicile prefecture. The coefficient of *Temple density* is still significantly positive, indicating that, while holding lenders' cultural norms, lenders are indeed more likely to lend to borrowers from prefectures with stronger Confucianism.

[Insert Table 4 here]

4.2.4. The instrumental variable approach

To further address endogeneity concerns, we employ an instrumental variable approach similar to Du (2015), Chen, Xiao, and Zhao (2021). In particular, we use an instrumental variable that is correlated with borrowers' local Confucian culture and can only affect funding outcomes of their loans through its impact on local Confucian culture. The instrument is defined as the shortest distance to the nearest Confucian center (*Distance to Confucian centers*). Confucius (551-479 BCE) developed the Confucian ethics in the Spring and Autumn period, which became the benchmark for all future Confucian intellectual discourse. In the long-run evolution of Confucianism, seven

Confucian centers were created in China, as shown in Figure 1.[32] These centers are the nationally famous monuments in succeeding centuries as Confucius had lived there for a long time to recruit students and to spread his philosophy. Therefore, our instrument would satisfy the relevance criteria. On the other hand, the distance from a prefecture to these centers is unlikely to affect funding outcomes in marketplace lending other than through the channel of Confucian culture, as the centers are not located at economic and financial centers in the 19th century or later. Thus, our instrument is likely to satisfy the exclusion criteria as well.

The results estimated using the instrumental variable approach in the framework of two-stage least squares (2SLS) regressions are reported in Table 5. We present the first-stage regression in column (1) and (3). *Distance to Confucian centers* has a negative and significant association with *Temple density* (t-statistic = -4.99). The instrument also passes the relevance test as the F-statistic from the join test of excluded instrument is 24.94 and significant at the 1% level. The second stage estimations in columns (2) and (4) show that the predicted value of temple density (*Instrumented temple density*) remains positively and significantly associated with the probability of funding success and the funded portion of loans.

[Insert Table 5 here]

Taken together, although endogeneity is a perennial issue that no empirical test can entirely rule out, we conduct a battery of tests to alleviate endogeneity concerns and find that our main conclusion holds. Although each test can be subject to criticism, the totality of evidence points to a causal relation going from borrowers' local Confucian culture to funding outcomes of their loans.

5. Further analyses

5.1. Cross-sectional heterogeneity in results

To substantiate the channels through which borrowers' local Confucian culture affects funding outcomes of their loans, in this section, we investigate how the culture-funding relation varies across borrower-level and region-level characteristics.

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[32] The seven centers are *Lu* in *Qufu of Shandong* Province, *Luo* in *Chengdu* of *Sichuan* Province, *Shu* in *Luoyang* of *Henan* Province, *Min* in *Longyan* and *Sanming* of *Fujian* Province, *Taizhou* in *Dongtai* of *Jiangsu* Province, *Zhedong* in *Ningbo* and *Shaoxing* of *Zhejiang* Province, and *Linchuan* in *Linchuan* of *Jiangxi* Province.

Theoretically, suppose lenders believe that lending to borrowers from prefectures with strong Confucian culture make them less likely to suffer from adverse selection and moral hazard, then it is reasonable to predict that the marginal benefits of Confucianism would be particularly greater for borrowers with lower information asymmetry, because screening through soft information (*e.g.*, culture norms) should be relatively more important when evaluating borrowers with higher information asymmetry (Iyer et al., 2016). To test this proposition, we partition the sample according to two indicators of the level of information asymmetry: *Important certification* and *Successful funding history*.

[Insert Table 6 here]

To be specific, the previous study shows that compared with low level certificate borrowers, borrowers with high level of credit certifications have lower information asymmetry as certification is considered to be a useful signaling tool in marketplace lending(Zhang and Liu, 2012). We classify certifications related to income, occupation and position as important certifications because they can accurately reflect borrowers' income stability and thus are closely related to loan repayment. They are also widely used in predicting loan delinquency. We employ whether the borrower obtains more than one certification on the platform and at least one of them is important certification (*Important certification*) as our first proxy and partition the sample into low level certification borrowers (borrowers without important certification) and high level certification borrowers (borrowers with important certification). The results in Panel A of Table 6 show that the coefficient estimates of *Temple density* are significantly positive among borrowers with low level certification but not among high level certification borrowers, suggesting that the positive effect of Confucianism on funding outcomes would become greater for borrowers with higher information asymmetry. Furthermore, credit history serve as a signaling device to reduce information asymmetry in the marketplace lending process (Carmichael, 2017). We use a dummy variable that equals one if the borrower had successfully funding history on the platform before the loan application and zero otherwise (*Successfully funding history*), as an alternative proxy for the level of information asymmetry. The estimation results based on subsamples are shown in Panel B of Table 6. The coefficient estimates of *Temple density* are positive and statistically significant at the 1% level in the subsample of borrowers without successful funding history (column (1) and (2)) but insignificant among borrowers with successful funding history (column

(3) and (4)), suggesting that the favorable impacts of Confucianism on funding outcomes are greater for borrowers who did not have successful funding history on the platform.

To further explore whether Confucian moral norms serve as substitutes for other dimensions of social capital and formal institutions (*e.g.*, laws and regulations) or instead as complements, we focus on the institutional environment of borrowers' domicile province, with special attention to regional trustworthiness and legal environment. Along the line with the trust-intensive nature of financial transactions, borrowers' trustworthiness matters in the marketplace lending market. In particular, borrowers who appear more trustworthy have higher probabilities of having their loans funded, and those borrowers indeed have better credit scores and lower default rates (Duarte, Siegel, and Young, 2012). Panel C of Table 4 re-estimates Equation (1) by partitioning borrowers into two groups by their domicile provinces' trustworthiness, considered an important component of social capital. The province is classified lower trustworthiness if the province's modified trustworthiness index is below or equal to sample mean. We find that the estimated coefficients of *Temple density* are positive and significant at the 1% level for borrowers from regions with lower trustworthiness but insignificant for the subsample of regions with higher trustworthiness, identifying a substitution effect between trustworthiness and culture norms.

Law and finance theory proposed by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998) holds that legal system which provides strong creditor protection is more conducive to enforcing financial contracts. A natural question is how Confucian culture interact with formal institutions, such as the legal system, in personal loan markets. On the one hand, cultural norms and formal institutions may be substitutes: where formal institutions fail to increase the probability of being fully funded, cultural norms can allay the deficiency. This view implies that borrowers from regions with a better legal environment would have less to gain from Confucianism in that as an informal contracting mechanism, Confucian culture can assuage lenders' concern about credit default and plays an especially prominent role in regions with a weaker legal environment. On the other hand, cultural norms and formal institutions may be complements in the marketplace lending market, indicating that the positive effect of Confucian moral norms on success rate is more pronounced for borrowers residing in regions with better legal environments. This complementarity arises because Confucian culture would enhance lenders' ability to force repayment and reduce costs of enforcing contracts through the legal system. To investigate empirically whether Confucian morality and legal environment are complements or substitutes in

the marketplace lending market, we use the legal environment index constructed by Wang, Fan, and Yu (2016) as a proxy for provincial legal environment. We partition the sample on the basis of legal environment of borrowers' domicile province in each year and then estimate the effect of Confucian temple density on the funding outcomes. The estimation results are shown in the Panel D of Table 6. The coefficients of *Temple density* are positive and significantly different from zero among borrowers from better legal environment (legal environment index is above sample mean) but insignificant among borrowers from weak legal environment (legal environment index is below or equal to sample mean), supporting the notion that as an important type of generalized morality, Confucian norms seem to complement legal system in the marketplace lending market.

Studies on long-term persistence must account for the circumstances under which cultural norms persist and when they become malleable (Giuliano and Nunn, 2021). While Confucianism has, on the whole, persisted to nowadays, its persistence is also uneven across regions, which inspires us to examine factors that may plausibly account for this uneven transmission of Confucian culture over time. Specifically, we employ Cultural Revolution (1966-1976), which involved nationwide conflict and political campaigns, as a negative shock to Confucianism. Given that this political movement was conceived to condemn Confucius, we expect the Cultural Revolution may have undermined the positive effects of Confucian culture in personal loan market. During the initial phase (1967-1969), the revolution was pursued with extreme violence, resulting in a total of 273,934 deaths and approximately 13.4 million victims of imprisonment, beatings, expulsions from homes, and other forms of persecution (Walder, 2014). We use the spatial variation in the ratio of fatality in the rural population in this period to proxy the potential disruption Cultural Revolution may have brought to bear upon Confucianism. Data on Cultural Revolution come from Walder (2014), collected from county and prefecture gazetteers published in the 1980s and 1990s. The estimation results, which are presented in Panel E of Table 6, show that the coefficients of *Temple density* are significantly positive among borrowers in regions suffer less from Cultural Revolution (*Fatality* is below or equal to sample mean) but insignificant among borrowers in regions with larger Cultural Revolution impact (*Fatality* is above sample mean), implying the Cultural Revolution has weakened the positive role of Confucian norms on the fully funded probability and proportion of proceeds relative to the loan amount.

5.2. Confucian culture norms and other loan outcomes and characteristics

In this section, we further examine the effects of borrowers' local Confucian culture on other loan outcomes of their funded loans and several important loan characteristics. We start by testing whether the strength of Confucian culture affects the number of lenders for a fully funded listing and the time interval between the time a loan is listed and the time that loan is fully funded. The results reported in the first two columns of Table 7 show that given a successfully funded loan, the strength of Confucianism in borrowers' domicile prefecture has significantly negative effects on the number of lenders and the time interval. These results indicate that loan listed by borrowers with strong Confucian culture are more preferred by lenders reflected by their low diversification demands and faster investment decisions.

[Insert Table 7 here]

Moreover, prior studies document that borrowers' cultural traits tend to reduce asymmetric information between transacting parties and make the borrowers receive more favorable terms (Burch, Ghose, and Wattal, 2014; Fisman, Paravisini, and Vig, 2017). Consequently, we hypothesize that loans listed by borrowers residing in prefectures with strong moral constraints have larger loan size, lower financing costs and longer maturity. To test these conjectures, we explore how borrowers' moral constraints derived from Confucian ethics affect loan size, financing costs and loan maturity. We replace *Success* and *Fraction* with loan size (*Loan Amount*), the difference between annualized loan interest rate and the benchmark rate of the People's Bank of China (*Loan spread*) and the duration of the loan in months (*Loan maturity*) as dependent variables, respectively, and then re-estimate the regression. The results reported in column (3)-(5) of Table 7 reveal that the coefficient estimate of *Temple density* is significantly negative when *Loan spread* is the dependent variable and is significantly positive when *Loan Amount* and *Loan maturity* are the dependent variables. These findings suggest that borrowers from prefectures with strong culture norms reduce financing costs and increase the loan size and maturity.

5.3. The effects of culture norms on the ex-post outcomes of marketplace lending loans

The baseline results reveal that borrowers residing in regions with strong moral constraints are more likely to obtain a loan in marketplace lending. Although the result is consistent with the role of Confucian culture in signaling borrowers' creditworthiness and behavioral consistency, an alternative behavioral argument could also explain the findings. Specifically, previous studies (e.g., Kahneman and Tversky, 1972; Gilbert and Hixon, 1991; Bordalo et al., 2016) show that individual

lenders are susceptible to behavioral biases such as representativeness and stereotype. To the extent that the lenders assign higher weight of trustworthiness to borrowers living in regions with stronger Confucian culture due to these biases, the loans by borrowers living in regions with stronger Confucian culture are likely to enjoy favorable lending outcomes. However, an important implication of this argument is that these lending decisions are likely to be suboptimal.

To examine this possibility, we investigate how borrowers' local Confucian culture affects ex-post outcomes of the funded loans. Specifically, we follow Iyer et al. (2016), Chen, Jiang and Liu (2018), Pursiainen (2023) and focus on two measures, i.e., the loan default rates (*Default*) and lenders' returns (*Lenders' total return*). If the behavioral argument can explain our results, we expect that loans to borrowers living in regions with stronger Confucian culture should have higher expected rates of default and lower expected rates of return. In doing so, we use *Default* and *Lenders' total return* as the dependent variable in Eq. (1), respectively.

Table 8 column (1) shows that the coefficient estimate of *Temple density* is negative and significant, suggesting that the loans by borrowers from regions with stronger Confucian culture have a lower default probability. In column (2), the coefficient estimate of *Temple density* is positive and significant, suggesting that investors enjoy higher returns by lending to loans by borrowers in regions stronger Confucian culture. These findings reveal that the probability overweighting by lenders are unlikely the driving force of our results. Instead, the findings that lending to borrowers from regions with stronger Confucian culture is more profitable and less risky for investors are consistent with the notion that Confucian ethics indeed lessen borrowers' moral hazard by motivating them to perform as promised.

[Insert Table 8 here]

5.4. A horserace test

In our analysis, we focus on Confucian strength in borrowers' workplace rather than their birthplace. In this section, we further examine whether it is the local Confucian culture in their workplace or birthplace that matters in marketplace lending. Previous literature (e.g., Hofstede, Hofstede and Minkov, 2010; Delis, Dioikitopoulos and Ongena, 2023) finds that individuals' birthplace cultural traits can affect their economic behavior and financial decisions because culture norms is typically learned in childhood when one's mind is impressionable and mental programming of children is easily imprinted and retained.

To investigate this, we conduct a horserace test by including the Confucian temple density in borrowers' birthplace (*Temple density of birthplace*) in the regressions in Tables 2 and 8 and present the results in Panels A and B of Table 9, respectively. Panel A of Table 9 shows that *Temple density* still has positive and significant effects on *Success* and *Fraction* while *Temple density of birthplace* has insignificant effects. Panel B of Table 9 shows that only *Temple density of birthplace* have a significantly negative effect on *Default* and positive effect on *Lenders' total return* while the effects of *Temple density* are insignificant. The results suggest that loans listed by borrowers working in regions with strong Confucian culture are more likely to get funded. However, only the Confucian culture in borrowers' birthplace matters for ex-post loan performance. Given that *Renrendai* only discloses borrowers' workplace on its platform, the finding implies that investors in marketplace lending make imperfect investment decisions by incorporating borrowers' regional characteristics due to limited information access. More importantly, the evidence that Confucian culture in borrowers' birthplace rather than workplace reveals that as a persistent cultural trait, Confucian moral norms are inherited within families and passed down to the next generations.

[Insert Table 9 here]

6. Conclusion

Using data from one of the largest peer-to-peer lending platforms in China, we examine the informational role of moral norms in online lending markets. We use the density of historical Confucian temples to measure local moral norms and find that borrowers residing in regions with more Confucian temples are more likely to have their loan listings funded and receive more campaign proceeds relative to loan size. Furthermore, we find that these borrowers have lower loan default probabilities, and their lenders enjoy higher returns.

To alleviate endogeneity concerns, we employ a multi-pronged approach, including controlling for other religious and cultural traits that could affect both Confucian strength and lending outcomes, including Buddhism & Taoism density, Christianity & Catholicism density, Islamism density and social capital index. We further control for provincial-specific time-varying covariates by including the interactions of province dummies and year dummies. We also remove the loans listed by immigrants and use propensity score matching method to address the self-selection issue. In addition, we perform 2SLS regression using the shortest distance to Confucian

center as the instrument. We find that the positive effects of moral norms on lending outcomes continue to hold in these tests. Cross sectional analysis reveal that the positive effect of moral norms is more pronounced in regions with weak trustworthiness and legal environments.

Taken together, our findings reveal the unique role of moral norms in enhancing transaction efficiency by mitigating the adverse selection and moral hazard problems in peer-to-peer lending.

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Appendix A: Variable definitions

Variable	Definition
Panel A: Lending outcomes	
Success	A dummy variable that equals one if the loan listing is funded and zero otherwise. (Source: Renrendai)
Fraction	Proportion of campaign proceeds out of the total loan amount (%). (Source: Renrendai)
Default	A dummy variable that equals one if the borrower defaults on the loan, and zero otherwise. (Source: Renrendai)
Lenders' total return	The difference between total payment received and principal over principal. (Source: Renrendai)
Number of bids	Number of bids placed on a listing when the listing is successfully funded. (Source: Renrendai)
Bid duration	The natural logarithm of time interval (in minutes) between the time the listing is created and the time the listing is fully funded. (Source: Renrendai)
Panel B: The strength of local Confucian culture	
Temple density	The number of Confucian temples normalized by the land area in a prefecture (per 1,000 km^2) in the 19th century. (Source: Provincial Gazetteers)
Jinshi density	The number of *Jinshi* in the Ming and Qing Dynasty normalized by land area in a prefecture (per 100 km^2). (Source: Zhu and Xie, 1980)
Chaste women density	The number of chaste women officially elected by the Qing court normalized by land area in a prefecture (per 10 km^2). (Source: Provincial Gazetteers)
Panel C: Loan-level characteristics	
Loan spread	The difference between annualized loan interest rate and the benchmark rate of the People's Bank of China. (Source: Renrendai)
Loan amount	Loan amount (in thousands of RMB). (Source: Renrendai)
Loan maturity	The duration of the loan in months. (Source: Renrendai)
Title length	The number of words in the loan listing title (in hundreds of words). (Source: Renrendai)
Listing word count	The number of words in the loan description (in hundreds of words). (Source: Renrendai)
Panel D: Borrower-level characteristics	
Gender	A dummy variable that equals one if the borrower is male, and zero otherwise. (Source: Renrendai)
Age	Borrower's age. (Source: Renrendai)
Borrower check	A dummy variable that equals one if more than one of the credit certificates provided by the borrowers has been verified by the platform, and zero otherwise. (Source: Renrendai)
Marriage	A dummy variable that equals one if the borrower is married, and zero otherwise. (Source: Renrendai)
Income	An ordinal variable that ranges from 1 to 7, denoting borrowers' monthly income (in RMB) of less than 1,000, 1,001-2,000, 2,001-5,000, 5,001-10,000, 10,001-20,000, 20,001-50,000, and above 50,001, respectively. (Source: Renrendai)
Property ownership	A dummy variable that equals one if the borrower owns a property, and zero otherwise. (Source: Renrendai)
Mortgage	A dummy variable that equals one if the borrower has an outstanding mortgage, and zero otherwise. (Source: Renrendai)
Education[3-year college]	A dummy variable that equals to oneif the borrower's education level is 3-year college, and zero otherwise. (Source: Renrendai)
Education[4-year college]	A dummy variable that equals to one if the borrower's education level is 4 year college, and zero otherwise. (Source: Renrendai)
Education[postgraduate]	A dummy variable that equals to one if the borrower's education level is postgraduate, and zero otherwise. (Source: Renrendai)
Firm size	An ordinal variable that ranges from 1 to 4, denoting the number of employees in the firms borrowers work for, i.e., firms with less than 10, 11-100, 101-500, and more than 500 employees, respectively. (Source: Renrendai)
Manufacturing sector	A dummy variable that equals one if the borrower works in the manufacturing sector and zero otherwise. (Source: Renrendai)

Service sector	A dummy variable that equals one if the borrower works in the service sector and zero otherwise. (Source: Renrendai)
Working experience[1-3]	A dummy variable that equals one if the borrower's working experience is 1-3 years and zero otherwise. (Source: Renrendai)
Working experience[3-5]	A dummy variable that equals one if the borrower's working experience is 3-5 years and zero otherwise. (Source: Renrendai)
Working experience[>5]	A dummy variable that equals one if the borrower's working experience is more than 5 years and zero otherwise. (Source: Renrendai)
Panel E: Prefectural variables	
Ln(GDP per capita)	The natural logarithm of GDP divided by the population in a prefecture. (Source: China City Statistical Yearbook, 2011-2015)
Population density	The natural logarithm of one plus population density in a prefecture. (Source: China City Statistical Yearbook, 2011-2015)
Bank density	The number of banks normalized by the land area in a prefecture (per 100 km^2). (Source: China Banking and Insurance Regulatory Commission)
Savings per capita	Household savings deposits of financial institutions divided by the population in a prefecture. (Source: China City Statistical Yearbook, 2011-2015)
Trustworthiness	The provincial trustworthiness index. The index is orthogonal to *Ln(GDP per capita)* (Source: Zhang and Ke, 2003)
Historical population density	The natural logarithm of one plus population density in a prefecture in 1910. (Source: Cao, 2000)
Treaty port	A dummy variable that equals one if the prefecture is a treaty port in historical China, and zero otherwise. (Source: Yan et al., 1955)
Social Capital	A composite index of social capital. (Source: Hasan, He and Lu, 2022)
Genealogy density	The number of genealogy books compiled in a prefecture before 2007 normalized by land area in the prefecture (per 100 km^2). (Source: Comprehensive Catalogue on Chinese Genealogy (*Zhongguo Jiapu Zongmu*, 2009) of Shanghai Library)
Buddhism density	The number of religious sites for Buddhism activities normalized by the land area in a prefecture (per 100 km^2) in 2004. (Source: China's 2004 Economic Census)
Taoism density	The number of religious sites for Taoism activities normalized by the land area in a prefecture (per 100 km^2) in 2004. (Source: China's 2004 Economic Census)
Christianity density	The number of religious sites for Christianity activities normalized by the land area in a prefecture (per 100 km^2) in 2004. (Source: China's 2004 Economic Census)
Catholicism density	The number of religious sites for Catholicism activities normalized by the land area in a prefecture (per 100 km^2) in 2004. (Source: China's 2004 Economic Census)
Islamism density	The number of religious sites for Islamism activities normalized by the land area in a prefecture (per 100 km^2) in 2004. (Source: China's 2004 Economic Census)
Important certification	A dummy variable that equals one if the borrower obtained more than one certification and at least one of them is important certification (certifications related to income, occupation and position) and zero otherwise. (Source: Renrendai)
Successful funding history	A dummy variable that equals one if the borrower had at least one successfully funded listing at the time of the loan listing was created and zero otherwise. (Source: Renrendai)
Legal environment	The provincial legal environment index. (Source: Wang, Fan and Yu, 2016)
Fatality	The number of fatalities divided by the rural population during the Cultural Revolution in a prefecture. (Source: Walder, 2014)
Distance to Confucian center	The prefecture's shortest distance to the nearest Confucian center. (Source: CHGIS, 2007)

Appendix B: Sample distribution

The sample consists of P2P loan listings from *Renrendai* with non-missing values on borrowers' local Confucian temple density and individual-level and other regional-level characteristics, and loan characteristics between 2011 and 2015. In Panels A and B, the variables are the yearly averages and the provincial averages, respectively. Detailed definitions of the variables are in Appendix A.

Panel A: Sample distribution by year

Year	Number of loan listings (1)	Confucian temple density (2)	Success (3)	Fraction (4)
2011	12,870	9.772	16.364%	19.243%
2012	21,474	9.359	11.879%	11.937%
2013	38,881	9.110	5.473%	5.476%
2014	108,120	8.900	5.867%	5.867%
2015	133,462	8.781	5.356%	5.356%
Total	314,807	8.942	6.441%	6.563%

Panel B: Sample distribution by province and provincial-level municipality

Province	Number of loan listings (1)	Confucian temple density (2)	Success (3)	Fraction (4)
Anhui	10,441	6.738	5.921%	5.986%
Beijing	13,536	5.828	6.952%	7.104%
Chongqing	6,107	3.358	3.930%	4.101%
Fujian	19,764	17.371	5.839%	5.939%
Gansu	3,640	1.193	6.868%	6.976%
Guangdong	51,762	5.192	6.285%	6.421%
Guangxi	9,606	2.276	6.069%	6.183%
Guizhou	5,991	3.880	7.595%	7.657%
Hainan	1,825	2.382	6.685%	6.748%
Hebei	11,494	7.829	5.525%	5.643%
Henan	14,638	10.233	6.592%	6.666%
Hubei	13,069	6.945	5.303%	5.399%
Hunan	13,342	4.641	5.037%	5.128%
Inner Mongolia	980	2.256	3.776%	3.820%
Jiangsu	21,674	16.926	8.190%	8.321%
Jiangxi	8,156	7.873	5.959%	6.100%
Liaoning	450	0.139	7.111%	7.152%
Ningxia	1,924	1.791	5.977%	6.055%
Qinghai	518	0.579	5.405%	5.425%
Shaanxi	7,636	5.336	7.046%	7.176%
Shandong	25,209	11.354	7.029%	7.110%
Shanghai	11,445	22.866	7.156%	7.466%
Shanxi	8,394	6.080	4.932%	5.016%
Sichuan	17,730	8.351	5.059%	5.159%
Tianjin	2,957	6.268	6.053%	6.213%
Yunnan	7,236	3.787	6.523%	6.669%
Zhejiang	25,303	12.503	8.426%	8.580%
Total	314,807	8.942	6.441%	6.563%

Appendix C: Robustness checks

The sample consists of P2P loan listings from *Renrendai* with non-missing values on borrowers' local Confucian temple density and individual-level and other regional-level characteristics, and loan characteristics between 2011 and 2015. Panels A and B report the results using alternative Confucian culture strength measures. Panel C reports the results using alternative model specifications. Panel D reports results using the sample excluding the loan listings with loan amounts greater than RMB 200,000 or the listing interest rates higher than 24% (per annum). Panel E reports the results using the sample excluding central and western provinces. Panel F reports results using the sample excluding the loan listings fully funded within five minutes. For brevity, only the coefficient estimates of key independent variables are tabulated. The control variables are the same as those in Table 2. Definitions of all variables are in Appendix A. Prefecture-level clustered standard errors are reported in parentheses. Superscripts ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Using Jinshi density as an alternative measure of Confucian culture strength		
	Success	*Fraction*
	Logit	OLS
Jinshi density	0.024**	0.178***
	(0.011)	(0.068)
N/(Pseudo) Adj R^2	314,807/0.356	314,807/0.172

Panel B: Using Chaste women density an alternative measure of Confucian culture strength		
	Success	*Fraction*
	Logit	OLS
Chaste women density	0.068***	0.458***
	(0.020)	(0.133)
N/(Pseudo) Adj R^2	314,807/0.356	314,807/0.172

Panel C: Alternative model specifications		
	Success	*Fraction*
	Re-logit	Tobit
Temple density	0.011***	3.425***
	(0.003)	(1.077)
N/Pseudo R^2	314,807/-	314,807/0.264

Panel D: Excluding loan listings with extreme loan size or interest rates		
	Success	*Fraction*
	Logit	OLS
Temple density	0.012***	0.078***
	(0.003)	(0.021)
N/(Pseudo) Adj R^2	299,602/0.363	299,602/0.188

Panel E: Excluding loan listings by borrowers from central or western provinces		
	Success	*Fraction*
	Logit	OLS
Temple density	0.009***	0.063***
	(0.003)	(0.024)
N/(Pseudo) Adj R^2	185,419/0.350	185,419/0.183

Panel F: Excluding loan listings fully funded within five minutes		
	Success	*Fraction*
	Logit	OLS
Temple density	0.009***	0.055***
	(0.003)	(0.017)
N/(Pseudo) Adj R^2	312,640/0.328	312,640/0.146
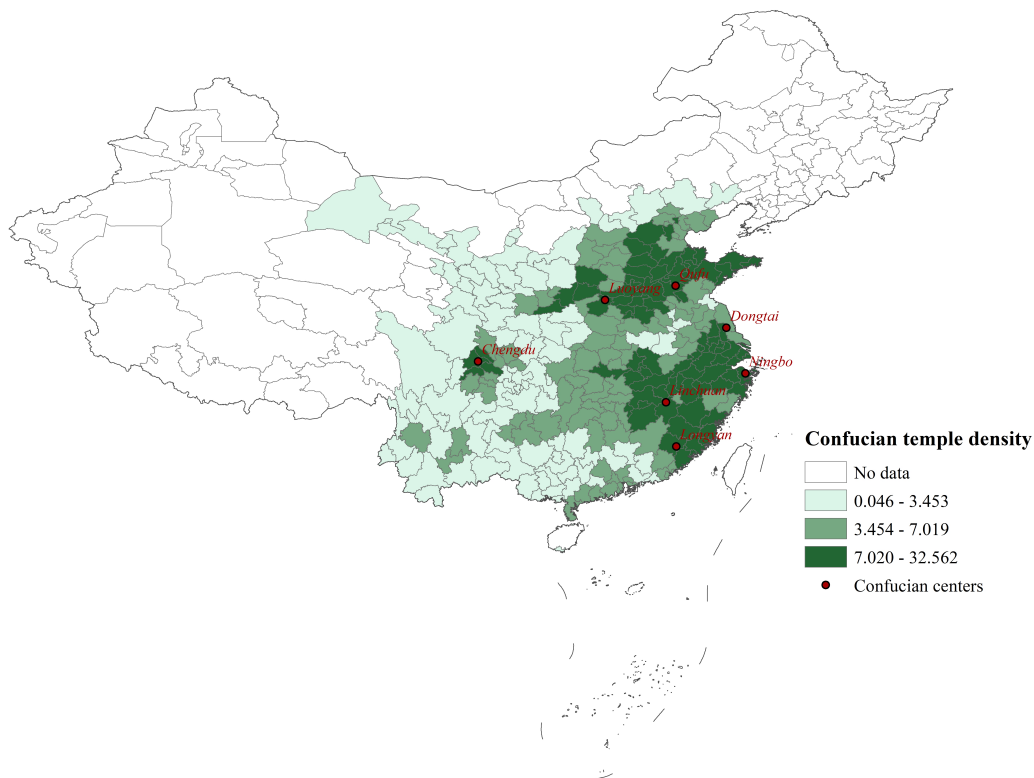
Figure 1: Distribution of prefectural Confucian temple density in the 19th century China. Confucian temples were built to worship Confucian sages and local eminent Confucian exemplars. We calculate the geographical Confucian temple density as the number of temples per 1,000 km^2 and use darker colors to denote higher density. The data are obtained from the provincial gazetteers compiled in the 19th century. The red points denote the locations of seven Confucian centers *Lu*, *Luo*, *Shu*, *Min*, *Taizhou*, *Zhedong*, *Linchuan*, which locate in *Qufu* of *Shandong* province, *Chengdu* of *Sichuan* province, *Luoyang* of *Henan* province, *Longyan* and *Sanming* of *Fujian* province, *Dongtai* of *Jiangsu* province, *Ningbo* and *Shaoxing* in the eastern regions of *Zhejiang* Province and *Linchuan* of *Jiangxi* Province, respectively.
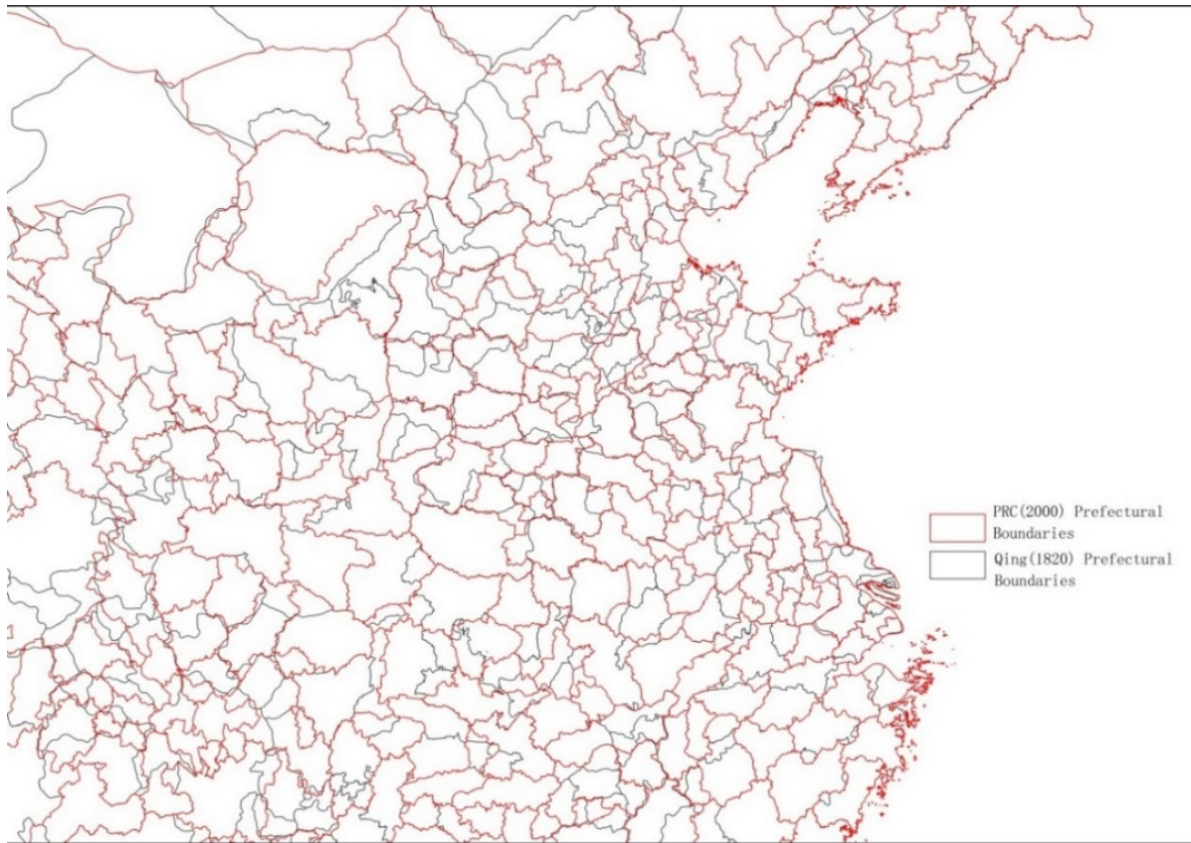
Figure 2: Matching historical information to contemporary prefectures. To retrieve the historical information for borrowers' locations, we follow a three-step procedure. In the first step, we assign historical information to the prefectures in the *Qing* dynasty using the China Historical Geographic Information System (CHGIS). In the second step, we map the historical prefectures to the contemporary prefectures at the 30 arc-second by 30 arc-second (approximately 1km^2) grid cells. In the last step, we construct the geographical variables within contemporary prefectural boundaries by calculating the weighted average historical information based on the grid cells within contemporary boundaries.

Table 1: Descriptive statistics
The sample consists of marketplace lending loan listings from *Renrendai* with non-missing values on borrowers' local Confucian temple density and individual-level and other regional-level characteristics, and loan characteristics between 2011 and 2015. Panel A reports summary statistics of the main variables. Panel B reports the correlation matrix of the key variables. The Spearman correlation coefficients are reported in the highlighted top-right corner and the Pearson correlation coefficients are reported in the bottom-left corner. Figures in bold in Panel B are statistically significant at the 5% level. All variables are defined in Appendix A.

Panel A: Summary statistics

Variables	Mean (1)	Standard deviation (2)	P25 (3)	Median (4)	P75 (5)
Lending outcomes (N = 314,807/20,267)					
Success	0.064	0.245	0.000	0.000	0.000
Fraction	6.563	24.600	0.000	0.000	0.000
Number of bids	25.505	44.433	10.000	15.000	24.000
Bid duration	6.967	3.125	5.237	8.375	9.066
Loan characteristics (N = 314,807)					
Loan spread	7.888	2.871	6.400	7.000	8.850
Loan amount (in ¥thousands)	60.885	95.585	10.000	30.000	55.000
Loan maturity	16.006	9.270	9.000	12.000	24.000
Title length (in hundreds)	0.072	0.037	0.040	0.060	0.100
Listing words count (in hundreds)	0.525	0.440	0.260	0.390	0.620
Performance of funded loans (N = 20,267)					
Default	0.140	0.347	0.000	0.000	0.000
Lenders' total return	-2.181	24.415	2.007	4.205	7.160
Borrower characteristics (N = 314,807)					
Gender	0.872	0.334	1.000	1.000	1.000
Age	29.427	6.365	25.000	28.000	32.000
Borrower check	0.269	0.443	0.000	0.000	1.000
Marriage	0.503	0.500	0.000	1.000	1.000
Income	3.942	1.157	3.000	4.000	4.000
Property ownership	0.430	0.495	0.000	0.000	1.000
Mortgage	0.138	0.345	0.000	0.000	0.000
Firm size	2.419	1.041	2.000	2.000	3.000
Regional characteristics (N = 314,807)					
Temple density	8.942	6.655	4.886	6.235	12.270
Ln(GDP per capita)	10.902	0.573	10.485	10.937	11.396
Bank density	17.292	19.289	4.747	9.926	22.245
Savings per capita	4.550	2.753	2.314	3.972	6.043
Population density	0.096	0.099	0.035	0.062	0.118
Trustworthiness	0.011	0.028	-0.008	0.015	0.032
Historical population density	5.108	0.737	4.735	5.319	5.585
Treaty port	0.448	0.497	0.000	0.000	1.000

Panel B: Correlation matrix

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Success (1)	-	0.928	0.012	-0.094	-0.149	-0.111	0.004	0.100	0.325	0.074	0.072	0.070	0.057	-0.008	-0.000	0.006
Fraction (2)	0.997	-	0.014	-0.062	-0.201	-0.144	0.005	0.072	0.299	0.062	0.046	0.056	0.051	-0.023	0.001	0.010
Temple density (3)	0.015	0.016	-	0.002	0.024	-0.023	0.010	-0.006	-0.002	0.013	0.091	-0.019	0.019	0.370	0.447	0.614
Spread (4)	-0.079	-0.074	0.001	-	0.127	0.266	0.002	-0.039	-0.006	-0.012	0.017	-0.022	-0.012	-0.058	-0.025	0.004
Loan amount (5)	-0.097	-0.100	0.014	0.034	-	0.479	-0.041	0.275	0.052	0.180	0.417	0.157	-0.097	0.019	-0.012	0.003
Loan maturity (6)	-0.109	-0.113	-0.014	0.043	0.205	-	-0.044	0.069	0.025	0.037	0.022	0.022	0.061	0.017	-0.023	-0.024
Gender (7)	0.004	0.004	0.009	0.016	-0.021	-0.044	-	-0.017	-0.002	-0.024	0.035	0.003	0.031	0.004	0.011	0.014
Age (8)	0.089	0.086	-0.016	-0.039	0.243	0.069	-0.032	-	0.116	0.448	0.267	0.315	-0.053	-0.069	-0.083	-0.037
Borrower check (9)	0.325	0.325	-0.001	-0.037	0.021	0.020	-0.002	0.106	-	0.083	0.127	0.118	0.054	0.011	-0.006	-0.003
Marriage (10)	0.074	0.073	0.004	-0.023	0.147	0.037	-0.024	0.397	0.083	-	0.194	0.315	-0.091	-0.120	-0.112	-0.018
Income (11)	0.085	0.083	0.068	0.013	0.415	0.006	0.025	0.270	0.135	0.200	-	0.148	-0.259	0.118	0.117	0.090
Property ownership (12)	0.070	0.069	-0.024	-0.028	0.152	0.024	0.003	0.302	0.118	0.315	0.160	-	-0.021	-0.169	-0.179	-0.061
Firm size (13)	0.055	0.055	0.026	-0.019	-0.091	0.065	0.033	-0.059	0.051	-0.090	-0.254	-0.022	-	0.118	0.118	0.061
Ln(GDP per capita) (14)	-0.008	-0.010	0.361	-0.058	-0.009	0.015	0.005	-0.073	0.011	-0.116	0.094	-0.165	0.114	-	0.795	0.494
Bank density (15)	-0.001	-0.000	0.217	-0.030	-0.024	-0.014	0.017	-0.084	-0.008	-0.107	0.056	-0.178	0.108	0.650	-	0.710
Historical population density (16)	0.003	0.004	0.533	0.007	-0.001	-0.032	0.014	-0.038	-0.007	-0.024	0.082	-0.067	0.058	0.446	0.466	-

Table 2: The effects of Confucian culture strength on loan success and the fraction funded

The sample consists of marketplace lending loan listings from *Renrendai* with non-missing values on borrowers' local Confucian temple density and individual-level and other regional-level characteristics, and loan characteristics between 2011 and 2015. Columns (1) and (2) estimate Logit models, where the dependent variable, *Success*, is a dummy that equals one if a listing is funded and zero otherwise. Columns (3) and (4) estimate OLS models, where the dependent variable, *Fraction*, is the proportion of campaign proceeds out of the total loan amount. Borrower education, working industry and experiences include eight variables: *Education[3-year college]*, *Education[4-year college]*, *Education[postgraduate]*, *Manufacturing sector*, *Service sector*, *Working experience[1-3]*, *Working experience[3-5]*, *Working experience [>5]*, which are defined in Appendix A. All other variables are defined in Appendix A. Prefecture-level clustered standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Success		Fraction	
	(1)	(2)	(3)	(4)
Temple density	0.009***	0.011***	0.059***	0.069***
	(0.003)	(0.003)	(0.022)	(0.019)
Loan spread		-0.139***		-0.763***
		(0.006)		(0.045)
Loan amount		-0.026***		-0.038***
		(0.002)		(0.001)
Loan maturity		-0.007***		-0.167***
		(0.002)		(0.009)
Title length		2.059***		16.818***
		(0.249)		(1.676)
Listing words count		0.286***		1.346***
		(0.024)		(0.163)
Gender		-0.090**		-0.016
		(0.039)		(0.192)
Age		0.041***		0.180***
		(0.002)		(0.012)
Borrower check		2.687***		16.377***
		(0.036)		(0.301)
Marriage		0.199***		1.165***
		(0.027)		(0.147)
Income		0.448***		1.976***
		(0.016)		(0.104)
Property ownership		-0.063*		-0.279
		(0.035)		(0.206)
Mortgage		0.174***		1.305***
		(0.043)		(0.281)
Firm size		0.216***		1.074***
		(0.014)		(0.075)
Ln(GDP per capita)		-0.056		-0.459
		(0.055)		(0.324)
Population density		-1.643		-9.069
		(1.487)		(7.627)
Bank density		0.011		0.059
		(0.009)		(0.045)
Savings per capita		0.005		0.035
		(0.015)		(0.113)
Trustworthiness		0.809		6.953*
		(0.780)		(4.075)
Historical population density		-0.078**		-0.526***
		(0.033)		(0.168)
Treaty port		-0.035		-0.103
		(0.060)		(0.287)
Borrower education, working industry & experiences	N	Y	N	Y
Year FEs	N	Y	N	Y
N/ (Pseudo) Adj R^2	314,807/0.000	314,807/0.356	314,807/0.000	314,807/0.172

Table 3: Tests of endogeneity

The sample consists of marketplace lending loan listings from *Renrendai* with non-missing values on borrowers' local Confucian temple density and individual-level and other regional-level characteristics, and loan characteristics between 2011 and 2015. Panels A, B and C report the results controlling for additional local cultural traits, province-year fixed effects and year-month fixed effects, respectively. Panel D presents the results using the subsample excluding loan listings by borrowers whose domicile region is different from their birth region. Panel E presents the results using the Propensity Score Matching (PSM) method. In the first step, we predict the probability of a loan listed by a borrower from stronger Confucian culture regions using a probit model, where the dependent variable is a dummy variable that equals one if borrowers' prefectural temple density is above or equal to the sample mean and zero otherwise. In the second step, we use the technique of nearest neighbor matching with replacement to find a borrower from a low temple density prefecture for each borrower in a high temple density prefecture. The standard errors reported in parentheses are estimated by bootstrapping with 100 replications. For brevity, only the coefficient estimates of the key independent variable and the newly added variables are tabulated. The control variables are the same as those in Table 2. Definitions of all variables are in Appendix A. Prefecture-level clustered standard errors are reported in parentheses. Superscripts ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Controlling for additional local cultural traits		
	Success	*Fraction*
	Logit	OLS
Temple density	0.012***	0.070***
	(0.003)	(0.023)
Social capital	0.035**	0.125
	(0.017)	(0.100)
Genealogy density	0.006	0.045**
	(0.004)	(0.023)
Buddhism density	0.005	0.014
	(0.022)	(0.110)
Taoism density	-0.009	0.037
	(0.024)	(0.128)
Christianity density	0.081***	0.222
	(0.029)	(0.156)
Catholicism density	-0.320***	-1.327**
	(0.098)	(0.516)
Islamism density	0.008	-0.013
	(0.012)	(0.047)
N/(Pseudo) Adj R^2	312,365/0.358	312,365/0.173

Panel B: Controlling for province-year fixed effects		
	Success	*Fraction*
	Logit	OLS
Temple density	0.006*	0.038*
	(0.003)	(0.023)
N/(Pseudo) Adj R^2	314,699/0.362	314,807/0.176

Panel C: Controlling for year-month fixed effects		
	Success	*Fraction*
	Logit	OLS
Temple density	0.010***	0.066***
	(0.003)	(0.019)
N/(Pseudo) Adj R^2	314,699/0.381	314,807/0.199

Panel D: Excluding the loan listings by borrowers whose domicile region is different from their birth region		
	Success	*Fraction*
	Logit	OLS
Temple density	0.015***	0.071***
	(0.005)	(0.025)
N/(Pseudo) Adj R^2	175,825/0.372	175,825/0.178

Panel E: The propensity score matching method		
	Success	*Fraction*
	One-nearest-neighbor matching	
ATT	0.012***	1.137***
	(0.004)	(0.415)

Table 4: Confucian culture and bidding probability in the potential-dyad analysis

This table shows the effect of Confucian culture on bidding probability. We follow Lin and Viswanathan (2016) and Sorenson and Stuart (2001) to produce the potential-dyad analysis. We obtain the final lender-borrower pairs by matching the bidding record and one nearest investible loan based on borrower-level information (credit rating, interest rate, loan amount, and maturity) in the potential-dyad set. Our final lender-borrower pairs sample runs from January 2011 to December 2015. We employ Logit regression to estimate our specifications. The dependent variable "*Bidding*" is a dummy variable that equals to one if the lender lends money to the specific loan listing and zero otherwise. "*LB_Same prefecture*" is a dummy variable that equals to one if the borrower and lender come from the same city, absorbing the effect of local bias. *L_variables* are the lender-level information, and *B_variables* are the loan-, borrower-, and prefectural level characteristics. The loan-, borrower-, and prefectural level characteristics are the same as Table 2, and the definition of lender characteristics follows the borrower-level characteristics. Robust standard errors clustered at the lender level are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent variable	*Bidding*		
	Logit (1)	Logit (2)	Logit (3)
Temple density	0.009***	0.005**	0.005**
	(0.002)	(0.003)	(0.003)
LB_Same prefecture		0.056	
		(0.067)	
L_Temple density			-0.003
			(0.002)
L_Gender		0.044	0.049
		(0.033)	(0.034)
L_Age		0.005*	0.005*
		(0.003)	(0.003)
L_Marriage		-0.099**	-0.091**
		(0.041)	(0.041)
L_Income		-0.001	-0.001
		(0.012)	(0.012)
L_Property ownership		-0.003	-0.003
		(0.039)	(0.038)
L_Mortgage		0.014	0.019
		(0.034)	(0.034)
B_Loan spread		-0.016	-0.016
		(0.012)	(0.012)
B_Loan amount		-0.001**	-0.001**
		(0.000)	(0.000)
B_Loan maturity		0.004	0.004
		(0.007)	(0.007)
B_Title length		3.908***	3.913***
		(0.287)	(0.288)
B_Listing words count		0.074***	0.075***
		(0.020)	(0.020)
B_Gender		-0.202***	-0.203***
		(0.041)	(0.041)
B_Age		0.014***	0.014***
		(0.003)	(0.003)
B_Borrower check		2.251***	2.254***
		(0.192)	(0.194)
B_Marriage		0.093***	0.093***
		(0.026)	(0.026)
B_Income		0.120***	0.120***
		(0.016)	(0.016)
B_Property ownership		0.077***	0.077***
		(0.029)	(0.029)
B_Mortgage		0.045	0.045
		(0.055)	(0.055)

B_Firm size		0.040**	0.040**
		(0.019)	(0.019)
B_Ln(GDP per capita)		0.025	0.026
		(0.031)	(0.030)
B_Population density		0.048**	0.049**
		(0.023)	(0.022)
B_Bank density		0.188*	0.186*
		(0.107)	(0.106)
B_Savings per capita		-0.000**	-0.000**
		(0.000)	(0.000)
B_Trustworthiness		0.002***	0.002***
		(0.000)	(0.000)
B_Historical population density		-0.246	-0.253
		(0.198)	(0.198)
B_Treaty port		0.035	0.034
		(0.028)	(0.028)
Lender education, working industry & experiences	N	Y	Y
Borrower education, working industry & experiences	N	Y	Y
Year FEs	Y	Y	Y
Observations	85,383	85,383	85,383
Pseudo R^2	0.030	0.249	0.249

Table 5: Instrumental variable approach

The sample consists of marketplace lending loan listings from *Renrendai* with non-missing values on borrowers' local Confucian temple density and individual-level and other regional-level characteristics, and loan characteristics between 2011 and 2015. This table presents the estimation results of the instrumental variable approach with a prefecture's distance to the nearest Confucian center as the instrumental variable. Column (1) and (3) reports the first-stage regressions of a prefecture's Confucian temple density on the instrumental variable and the other control variables. Column (2) and (4) reports the estimates from the second-stage regression, where *Instrumented temple density* is the predicted value of *Temple density* estimated from the 1st stage regression. For brevity, only the coefficient estimates of the key independent variable and the newly added variables are tabulated. The control variables are the same as those in Table 2. Definitions of all variables are in Appendix A. Prefecture-level clustered standard errors are reported in parentheses. Superscripts ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

	Success		*Fraction*	
	1st stage (1)	2nd stage (2)	1st stage (3)	2nd stage (4)
Instrumented temple density		0.001**		0.096**
		(0.000)		(0.044)
Distance to Confucian centers	-1.489***		-1.489***	
	(0.298)		(0.298)	
Control variables in Table 2	Y	Y	Y	Y
Year FEs	Y	Y	Y	Y
Joint test of excluded instruments	$F(1, 258) =$ 24.94		$F(1, 258) =$ 24.94	
	Prob $> F =$ 0.000		Prob $> F =$ 0.000	
N / Adj R^2	314,807/-	314,807/0.169	314,807/-	314,807/0.172

Table 6: Cross-sectional heterogeneity in results

The sample consists of marketplace lending loan listings from *Renrendai* with non-missing values on borrowers' local Confucian temple density and individual-level and other regional-level characteristics, and loan characteristics between 2011 and 2015. For brevity, only the coefficient estimates of *Temple density* are tabulated. The control variables are the same as those in Table 2. Definitions of all variables are in Appendix A. Prefecture-level clustered standard errors are reported in parentheses. Superscripts ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

	Success	*Fraction*	*Success*	*Fraction*
	Logit	OLS	Logit	OLS
	(1)	(2)	(3)	(4)
Panel A: Partitioning the sample by whether the borrower obtain more than one certification and one of them is important certification				
	Borrowers without more than one certification and one of them is important certification		*Borrowers with more than one certification and one of them is important certification*	
Temple density	0.012***	0.070***	0.009	0.151
	(0.003)	(0.021)	(0.006)	(0.098)
N	303,778	303,778	11,029	11,029
(Pseudo) Adj R^2	0.333	0.147	0.325	0.260
Panel B: Partitioning the sample by whether the borrower get a successfully funded listing on the platform				
	Borrower without a successfully funded listing		*Borrower with a successfully funded listing*	
Temple density	0.008***	0.027***	-0.002	-0.073
	(0.003)	(0.010)	(0.008)	(0.097)
N	306,063	306,063	8,744	8,744
(Pseudo) Adj R^2	0.299	0.105	0.241	0.233
Panel C: Partitioning the sample by the trustworthiness in borrower domicile region				
	Regions with lower trustworthiness		*Regions with higher trustworthiness*	
Temple density	0.018***	0.084***	0.001	0.029
	(0.006)	(0.026)	(0.004)	(0.032)
N	139,342	139,342	175,465	175,465
(Pseudo) Adj R^2	0.372	0.176	0.346	0.171
Panel D: Partitioning the sample by the legal environment in borrower domicile region				
	Regions with weak legal environment		*Regions with strong legal environment*	
Temple density	0.007	0.004	0.011***	0.079***
	(0.008)	(0.038)	(0.003)	(0.023)
N	151,838	151,838	162,969	162,969
(Pseudo) Adj R^2	0.377	0.166	0.344	0.179
Panel E: Partitioning the sample by the ratio of victims in rural population in borrower domicile region during the Cultural Revolution				
			Regions with larger Cultural Revolution impact	
	Regions with less Cultural Revolution impact			
Temple density	0.014***	0.083***	0.004	0.027
	(0.004)	(0.022)	(0.006)	(0.032)
N	224,757	224,757	90,050	90,050
(Pseudo) Adj R^2	0.376	0.183	0.315	0.150

Table 7: The effects of Confucian culture strength on other loan outcomes and characteristics

The sample consists of marketplace lending loan listings from *Renrendai* with non-missing values on borrowers' local Confucian temple density and individual-level and other regional-level characteristics, and loan characteristics between 2011 and 2015. The dependent variables in columns (1)-(5) are *Number of bids*, number of bids placed on a listing when the listing is successfully funded, *Bid Duration*, the natural logarithm of time interval between the time the listing is created and the time the listing is fully funded, *Loan amount*, loan amount (in ¥thousands), *Loan spread*, the difference between annualized loan interest rate and the benchmark rate of the People's Bank of China, and *Loan maturity*, the duration of loans (in months), respectively. We use a subsample composed of 171,762 loan listing spanning the period from January 1, 2011 to December 18, 2014 when *Loan spread* is the dependent variable, because interest rates are specified by borrowers until December 18, 2014. All other variables are defined in Appendix A. Prefecture-level clustered standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Number of bids	Bid duration	Loan amount	Loan spread	Loan maturity
	OLS	OLS	OLS	OLS	OLS
	(1)	(2)	(3)	(4)	(5)
Temple density	-0.070**	-0.008**	0.162*	-0.010**	0.013*
	(0.034)	(0.003)	(0.093)	(0.004)	(0.008)
Loan spread	-0.883***	-0.077***	-0.178*		0.453***
	(0.073)	(0.015)	(0.100)		(0.021)
Loan amount	0.836***	0.007***		-0.000	0.022***
	(0.029)	(0.001)		(0.000)	(0.001)
Loan maturity	0.006	0.018***	2.030***	0.014***	
	(0.019)	(0.003)	(0.034)	(0.002)	
Title length	-5.204	-2.190***	-61.309***	7.299***	-9.607***
	(4.990)	(0.593)	(4.720)	(0.380)	(0.756)
Listing words count	3.788***	0.146***	15.356***	0.223***	0.415***
	(0.678)	(0.041)	(0.984)	(0.032)	(0.061)
Gender	1.455**	-0.008	-4.824***	0.282***	-1.058***
	(0.653)	(0.057)	(0.639)	(0.044)	(0.115)
Age	-0.059	-0.005	1.434***	-0.003	0.007
	(0.040)	(0.003)	(0.069)	(0.003)	(0.005)
Borrower check	-1.728***	-0.255***	-12.322***	-0.131***	0.202**
	(0.274)	(0.030)	(0.537)	(0.044)	(0.086)
Marriage	0.495	0.028	0.446	-0.212***	0.364***
	(0.375)	(0.049)	(0.541)	(0.030)	(0.052)
Income	-0.838***	-0.037*	30.309***	0.048***	-0.699***
	(0.248)	(0.022)	(0.590)	(0.015)	(0.045)
Property ownership	-3.048***	-0.103*	5.206***	-0.179***	-0.263***
	(0.540)	(0.059)	(0.601)	(0.032)	(0.064)
Mortgage	0.379	0.221***	8.334***	-0.247***	0.294***
	(0.489)	(0.061)	(1.152)	(0.049)	(0.102)
Firm size	-0.028	-0.010	-1.066**	-0.010	0.599***
	(0.146)	(0.025)	(0.443)	(0.014)	(0.038)
Ln(GDP per capita)	-0.306	0.124*	-5.123***	0.103*	0.237*
	(0.553)	(0.065)	(1.820)	(0.056)	(0.129)
Bank density	2.844	2.451*	5.160	-0.310	-2.259
	(14.307)	(1.399)	(30.054)	(1.163)	(2.260)
Savings per capita	-0.026	-0.013	-0.055	0.001	0.013
	(0.081)	(0.008)	(0.178)	(0.007)	(0.012)
Population density	-0.067	-0.025	0.857	-0.038***	-0.127***
	(0.096)	(0.016)	(0.561)	(0.014)	(0.035)
Trustworthiness	-9.834	1.479*	16.150	-1.012	3.572*
	(7.895)	(0.797)	(27.048)	(0.764)	(1.990)
Historical population density	0.534**	0.031	-1.043	0.040	-0.222***
	(0.257)	(0.037)	(0.995)	(0.034)	(0.066)
Treaty port	0.372	0.007	-4.668***	0.085	0.146
	(0.462)	(0.044)	(1.642)	(0.054)	(0.131)
Borrower education, working industry & experiences	Y	Y	Y	Y	Y
Year FEs	Y	Y	Y	Y	Y
N/(Pseudo) Adj R^2	20,276/0.689	20,276/0.419	314,807/0.254	171,762/0.122	314,807/0.142

Table 8: The effects of Confucian culture strength on the performance of funded loans

The sample consists of marketplace lending loan listings from *Renrendai* with non-missing values on borrowers' local Confucian temple density and individual-level and other regional-level characteristics, and loan characteristics between 2011 and 2015. The dependent variables are *Default*, a dummy that equals one if the funded loan is default and zero otherwise, and *Lender' total return*, calculated as the difference between total payment and principal divided by the principal. Definitions of other variables are in Appendix A. Definitions of other variables are in Appendix A. Prefecture-level clustered standard errors are reported in parentheses. Superscripts ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

	Default	*Lenders' total return*
	Logit	OLS
	(1)	(2)
Temple density	-0.009*	0.069*
	(0.006)	(0.040)
Loan spread	0.187***	-0.331***
	(0.013)	(0.123)
Loan amount	-0.000	0.017***
	(0.001)	(0.005)
Loan maturity	0.053***	-0.018
	(0.003)	(0.044)
Title length	-0.179	-2.003
	(0.747)	(5.421)
Listing words count	0.080*	-0.107
	(0.048)	(0.331)
Gender	0.057	-0.454
	(0.086)	(0.660)
Age	0.025***	-0.212***
	(0.004)	(0.043)
Borrower check	-0.586***	5.037***
	(0.061)	(0.721)
Marriage	-0.132**	0.318
	(0.057)	(0.452)
Income	0.169***	-0.959***
	(0.025)	(0.186)
Property ownership	0.048	-1.811***
	(0.070)	(0.690)
Mortgage	-0.460***	3.615***
	(0.082)	(0.648)
Firm size	-0.124***	0.640**
	(0.030)	(0.250)
Ln(GDP per capita)	0.206**	-1.744**
	(0.097)	(0.734)
Population density	-0.059	-23.288
	(2.159)	(16.161)
Bank density	0.004	0.124
	(0.012)	(0.093)
Savings per capita	-0.098***	0.372*
	(0.036)	(0.192)
Trustworthiness	-1.124	9.176
	(1.252)	(9.815)
Historical population density	0.117**	-0.894**
	(0.052)	(0.391)
Treaty port	-0.269***	1.662**
	(0.077)	(0.691)
Borrower education, working industry & experiences	Y	Y
Year FEs	Y	Y
N/(Pseudo) Adj R^2	20,267/0.151	20,267/0.056

Table 9: Horserace test

The sample consists of marketplace lending loan listings from *Renrendai* with non-missing values on borrowers' local Confucian temple density and individual-level and other regional-level characteristics, and loan characteristics between 2011 and 2015. Panel A reports the estimation results of Confucian temple density in borrowers' workplace and birthplace on *Success* and *Fraction*, while Panel B reports the results on *Default* and *Lenders' total return*. Definitions of all variables are in Appendix A. Prefecture-level clustered standard errors are reported in parentheses. Superscripts ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: The effects of Confucian culture strength on loan success and the fraction funded

Dependent variable	*Success*	*Fraction*
	Logit	OLS
	(1)	(2)
Temple density	0.011***	0.075***
	(0.003)	(0.025)
Temple density of birthplace	0.0004	-0.005
	(0.003)	(0.021)
Control variables in Table 2	Y	Y
Year FEs	Y	Y
N/ (Pseudo) Adj R^2	306,159/0.357	306,159/0.173

Panel B: The effects of Confucian culture strength on loan default and lenders' total return

Dependent variable	*Default*	*Lenders' total return*
	Logit	OLS
	(1)	(2)
Temple density	-0.003	0.009
	(0.007)	(0.045)
Temple density of birthplace	-0.012**	0.135***
	(0.005)	(0.042)
Control variables in Table 2	Y	Y
Year FEs	Y	Y
N/(Pseudo) Adj R^2	19,749/0.150	19,749/0.057