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The Role of Religion in Online Prosocial Lending

Completed Research Paper

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Abstract

The Internet has long been argued to have “flattened” the world. A variety of work, however, has shown that cross-border frictions continue to manifest through various individual level differences, e.g., cultural, demographic, and geographic. We extend this literature here, offering a novel consideration of religious differences as a significant barrier to online peer-to-peer transactions in the context of prosocial lending. Specifically, we propose a measure of religious distance between any given pair of countries. We then incorporate this measure into a standard gravity model of trade, which we use to explain country-to-country lending volumes between 2006 and 2017 at kiva.org. We demonstrate the negative and significant effects of religious differences on lending activity over and above other established factors. Moreover, we demonstrate that the effects of religious differences vary a great deal, being moderated by the social environment characterizing both a lender country and borrower country in a given time period. That is, we show that increases in the degree of social hostilities within a lender country amplifies the baseline (negative) effects of religious differences on lending activity. At the same time, we demonstrate that diversity of religion and greater physical distances attenuate the role of religious differences.

Keywords: Religion, Religious Differences, Crowdfunding, Prosocial Lending, Peer-to-Peer Lending

Introduction

Microfinance institutions have demonstrated the potential to lift billions of people from poverty in recent years (World Bank Report 2013). Microfinance crowdfunding platforms, in particular, have facilitated billions of dollars in loans over the past two decades through online prosocial lending. Online prosocial lending is a form of crowdfunding, wherein borrowers seek funding from members of the crowd (individual lenders), who collectively supply small increments of funding that can meet borrower needs when taken in aggregate. Kiva.org – an international crowdfunding platform with the mission to alleviate poverty – is perhaps the best example, having raised \$1.1B since 2005 (<https://www.kiva.org/>), helping borrowers to grow their small businesses.

On prosocial lending platforms, the crowd collectively selects which borrowers receive funding, and which do not. Accordingly, it is important for entrepreneurs and platform operators to understand lender motivations to participate in prosocial lending. Considering lenders self-reported reasons for participation on kiva.org, Liu et al. (2010) identified ten categories of lender motivations, including altruism, reciprocity,

and religious duty, among others. These authors noted that religious duties appeared to be a particularly strong motivator of lending activity; religiously motivated lenders made 0.25 more loans per month than lenders claiming other primary motivations. Notably, Liu et al. (2010)'s observation is aligned with those from a lengthy stream of literature that has documented the role of religion as a motivator of prosocial behaviors (e.g., Batson 1976; and Saroglou et al. 2005). To our knowledge, however, no prior work has rigorously examined the role of individual religion in online peer-to-peer transactions and the mechanisms through which it manifests.

A variety of mechanisms have been discussed in the prior literature characterizing the relationship between religion and prosocial behavior. While some studies (e.g., Ozorak 2003) conclude that participation in religion generally increases individuals' prosociality, other studies suggest that religion induces prosocial behavior primarily toward other members of the same religion (e.g. Saroglou et al. 2005). Thus religion-based prosociality is not purely altruistic, but in fact is a form of in-group support. Harrell (2012) elaborates on this idea, suggesting that there exists a religion-prosociality link, in which individuals empower and promote their religion and religious community via prosociality. In this regard, religion may, in fact, be an impediment to prosocial behavior in globalized contexts.

Understanding the role that religion plays in peer-to-peer transactions, and prosocial lending specifically, is important for a variety of reasons, many of which parallel those presented in the home bias literature. Home bias refers to the negative influence of geographic distance on trade. Examples of work documenting evidence of home bias in online peer-to-peer transactions include that by Hortacsu et al. (2009), using data from eBay and Mercado Libre, that by Lin and Viswanathan (2015), using data from Prosper, and that by Burtch et al. (2013), using data from Kiva. Analogous to home bias, understanding frictions attributable to religious differences is crucial to the informed design and management of global online peer-to-peer platforms. For example, these platforms play a central role in matching supply and demand (Wei and Lin 2016). As such, understanding the religiously motivated behavior of lenders, platforms can tailor matching algorithms, perhaps opting to make religiously distant borrower options more conspicuous as a way of combatting the tendency. Relatedly, a natural question arises as to whether borrowers are better served by explicitly revealing (or withholding) religious affiliations in borrowing requests.

Beyond frictions attributable to persistent religious differences, prior literature also suggests that these frictions may amplify or attenuate depending on the socio-political environment, which can shift individuals' behavior toward specific religions. As an example, Murphy (1957) explored the re-enforcing impact of war and conflict on social solidarity exhibited by groups holding shared interests. This study, along with a number of others (e.g., Finke 2013), suggests that religiously motivated conflicts may lead to restrictions on religious freedoms and, as a consequence, may reduce inter-group prosocial behavior, in favor of increased within-group (religion) prosocial behavior, i.e., in-group favoritism. To date, however, the impact of local conflict on global peer-to-peer platforms has not previously been examined, nor has its specific effect on prosocial lending. In light of ongoing increases in the prevalence of religious social hostilities in many countries (Pew research center 2011), the influence of these environmental factors on online commerce and philanthropy is critical in understanding the role of religion in online prosocial platforms.

In this work, we seek to bridge the gaps described above, developing an understanding of the impact of religious differences and religious social hostilities on peer-to-peer transactions and philanthropic lending in particular. Formally, we seek to answer the following two research questions:

RQ1: What effect do religious differences have on volumes of peer-to-peer prosocial lending?

RQ2: How and to what degree is the effect of religious differences moderated by the rise of religious social hostilities in participants' countries?

We address these questions drawing on data from Kiva.org, retrieved via Kiva's public Application Programming Interface (API). Kiva is one of the most popular international crowdfunding platforms. Founded in 2005, Kiva is a nonprofit, prosocial crowdfunding platform that enables entrepreneurs to obtain loans from individual lenders the world over. All loans are philanthropic in nature, in that they provide zero interest to lenders. Given the absence of monetary returns, it is perhaps unsurprising that many lenders' primary motivations are prosocial. Indeed, as noted earlier, Liu et al. (2010) have previously documented that religion is one of the most commonly expressed motivations for lender participation on Kiva.

To measure religious differences, we introduce a measure reflecting the probability that a random pair of individuals drawn from two countries shares a common religion, based on public data on country religious compositions provided by the United Nations (<http://data.un.org>). Our measure of religious freedom is based on a recently constructed survey dataset provided by Pew Research Center (www.pewresearch.org), which includes yearly measures of governmental restriction and religiously motivated hostilities on a per-country basis between 2009 and 2016. Our estimation sample is constructed by combining Kiva lending transaction data, aggregated to the triples of country-country-year. In addition, we use measures of religious differences and religious freedom from Pew, and several other publicly available datasets that measure cultural differences, geographic distance, and purchase-power adjusted GDP differentials. To evaluate our hypotheses, we derive and estimate a gravity model, analogous to those presented by Hortaçsu et al. (2009) and Burtch et al. (2013). Following the economic literature on trade, this gravity model accounts not only for religious differences, but also a variety of other bilateral differences between countries, including geographic distance, GDP differentials and cultural differences (Guiso et al. 2006, Burtch et al. 2013).

Our findings provide evidence that religious differences have a distinct and significant effect on lending activity, over and above those of previously established factors. Greater religious differences between a lender and a borrower country are associated with fewer lending actions. A one standard deviation increase in religious distance between lender and borrower countries, over the average, is associated with 15 fewer lending actions. We further find evidence that the effect of religious differences is amplified in the presence of religiously motivated social hostilities in a lender or borrower country. The greater the degree of religiously motivated social hostilities, the greater the (negative) effect of religious differences on lending activity. A one standard deviation increase in religiously motivated social hostilities in a lender country is associated with 0.14 fewer lending actions, conditional on average religious differences. Additionally, a one standard deviation increase in religiously motivated social hostilities in a borrower country is associated with 0.17 fewer lending actions, conditional on the average religious difference between countries.

This research contributes to the literature in a number of ways. First, our work is the first to empirically examine the influence of religion and religious differences on online, peer-to-peer economic exchanges. Notably, many fields of study suffer from a dearth of work on the effects and role of religion (Grim and Finke 2006). Here, we benefit from large-scale international lending data from Kiva, in addition to unique religion and hostilities datasets provided in recent years by both Pew and the UN Statistics Division. Despite a relative lack of prior empirical research on religion, theoretical work has spoken to the continuing and increasing importance of religion in economic development (McCleary and Barro 2003; Barro and McCleary 2003; North and Gwin 2004; Grim and Finke 2006). Our work complements those ideas, bringing focus to the role of religion in global online platforms for economic exchange. Second, this research contributes to the literature on distance related barriers in online markets. As noted by a number of scholars previously in the IS field (e.g., Burtch et al. 2013; Liang et al. 2017), Internet-enabled platforms can reduce a variety of transaction costs (e.g., those related to search). However, a number of behavioral frictions will persist, some of which may even be amplified, when individuals are presented with a wider array of possible transaction partners. With the presentation of more options, individuals may i) be more selective about whom they transact with, and / or ii) be more likely to fall back on heuristics and biases to reduce their choice set. Finally, this research shed light on religious discrimination in online markets and recommend different mechanisms that mitigate it. In line with the recent stream of research (Ge et al. 2016; Younkin and Kuppuswamy 2017; Edelman 2017), we find that the Internet cannot automatically guarantee more equal outcomes.

Literature Review and Hypothesis Development

Online crowdfunding platforms such as Kiva allow individuals to contribute funds to peers the world over. In Kiva's case, these peers predominantly reside in developing nations, though Kiva has also recently begun to grow its borrower base in wealthier countries as well, with initiatives like Kiva Zip. At any given time, hundreds of borrower postings are typically present on Kiva, seeking funds from thousands of possible lenders. As such, the central role that Kiva plays pertains not only to the logistics of loan handling, but also the facilitation of match-making.

Social distance has been discussed to decrease generosity (Chen and Li 2009). In an attempt to reduce the negative impact of social distance on prosociality, literate finds some evidence that showing photographs

of other participants (Andreoni and Petrie 2004) or their name (Charness and Gneezy 2008) may reduce social distance. However, such strategies may also crowd out generosity and charity (Charness and Gneezy 2008). Results from earlier studies on Kiva, both theoretically and empirically, reveal that lenders empower similar others through lending actions. In particular, lenders prefer borrowers who are culturally and physically close to them (Burtch et al., 2013), and also borrowers with the same gender and occupation (Galak et al., 2011). These studies, however, have not dealt with lenders preferences as to which loan get funded based on religion similarities between a lender and a borrower. In other words, it is not yet clear if a preference over a borrower with the same religion –i.e., in-group favoritism– or discrimination toward a borrower with different religion –i.e., out-group discrimination– play a role in crowdfunding platforms (known as religion-prosociality links, (Harrell 2012)). Also, nor have there been any studies examining the mechanisms that moderate such in-group favoritism or out-group discrimination. In the following subsections, we focus on literature to develop our hypotheses with regards to religious distance, religion and prosociality, and finally different factors that supplement or complement religion-prosociality.

Emerging Literature on Distance-related Barriers in Crowdfunding Platforms

The extant literature has provided evidence that although the Internet overcomes the distance-related barriers by allowing distant individuals to connect, users in online platforms, including crowd-based platforms, exhibit different behaviors based on proximate identities. In the context of crowdfunding platforms, Burtch et al. (2013) examined the impact of proximities between lenders and borrowers on lending behavior in the Kiva crowdfunding platform. The results of their study indicate that lenders do prefer culturally similar and geographically proximate borrowers. This study along with other research (as an example Lin and Viswanathan 2013) suggest that lenders in crowdfunding platforms are empowering groups that are similar to them (e.g., in-group favoritism over similar culture). It is unclear, however, if and how religious similarities drive lenders preferences in prosocial crowdfunding platforms.

Religious Differences and Prosociality

Various studies on religion predict that religious beliefs and behaviors facilitate humans' tendency to participate in prosocial activities (e.g., Batson et al. 1993; Monsma 2007). Faith in God or gods increases prosociality most likely because major religions tend to incorporate some form of the “golden rule” – to treat others as you would have them treat you (Preston et al. 2010) – as well as notions of paying penance for sins (Roes and Raymond 2003). The religious notion of unconditional love for one's fellow human beings (Coward 1986) is in line with Liu et al. (2010)'s finding that religiously motivated lenders on Kiva exhibit larger volumes of pro-social lending, on average. Recent literature, however, suggests that the relationship between religiosity and prosocial behavior is not necessarily indicative of altruism (Galen 2012; Saroglou 2012). To the contrary, religiosity has also been linked to prejudice (Batson et al. 1993), such that religiously motivated 'prosocial' actions are undertaken as a means of supporting one's own religious in-group, at the expense of the out-group, e.g., non-believers (Hunsberger and Jackson 2005; Preston et al. 2010).

Religiously motivated prosociality cannot be unconditionally altruistic (Norenzayan and Shariff 2008; Galen 2012). Considering religion as a social in-group, we predict that there exists a religion–prosociality link (Harrell 2012) on Kiva. That is, we predict that religion will serve as a source of in-group preference in lending activity on Kiva (Verkuyten 2007), yielding the following formal hypothesis:

H1 (Religion Effect): Greater religious distance between a lender and borrower country will result in fewer lending transactions.

Religious Differences and Social Hostilities

“Conflict and social solidarity are mutually re-enforcing” (Murphy 1957, p. 1018). On one hand, conflict enhances the social integration of an in-group and, on the other hand, the solidarity of the group requires collective action in favor of the in-group members and against an out-group. As a result, conflict with an out-group leads to an increased cohesion between the members of the in-group (Cosser 1998). As an example, the violent conflicts of the nineteenth century in Lebanon led to a noticeable increase in sectarianism (higher in-group favoritism) at the time (Frayha 2003).

Social hostilities involving religion have increased over the past decade (Grim 2012). As recent as mid-2009, terrorist groups were active in 74 countries around the world (Grim 2012). Conflict theory (Bobo 1988;

Sherif 1966) suggests that social hostilities raise individuals' concerns about the welfare and shared interests of in-group members (Ben-Nun et al. 2014). In turn, group boundaries become more salient. As an example, a great deal of literature dealing with religion began to focus on the boundaries between Christianity and Islam following 9/11 (Cimino 2005). As a result, lenders who have encountered a religiously motivated conflict in their home country may be expected to increase their focus on support for their in-group (same religion). Thus, we anticipate that religiously motivated hostilities in a country will promote higher cohesion among members of the same religious group. This yields our next hypothesis:

H2-a (Moderating Effect of Social Hostilities in a Lender Country): Greater social hostilities in a lender country will amplify the effects of religious differences.

When social hostilities involving religion increase in a borrower country, we anticipate a similar result. Again, following the conflict theory (Bobo 1988; Sherif 1966), social hostilities raise individuals' concerns about the welfare and shared interests of in-group members (Ben-Nun et al. 2014). As a result, when religiously motivated hostilities occur in a borrower's country, lenders from out-group religions may sympathize with the opposing group, drawing their help away from the country, whereas lenders from in-group religions may shift their help toward that location, in support. Given this expectation, we propose our next hypothesis:

H2-b (Moderating Effect of Social Hostilities in a Borrower Country): Greater social hostilities in a borrower country will amplify the effects of religious differences.

Unity in Diversity

Unity, successful integration between individuals with different or opposite values, can be achieved by emphasizing a common identity in a diverse society (Huo and Molina 2006). Diversity facilitates attitudes that value subgroup identities (or even minorities) and is consistent with the goal of a unified society (Huo and Molina 2006). In this sense, intergroup interactions in a diverse society erode the importance of in-group identities and, consequently, in-group favoritism (Brewer 1995). As examples, intercultural group climates have been found to hinder cultural identification in an organization and a work team (Luijters et al. 2008) and cultural diversity within a country has been shown to reduce employer home bias in online labor markets (Liang et al. 2017).

Religious diversity, the interconnection of people from one religion with other religions, leads to broader social membership (unity) that suppresses religious identity (Ben-Ner et al. 2009). Notably, a deep level of diversity will be achieved when subgroups are equal partners (Huo and Molina 2006); that is, when there is a higher interaction with religious out-groups (Ben-Ner et al. 2009). In line with prior observations, we thus argue here that religious diversity in a lender country should similarly alleviate in-group favoritism and opposition toward out-groups (out-group avoidance). That is, we predict that higher religious diversity within a lender country will attenuate the effects of inter-country religious differences. More formally:

H3 (Moderating Effect of Religious Diversity in a Lender Country): Greater religious diversity in a lender country will attenuate the effects of religious differences.

Religious Differences and Physical Distance

Finally, we consider the interaction between religious differences and geographic distance. As the physical distance increases between a lender and a borrower, lenders' awareness of the borrower country's religious make-up is likely to reduce. As a result of ethnocentrism (Watson 1993; Adler 2003), individuals are more likely to assume their own religion is the norm among other parties in the absence of information. Moreover, at extreme, physical distance can draw lenders attention away from religious differences. Consistent with this idea, Burtch et al. (2013) observed this form of the substitution effect between physical distance and cultural distance. Expecting a similar result with religion, we present our next formal hypothesis as follows:

H4 (Moderating Effect of Physical Distance): Greater physical distance between a lender and borrower country will attenuate the effects of religious differences.

Figure 1 summarizes our theoretically driven hypotheses and the predicted direction in parentheses.

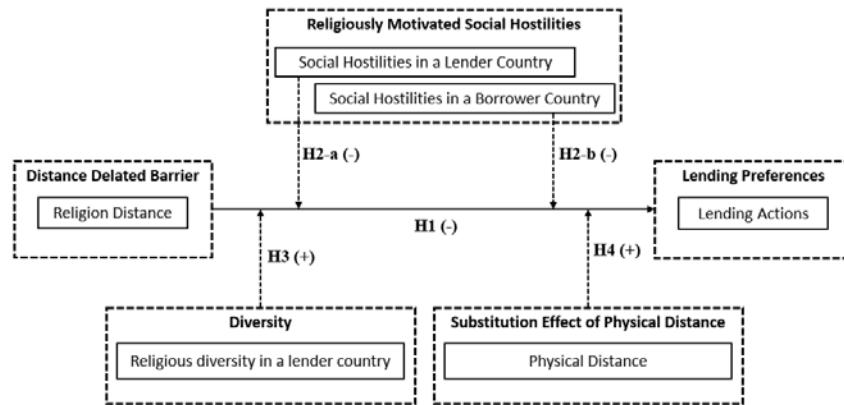


Figure 1. Hypotheses (Predicted Direction in Parentheses)

Study Context

Kiva was founded in 2005 with headquarter located in San Francisco. Kiva is a cross-country philanthropic crowdfunding platform. Individual lenders from all around the world get connected to an individual borrower, supplying funds in increments of \$25. Lenders on Kiva earn zero interest; however, most borrowers *do* pay interest to the MFIs, to cover expenses related to loan transactions (usually %2 of the loan amount). The Kiva platform subsists off philanthropic grants and donations, and it does not earn revenue from either lenders or borrowers. Borrower requests on Kiva are filled only if the entire loan is covered by the crowd; that is, Kiva is an all-or-nothing platform, in which funds are distributed only if the total raised within 30 days of posting exceeds the borrower request amount. As noted earlier, Micro-Finance Institutions (MFIs) operate as Kiva's partners in borrower countries to facilitate transactions. MFIs serve as mediators between borrowers and the Kiva platform. Individual borrowers request a loan through an MFI in their home country. MFIs handle the required correspondence to post the loan on Kiva platform, distribute funded money to borrowers and then collect money from borrowers to repay loans. Local MFIs usually charge borrowers to cover their expenses.

There are several noteworthy points related to MFIs. First, in practice, most MFIs use their available funds to distribute money to borrowers *before* posting their loan request on Kiva. However, from a lender's perspective, they are funding the individual borrower request, thus this sequence by which loans are implemented should have little bearing on our analysis. Second, some of MFIs in Islamic regions do not charge Muslim borrowers any interest rate because of Islamic laws against usury. Such a restriction on usury may motivate Muslim lenders to finance activities that comply with Sharia law and, consequently, intensify in-group favoritism. Again, we do not believe this poses any issue in our analysis because lenders do not earn interest in any case. Third, some borrowers located in the United States are able to request loans directly from the platform, without operating through an MFI. Although this may influence lenders preference for borrowers from the US, our estimations will eventually incorporate borrower country dummies, which will subsume country-level static features such as this. As a final point, it is perhaps worth noting that not all borrowers speak English. Although loans with less proficient written English can be judged as less credible (Lev-Ari and Keysar 2010), it is notable that Kiva operates solely in English and employs expert volunteers to translate all loans into English that are initially crafted in other languages. As such, language differences can be expected to play little role in this setting. That said, to rule out the possible confounding impact of language on the association between religious differences and lenders' lending preferences, we conduct a robustness check in our empirical analysis, which controls for 'common native language' between lender and borrower countries.

Data

To study the impact of religion on prosocial lending, we constructed a panel capturing the number of lending actions between pairs of countries in each year. We retrieved this data from Kiva.org's public API. Each observation in the initial dataset represents a lending action between a lender and a borrower. In total, our initial sample includes more than 26 million observations, representing lending actions between 1.7

million lenders and 2.7 million borrowers. These lending actions amount to total loans in excess of \$1.1B over the 11 years between April 2006 and May 2017. Figure 2 depicts the geographic distribution of lenders; here, we see that 59.6% of lending actions are attributable to US lenders, followed by Canadian (8.5%) and Australian (5.6%) lenders. Figure 3 depicts the geographic distribution of borrowers. The largest proportion of lending actions are made to Philippian borrowers (%8.1), followed by Kenyans (%6.29) and Peruvians (%6.27). The numbers are depicted visually in Figures 2 and 3, rounded to the nearest 0.01%. Some values are omitted for the sake of clarity. The initial dataset includes detailed information about loans (e.g., loan ID, loan amount, funding status, sector, posted date, language, partner ID, etc.) and the borrower(s) (borrower name(s), location, gender, occupation, etc.); however, information about lenders is limited to a lender ID, name, image, and location.



Figure 2. Kiva Lender Distribution (values are rounded to nearest 0.01)



Figure 3. Kiva Borrower Distribution (values are rounded to nearest 0.01)

We chose to aggregate our data to the level of country-country pairs for two reasons. First, our explanatory variables of interest are at the country level (that is, they do not vary at the individual level). Second, any simplifications for users' religion would be difficult to justify and interpret. Blum and Goldfarb (2006) and Burtch et al. (2013) speak to a similar issue of measurement, as a rationale for similarly aggregating their individual discrete choice data to bilateral country-to-country counts. In our final dataset, our outcome of interest is the count of lending actions between directed (asymmetric) pairs of countries in each year. As an example, one observation in our sample captures the total number of lending actions from American lenders to borrowers from Philippines, in the year of 2010. For pairs of countries where no lending actions were observed in a given year, we construct an observation that we populate with a value of zero. Ultimately, this procedure yields a sample of 74,272 observations.

We combined the aggregated Kiva dataset with our constructed measures of religious differences between countries, as well as other country-to-country measures obtained from external sources. In the final dataset, our variables of interest are religious differences, Social Hostilities indices in lender and borrower countries, well as Religious diversity in lender countries. Notable control variables include measures of cultural differences, physical distance, and GDP differentials.

Independent variables

Religious Differences and Religious Diversity

In our initial analyses, the independent variable of interest is religious differences. Religious differences refer to religion dissimilarities between undirected pairs of countries. This measure is calculated as the probability (ranging from 0-1) that a pair of people drawn at random from the two countries share different religious group. Following Pew Research Center, we chose to focus on the most populous religious groups, namely Christians, Muslims, Unaffiliated, Hindus, Buddhists, Folk religions, and Jews. Considering minor religions is not appropriate for several reasons. First, because of the sheer number of minority religions in the world, we run the risk of overstating religious differences by exploring the set of nominal alternatives. For example, two countries populated with two different subdivisions of Christianity might be treated as equally dissimilar to two countries populated with two entirely different major religions (e.g., Islam and Buddhism). Second, lenders on the Kiva platform are unlikely to be aware of most religious minorities. As such, we argue that lenders are unlikely to be concerned with minor religions when making their lending choices. Hence, our main analysis is conducted at the level of major religions. We also run a robustness

check using the measure of religious differences based on 29 minor religion groups (e.g. Roman Catholics, Eastern Orthodox, Shi'a, and Sunni, to name a few). Equation 1 shows the formula we used to calculate religious distance between lender-borrower country pairs. Note that our measure is inspired by that proposed by Melitz and Toubal (2012) to operationalize linguistic differences between pairs of countries (see Kanat et al. 2018).

$$Religious_Distance_{kj} = 1 - \sum_{i=1}^7 Pr_{ik} * Pr_{ij} \quad \text{Equation 1}$$

Here, $Religious_Distance_{kj}$ is the probability that two random people from country k and j have a different religion, i indicates each of seven religious groups, and Pr_{ik} (Pr_{ij}) is the probability that a random person in the country k (j) has the religion i . We draw on the RCS-Dem dataset¹ from the Association of Religion Data Archives (ARDA) for the estimate of religious probabilities (i.e. Pr_{ik} and Pr_{ij}) (Brown and James 2018). This dataset includes yearly religious group demographics at the country level from 1900 through 2015. In the present research, we only used yearly data from 2005 (Kiva's founding year) to 2015. We also used 2015 demographic data to proxy countries' religious demographics in 2016².

We use the same approach to measure religious diversity within a country (Equation 2). We define religious diversity of a country as a probability that two random persons from a country hold different religions. This definition is preferable to simply counting the number of distinct religious groups within a country, which would fail to consider the proportional representation of each group. Notably, a deep level of diversity will be achieved when there is a higher level of interactions with religious out-groups (Ben-Ner et al. 2009).

$$Religious_Diversity_k = 1 - \sum_{i=1}^7 (Pr_{ik})^2 \quad \text{Equation 2}$$

In Equation 2, i again indexes each of seven religious groups and Pr_{ik} is the probability that a random person in the country k has religion i .

Social Hostilities and Governmental Restriction on Religion

We draw on data from the Pew Research Center to construct our measures of religious persecution and hostilities. We collected nine years' worth of data from the Governmental Restriction on religion Index (GRI) and Social Hostilities Index (SHI), both of which were obtained from the Global Restrictions on Religion 2007-2016 dataset³. These two indices measure levels of government restrictions on religion and social hostilities involving religion, respectively, for nearly 200 countries and self-governing territories around the world each year. The GRI is based on 20 survey questions capturing various ways that national and local governments restrict religion. The SHI is based on 13 survey questions capturing various ways individuals and social groups invade upon religious beliefs and practices (for more information on data coding and data-verification see the Pew Research Center codebook for Global restriction on religion data)⁴. Figure 4 depicts the relationship between GRI and SHI indices for the 25 most populated countries in the world in 2015. Countries on the upper right have the least religious freedom, whereas countries on the lower left have the most religious freedom.

Governmental regulation of religion is defined as "the restrictions placed on the practice, profession, or selection of religion by the official laws, policies, or administrative actions of the state." (Grim and Finke 2006). Notably, this restriction is neither limited to autocratic regimes nor to formal law. Most of the time, governmental restrictions take the form of support or allowance for hostilities toward some religious groups, rather than any formal, codified policy (Grim and Finke 2006).

There are several points worth highlighting regarding this dataset. First, Pew Research Studies have found that a higher score on GRI is associated with a higher score on SHI and vice versa (Grim 2014). This suggests that most of the countries are either high or low on both indices. This association is even stronger when countries' actions clearly favor one religion (Grim 2014). Second, it is important to note that these measures

¹ Retrieved on 2/27/2019 from http://thearda.com/Archive/Files/Downloads/RCSDEM2_DL.asp

² We had a choice to use several other data sources to predict the demographic of country religious groups. We chose to use ARDA dataset since it is checked for reliability on random 5 percent sample from other religious datasets (e.g. CIA World Factbooks). Also, some other religious datasets like a survey published by the Pew Forum are neither systematized nor historical (c.f. Brown and James 2018).

³ Retrieved on 9/2/2018 from <http://www.pewforum.org/dataset/global-restrictions-on-religion-2007-2016/>

⁴ <http://www.thearda.com/archive/files/codebooks/origCB/Global%20Restrictions%20on%20Religion.pdf>

are neither entirely stable over time nor monotonic; that is, they do vary within a country, as a result of regime change, etc. (Grim 2014).

Control variables

Following the literature on online gravity models of trade (e.g., Burtch et al. 2013; Hortaçsu et al. 2009; Blum and Goldfarb 2006), we control for variables that have the potential to impact supply and demand forces between countries. In particular, we focus on cultural difference, Gross Domestic Product (GDP) differential, and physical (geographic) distance between lender and borrower countries. For the measure of cultural distance, we drew on data from the World Value Survey (WVS) wave 6. The WVS explores country level values and beliefs through two major indices, Survival versus self-expression values (Surv-Self Dist) and Traditional versus Secular-rational values (Trad-Sec Dist) (See figure 5). Surv-Self Dist links the transition from industrial societies to post-industrial societies. Trad-Sec Dist reflects a different level of religious orientation in societies with a focus on parent-child ties, deference to authority, and traditional family values.

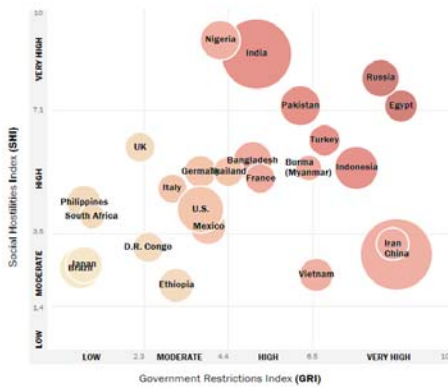


Figure 4. Restrictions on religion among the 25 most populous countries, 2015.
(Adopted from Pew Research Center⁵)

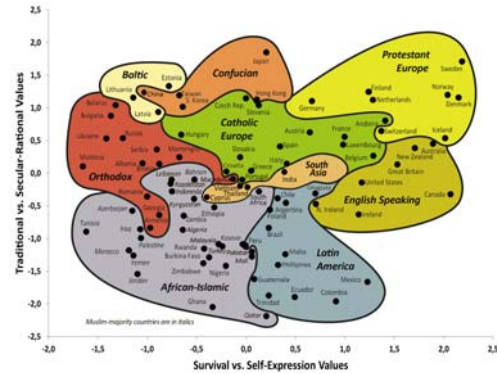


Figure 5. Inglehart–Welzel Cultural Map
(Adopted from WVS⁶)

To measure the Physical distance between pairs of countries, we followed previous research (Burtch et al. 2013) and drew on a dataset⁷ constructed by Mayer and Zignago (2011) for their study of international trade. This dataset includes measures of bilateral country distances that are calculated using latitudes and longitudes of the most populated cities. Additional data for missing geographic distances was supplemented using the Google Maps API⁸. Following the great circle formula (O’Leary and Cummings 2007), we measure distance based on the latitude and longitude between pairs of countries. We use the log of physical distance between countries, initially recorded in units of 1000 km.

To measure GDP differentials, we drew on a yearly GDP dataset from The World Bank to calculate the log transform of differences between directed country pairs’ GDPs (in billions of dollars). We use log of GDP differences in our analysis to make sure that all values are transformable with the log function. Finally, we include the log of the number of unique lenders and borrowers at the country-year level, plus one, to control for demand and supply around loans in lender and borrower countries. Tables 1 and 2 present variable definitions, data sources, descriptive statistics, and the correlation between variables.

Variables	Definition of the Variables	Data Sources
Dependent Variable	Lending Actions (country-pair year observations) The count of lending actions from a lender country to a borrower country in each year (2005-2017).	Kiva crowdfunding platform (kiva.org)

⁵ Retrieved on 2/28/2019 from <http://www.pewforum.org/interactives/restrictions-on-religion-among-the-25-most-populous-countries-2007-2015/>

⁶ Retrieved on 2/28/2019 from <http://www.worldvaluessurvey.org/WVSCContents.jsp?CMSID=Findings>

⁷ Adopted from http://www.cepii.fr/cepii/en/bdd_modele/presentation.asp?id=6

⁸ https://developers.google.com/public-data/docs/canonical/countries_csv

Variables of Interest	Religious Distance (country-pair year observations) Probability (0-1) that a pair of people at random from two countries have different religious group (2005-2016).	Measured using ARDA dataset (thearda.com)
	Lender GRI (country year observations) Lender country governmental restriction on religion index (2007-2016).	Pew Research Center (pewresearch.org)
	Lender SHI (country year observations) Lender country social hostilities because of religion index (2007-2016).	Pew Research Center (pewresearch.org)
	Borrower GRI (country year observations) Borrower country governmental restriction on religion index (2007-2016).	Pew Research Center (pewresearch.org)
	Borrower SHI (country year observations) Borrower country social hostilities because of religion index (2007-2016).	Pew Research Center (pewresearch.org)
	Religious Diversity (country year observations) Probability (0-1) that a pair of people at random from a country have different religious group (2005-2016).	Measured using ARDA dataset (thearda.com)
Control Variables	Cultural Distance (country-pair year observations) Cultural distance between undirected pairs of countries (Survey data conducted between 2010 and 2014).	World Value Survey (WVS) wave 6 (worldvaluessurvey.org)
	Physical Distance (country-pair observations) Measures of physical distance between undirected pairs of countries using latitude and longitude of the most populated city of a country.	GeoDist dataset (cepii.fr) and Google API
	GDP Difference (country-pair year observations) GDP difference between a lender country and a borrower country.	The World Bank (data.worldbank.org)
	Number of Lenders (country year observations) The number of unique lenders (IDs) from each lender country in each year.	Kiva crowdfunding platform (kiva.org)
	Number of Borrowers (country year observations) The number of unique borrowers (the number of requested loans) from each borrower country in each year.	Kiva crowdfunding platform (kiva.org)

Table 1 Definition of Variables and Data Sources

Variables	Obs.	Mean	Std. Dev.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Lending Actions	74,272	298.22	3029.52	1.00										
(2) Religious Distance	56,525	0.64	0.31	-0.04	1.00									
(3) Lender SHI	60,959	2.66	2.45	-0.00	0.02	1.00								
(4) Lender GRI	60,959	3.22	2.20	-0.03	0.08	0.49	1.00							
(5) Borrower SHI	67,713	3.01	2.69	-0.03	0.15	0.04	0.02	1.00						
(6) Borrower GRI	67,713	3.05	2.09	-0.04	0.16	0.03	0.04	0.53	1.00					
(7) Cultural Distance	11,137	0.16	0.10	0.02	0.31	-0.17	-0.21	0.13	0.12	1.00				
(8) Log (Physical Distance)	73,223	8.77	0.81	0.03	0.28	-0.19	-0.18	-0.19	-0.21	0.19	1.00			
(9) Log (GDP Difference)	57,798	9.86	0.32	0.16	0.03	0.00	0.02	0.04	0.02	0.04	-0.04	1.00		
(10) Log (Num of Lenders)	74,272	4.25	2.36	0.35	0.13	-0.09	-0.28	0.02	0.02	0.37	0.24	0.19	1.00	
(11) Log (Num of Borrowers)	73,387	10.24	1.33	0.09	-0.13	0.07	0.09	-0.14	-0.13	-0.14	0.02	-0.09	-0.20	1.00

Table 2 Statistics Summary and Matrix of Correlation

Empirical Model

As noted previously, we aggregate our data at the level of country-country-year. Considering Hypothesis 1, one can perform an analysis to examine how individual lenders distribute their funding to disparate borrowers with different religions. This approach would be beneficial by allowing us to directly model the impact of religious distances on individual lender behavior. Unfortunately, this approach is not feasible because we lack lender- and borrower-level information about religion. Our information about lenders is particularly limited, as only typically have information on their name and country. Aggregating data at the country level enables us to leverage our knowledge about national representation of religions. This approach is also beneficial because it maintains agreement between our variable operationalizations and our level of analysis. Notably, prior literature dealing with globalized interpersonal trades has employed the same strategy in offline contexts (Silva and Tenreyro 2006; Helpman et al. 2008), as well as online contexts (Blum and Goldfarb 2006; Hortacsu et al. 2009; Burtch et al. 2013). Moreover, regarding Hypotheses 2 to 4, it is actually important that we aggregate our data to the country level, because our variable of interest, religious freedom, captured by the two Pew indices, SHI and GRI, does not vary at the individual level.

In our country-level observations, we constructed our outcome of interest by counting the number of lending actions between a lender country and a borrower country in each year. Each panel in our sample is uniquely identified by a pair of lender and borrower country IDs. Our time variable is an integer measure of year, which varies from 2005 to 2017. In our initial modeling of lending activity, we take an approach similar to Hortacsu et al. (2009). Following those studies, we derive a “gravity equation” (Anderson 1979), relating lending activity to the volume of lenders and borrowers in each country, as well as various factors characterizing the pair (Anderson and Wincoop 2004).

Model Formulation

We assume lenders on the Kiva platform face multinomial choice setup, in which available borrowers are represented as potential alternatives that the lender can choose from. In Equation 1, δ captures common observable quality of the borrower and μ represents the shift in the lender's utility from location l by lending money to the borrower in location b . To clarify, μ is a shifter on the utility of the lenders due to the effect of distances, that is, religious distance, cultural distance, and physical distance. We predict that as distances increase, the utility shifter (μ) grows more negative and vice versa. Finally, N_l denotes the number of lenders in location l . The higher the N_l , the more likely there is to be a lender enjoying sufficient utility for the borrower in location b to receive a loan.

$$\Pr(\text{lender } l \text{ lends to borrower } j \text{ in location } b) = \frac{N_l \exp(\delta + \mu_{l,b})}{\sum_{l'} N_{l'} \exp(\delta + \mu_{l',b})} \quad \text{Equation 3}$$

Taking the log of Equation 3, we drive Equation 4. Then, when we multiply Equation 4 by the number of available borrowers in location b (M_b) to obtain Equation 5. Equation 5 is a gravity equation that predicts the expected volume (T) of lenders from location l who are lending money to borrowers in location b . Finally, k_b captures the observable quality of the borrower, which is assumed to be constant for all lenders⁹.

$$\text{Log}(\Pr(l, b)) = -\text{Log}[\sum_{l'=1}^L N_{l'} \exp(\delta + \mu_{l',b})] + \text{Log}(N_l) + \delta + \mu_{l',b} \quad \text{Equation 4}$$

$$\text{Log}(T_{l,b}) = k_b + \text{Log}(M_b) + \text{Log}(N_l) + \mu_{l,b} + v_{l,b'} \quad \text{Equation 5}$$

Here, we focus on recent economics literature dealing with estimation techniques for gravity equations. Primarily, we are interested in literature dealing with count data outcomes. As pointed out by Silva and Tenreyro (2006), estimation of the gravity model using OLS with a logged dependent variable is biased and leads to inappropriate estimates. Those authors demonstrate that Poisson Pseudo-Maximum Likelihood (PPML) is a preferable estimator choice. We focus here on Poisson regression with two high dimensional fixed effects (poi2hdfe command in Stata; see Guimaraes and Portugal 2011), due to its computational efficiency in handling our large volume of lender and borrower country dummies. That said, notably, the results we obtain are quite similar to those we obtain when employing PPML.

Estimation Approach

As we noted above, we utilize Poisson regression to model lending actions among country pairs in each year. In Equation 4, our outcome of interest is the count of lending actions from lenders in country i to borrowers in country j in the year t . In this model, our variable of interest is dyadic "religious distance" between country pairs in each year. The model also incorporates dyadic measures for cultural distance, physical distance, and GDP differences (as an indication of wealth disparity). We also control for the number of active lenders from each lender country in each year (*NumberOfLenders*), the number of borrowers from each borrower country in each year (*NumberOfBorrowers*), lender countries fixed effects (ϕ), borrower countries fixed effects (δ), and year fixed effects (λ). Finally, ε denotes an error term. It should be noted that our measures for cultural differences and physical distance do not vary over time between a pair of countries.

$$\text{LendingActions}_{ijt} = \beta_0 + \beta_1 * \text{ReligionDistance}_{ijt} + \beta_2 * \text{CulturalDistance}_{ij} + \beta_3 * \text{Log}(\text{PhysicalDistance}_{ij}) + \beta_4 * \text{Log}(\text{GDPDifference}_{ijt}) + \beta_5 * \text{Log}(\text{NumberOfLenders}_{it}) + \beta_6 * \text{Log}(\text{NumberOfBorrowers}_{jt}) + \phi_i + \delta_j + \lambda_t + \varepsilon_{ijt} \quad \text{Equation 6}$$

Empirical Results

Tables 3, 4, and 5 show the results and robustness checks of our estimations associated with H1, H2 (a and b), H3 and H4, respectively. In all three tables, our focal model is the Poisson regression model with two high dimensional fixed effects, which we refer to as "Poisson" for the sake of simplicity. We report robust standard errors clustered by directed country pair to account for possible autocorrelation (Cameron and Miller 2015). In Tables 4 and 5, we employ the residual centering approach demonstrated by Lance (1988) for estimating our moderating effects to addresses the potential issue of multicollinearity between

⁹ Our derivation closely parallels that of Hortacsu et al. (2009).

interaction terms and singular terms (Xue et al. 2011; Geldhof et al. 2013). To implement residual centering, we first regress the interaction terms (the product of two interaction terms) on the variables using OLS. We then use the residuals as the interaction term in our models. As an example, in Table 4, the interaction variable 'Religious Distance X Lender SHI' is regressed against interaction terms, 'Religious Distance' and 'Lender SHI'. Then we use the regression residuals as the interaction term ('Religious Distance X Lender SHI') in our models in Table 4. This procedure is relatively straightforward, and has the benefit of delivering increased statistical power for detecting significant interaction effects. Moreover, through the orthogonalizing process, it ensures that any multicollinearity between the main effects and the interaction terms are mitigated (Bottomley 2016).

H1. Religion as a distance barrier in online prosocial platforms

Columns 1, 2, 3 and 4 of Table 3 show the results of our models evaluating H1, to predict the impact of religious distance on lending actions between a borrower and a lender country. In our focal model, the first model, the coefficient on religious distance is negative and significant (p -value=0.004), which indicates religious distance is negatively associated with the number of lending actions between lender and borrower countries. This provides evidence that supports the first hypothesis, H1. The estimated effect is quite large when we consider the sheer number of lending actions between country pairs spanning 13 years.

VARIABLES	(1) Poisson	(2) Poisson	(3) OLS	(4) Poisson
DV: Lending Actions (LA)	LA	LA	Log (LA +1)	LA
Religious distance	-0.294*** (0.103)		-0.237*** (0.0494)	-0.165* (0.0840)
Minor Religious Distance		-0.841*** (0.161)		
Physical Distance	-0.176*** (0.0281)	-0.174*** (0.0250)	-0.363*** (0.0300)	-0.0837*** (0.0164)
Cultural Distance	-0.399 (0.497)	-0.0173 (0.487)	0.0610 (0.209)	1.040*** (0.382)
Log (GDP Difference)	0.608*** (0.0779)	0.569*** (0.0678)	0.108* (0.0635)	0.379*** (0.112)
Common Native Language				0.325*** (0.105)
Observations	8,769	9,135	8,769	8,113
Lender Effects, Borrower Effects, and Year Effects	YES	YES	YES	YES

Table 3 Religious distance

Notes: Clustered robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

To assess the stability of our finding for H1, we conducted a variety of robustness checks as well. In column 2, we run the same model as in column 1, but we use minor religion groups for the measure of religious distance. Using data¹⁰ from The Correlates of War Project (<http://www.correlatesofwar.org>) for the percentage of minor religion group, we re-calculated Equation 1 to obtain a measure of Minor Religious Distance. Instead of major religion groups in model 1, we use 29 minor religion groups, including Protestants, Roman Catholics, Eastern Orthodox, Shi'a, Sunni, Mahayana, Theravada, etc.¹¹ In column 3, we use OLS estimation with the log of lending actions as the outcome. Again, in the OLS model, we continue to see religious distance has a significant negative effect on lending propensity. Finally, in model 4, drawing on the GeoDist¹² dataset from <http://www.cepii.fr>, we control for Common Native Language (CNL). As mentioned earlier, while all loans on Kiva are translated into English, we control for CNL in our gravity model to capture other confounding economic, cultural and institutional determinants in our cross-country analysis (see Egger and Lassmann 2012; Melitz and Toubal 2012).

H2. Religiously Motivated Social Hostilities as a Mechanism to Boost Religious Distance

Columns 1, 2, 3 and 4 of Table 4 show the results, including robustness checks, of our models for H2. Our focal model in column 1 yields estimates consistent with the anticipated moderating effects of religiously motivated social hostilities in a lender country (H2-a) and a borrower country (H2-b) on lending actions.

¹⁰ Retrieved on 9/2/2018 from <http://www.correlatesofwar.org/data-sets/world-religion-data/wrp-national-data-1/view>

¹¹ The full list of all religion minor groups is available at World Religions Codebook version 1.1.

¹² Retrieved on 2/2/2018 from http://www.cepii.fr/cepii/en/bdd_modele/presentation.asp?id=6

We find that social hostilities in both lender and borrower countries significantly increase the negative impact of religious distance on lending actions, providing support for our H2. As noted in column 2, the results are robust to an alternative OLS model. In column 3, we conduct a robustness check using the number of fatalities¹³ from terrorist attacks as a proxy for SHI in lender and borrower countries. Notably, literature demonstrates that religions, especially in recent decades, facilitate conflicts and terrorism across the globe (Juergensmeyer 2003; Silberman et al. 2005). Using the number of fatalities in borrower and lender countries, we find continued support for H2-a, though marginal support for H2-b (p -value=0.23). Finally, in column 4, we use the one-year lag of SHI in our Poisson model. Again, the results for H2-a and H2-b are both robust in terms of coefficient direction and significance.

VARIABLES	(1) Poisson	(2) OLS	(3) Poisson	(4) Poisson
DV: Lending Actions (LA)	LA	Log (LA +1)	LA	LA
Physical Distance	-0.185*** (0.0285)	-0.373*** (0.0306)	-0.191*** (0.0333)	-0.183*** (0.0290)
Cultural Distance	-0.215 (0.474)	0.170 (0.210)	-0.398 (0.613)	-0.298 (0.474)
Log (GDP Difference)	0.592*** (0.0775)	0.102 (0.0639)	0.542*** (0.0862)	0.585*** (0.0805)
Religious Distance	-0.329*** (0.0995)	-0.187*** (0.0512)	-0.612*** (0.166)	-0.340*** (0.101)
Religious Distance X Lender SHI	-0.0578*** (0.0190)	-0.0417* (0.0223)		
Religious Distance X Lender GRI	0.0215 (0.0243)	-0.0543** (0.0257)		
Religious Distance X Borrower SHI	-0.0654*** (0.0201)	-0.0338* (0.0181)		
Religious Distance X Borrower GRI	-0.0121 (0.0284)	-0.00177 (0.0263)		
Religious Distance X Lag Lender SHI				-0.0763*** (0.0210)
Religious Distance X Lag Lender GRI				0.0468** (0.0223)
Religious Distance X Lag Borrower SHI				-0.0417* (0.0216)
Religious Distance X Lag Borrower GRI				-0.0329 (0.0295)
Lender Fatality			-0.000277 (0.000187)	
Borrower Fatality			-8.07e-06 (6.83e-06)	
Religious Distance X Lender Fatality			-0.000880*** (0.000313)	
Religious Distance X Borrower Fatality			-2.06e-05 (2.59e-05)	
Observations	8,697	8,697	4,973	8,395
Lender Effects, Borrower Effects, and Year Effects	YES	YES	YES	YES

Table 4 Religiously Motivated Social Hostilities

Notes: 1. Clustered robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

2. We do not report the main effect coefficients in model 1 and model 2 (i.e. Lender SHI, Lender GRI, Borrower SHI, and Borrower GRI) and the main effect coefficients in model 4 (i.e. Lag Lender SHI, Lag Lender GRI, Lag Borrower SHI, and Lag Borrower GRI) for the sake of brevity.

Regarding the moderating effect of GRI, there is little consensus in the literature about the impact of governmental restriction on religiosity. On the one hand, literature suggests that an increase in religious restrictions within a country reduces attendance at religious services and, in general, religiosity (North and Gwin 2004; Fox and Tabory 2008). State controls on religion also limit the competition between different religions and, thereby, negatively affect religiosity (Fox and Tabory 2008). On the other hand, freedom of religion may lead to secularization (less level of religiosity) (Fox and Tabory 2008), which also reduces religiosity. As an example, democracy (freedom of choice in general) may lead to a decline in religious participation (Froese and Pfaff 2001). That is, reduced state control of religion has been argued to yield “not just freedom of religion, but also freedom from religion” (Fox and Tabory 2008). As a result, the impacts of governmental regulation on religion are unclear (for more information see Greeley 1994;

¹³ Data Retrieved on 4/3/2019 from <https://ourworldindata.org/terrorism>

Norris and Inglehart 2011). Given the ambiguous implications of government restrictions of religion, we refrained from posing formal hypotheses about moderating effects, and turn to the data, to see what effects manifest empirically.

H3 & H4. Diversity and Physical Distance as Mechanisms to Attenuating Religious Distance

We next consider the attenuating effects of Religious Diversity and Physical Distance on the religious distance-lending relationship. In Columns 1 and 2, we delve into cross-country heterogeneity of religious diversity, using Poisson and OLS models. The result in our focal model is positive and significant, which provides evidence that the negative effect of religious distance is mitigated by religious diversity. The result of the OLS model in column 2 is also positive; however, we are unable to reject the null hypothesis (p -value=0.21). Finally, we consider the substitution between two distance related barriers (i.e. religious distance and physical distance). We find evidence that, from the lender’s perspective, the negative impact of religious distance decreases as the physical distance grows and vice versa. We thus find support for H4, using both Poisson and OLS models.

VARIABLES	(1) Poisson	(2) OLS	(4) Poisson	(2) OLS
	LA	Log (LA +1)	LA	Log (LA +1)
Physical Distance	-0.175*** (0.0258)	-0.362*** (0.0297)	-0.107*** (0.0231)	-0.295*** (0.0297)
Cultural Distance	-0.559 (0.509)	0.0319 (0.212)	0.254 (0.445)	0.108 (0.214)
Log (GDP Difference)	0.612*** (0.0777)	0.108* (0.0637)	0.728*** (0.0700)	0.117* (0.0637)
Religious Distance	-0.570*** (0.108)	-0.222*** (0.0530)	1.563*** (0.262)	0.306** (0.153)
Religious Diversity	2.868* (1.591)	4.126*** (0.849)		
Religious Distance X Religious Diversity	2.170*** (0.517)	0.311 (0.251)		
Religious Distance X Physical Distance			1.107*** (0.164)	0.308*** (0.0832)
Observations	8,769	8,769	8,769	8,769
Lender Effects, Borrower Effects, and Year Effects	YES	YES	YES	YES

Table 5 Religious Diversity and Substitution Effect of Physical Distance

Notes: Clustered robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Discussion and Conclusion

The lack of grounded empirical research on religion, especially at the country level of analysis, along with growing interest in the importance of religion on economic growth (McCleary and Barro 2003; North and Gwin 2004; Grim and Finke 2006) motivated us to study the impact of religion in an online prosocial lending platform. In particular, we chose to focus on prosocial crowdfunding platforms since literature has discussed the importance of religion in this market (Liu et al. 2013). Notably, it is hard, if not impossible, to manipulate religion between objects in an experiment. Moreover, any attempt to manipulate some aspect of a subject’s religiosity to a level that otherwise would not attain cause serious ethical problems (Nielsen 2015). Hence, we leveraged our access to publicly available data to derive the relationship between religion and lenders behavior in crowdfunding platforms.

Hypotheses	Predicted sign	Empirical Finding
H1 (Religious Distance)	-	Supported
H2-a (Religious Distance X Lender SHI)	-	Supported
H2-b (Religious Distance X Borrower SHI)	-	Marginally Supported
H3 (Religious Distance X Religious Diversity)	+	Marginally Supported
H4 (Religious Distance X Physical Distance)	+	Supported

Table 6 Summary of the Findings (DV: Lending Actions)

The empirical results of this study are summarized in Table 6. Our finding of a negative effect from religious distance on individual lending shed light on the importance of religion as a barrier in prosocial platforms. Such a negative impact suggests that while online markets (the Internet) eliminate many distance related

costs (e.g. search cost in distant markets), they were not able to eliminate all barriers. This research also represents three different mechanisms that shift religious prejudice, namely religiously motivated social hostilities, religious diversity, and physical distance.

Consistent with other theoretical studies on intergroup hostilities and prejudice (in-group favoritism and out-group avoidance) (Murphy 1957; Coser 1998), our research suggests that religiously motivated social hostilities shift individuals' preference to help borrowers with the same religion. Such an increase in in-group favoritism seems to stay significant over one year of increase in social hostilities (column 4 in Table 4) and when social hostilities increase in both lender and borrower countries. Meanwhile, we find that religious diversity decreases the negative impact of religious distance. Lenders from countries with diverse religions tend to emphasize less on religion dissimilarities, which is consistent with Liang et al. (2017) finding that cultural diversity reduces the home bias in online labor markets. Finally, our finding of a substitution effect, between religious distance and physical distance, demonstrate the importance of physical distance on the lenders' decision-making process. Individuals seem to have religious prejudice over distant borrowers probably because they are not aware of those differences. Finally, as also noticed by Burtch et al. (2013), not all barriers are necessarily evidence of inefficiency in the online markets. First, most of the religions encourage faithful to be prosocial unconditionally (Norenzayan and Shariff 2008), which increase lending actions on prosocial online platforms (Liu et al. 2010). However, a part of such prosociality is religion-prosociality to encourage same religion members – religion in this sense in a double-edged sword that has both favorable and unfavorable consequences on online prosociality.

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