

# Moral Incentives in Credit Card Debt Repayment: Evidence from a Field Experiment\*

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## Abstract

We study the role of morality in debt repayment using an experiment with credit card customers of a large Islamic bank in Indonesia. In our main treatment, clients receive a text message stating that “non-repayment of debts by someone who is able to repay is an injustice.” This increases the share of customers meeting their minimum payment by 15%, which is more than the effect of substantial financial incentives. Additional treatments help understand the underlying mechanisms and rule out competing explanations, such as reminder effects, priming religion, signaling the lender’s commitment to debt collection, and provision of new information.

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# 1 Introduction

The ability to collect debts is one of the main pillars of any financial system. While economists have extensively examined the importance of screening, monitoring, and reputational considerations, little attention has been paid to the role of morality in establishing a norm of debt repayment. Still, from ancient philosophy to contemporary news media, there are countless references to the moral aspects of debt and debt repayment. In Plato’s *Republic*, Socrates defines justice as “telling the truth and paying one’s debts.”<sup>1</sup> More recently, the burst of the real estate bubble left many observers puzzled by the fact that surprisingly few homeowners defaulted on mortgages whose value exceeded that of the property, while others suggested that moral considerations may have played an important role in these decisions (see [Guiso, Sapienza and Zingales, 2013](#)). Similarly, a vocal debate over the morality of failing to repay one’s student loans has been featured prominently in major newspapers.<sup>2</sup> Issues of morality have also played an important role in the context of sovereign debt, for example in the heated discussions on public debt and defaults in Argentina or Greece.<sup>3</sup>

In this paper, we study the role of morality in debt repayment, one of the most important financial decisions faced by the household. Over the last decades, the ratio of household debt to GDP has grown dramatically worldwide, and high interest consumer credit, including credit card debt, accounts for a large share of this increase both in the U.S. and in emerging markets (see [Mian and Sufi, 2014, 2015](#) and [Zinman, 2015](#)). Many studies have documented patterns of inefficient borrowing and debt repayment among households in various settings (see, for example, [Agarwal et al., 2009a,b](#) and [Stango and Zinman, 2015](#)).<sup>4</sup> However, much less is known about the factors that determine individual debt repayment decisions, and the extent to which non-monetary considerations, including issues of morality, may affect repayment behavior.

To study these issues, we use a field experiment with the universe of late-paying customers of the most popular Islamic credit card in Indonesia, the world’s largest Muslim country. Islamic banking is a large and rapidly growing industry in Indonesia and around the world, with more than 300 banks in over 75 countries and approximately US\$ 1.5 trillion in assets ([World Bank, 2014](#)).

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<sup>1</sup>There are also numerous references to the morality of debt in religious texts. An example from the Bible is *Romans 13:7-8*: “Give to everyone what you owe them [...] and let no debt remain outstanding.” An example from Islam is *Shahih al-Bukhari 3:575*: “[...] The best among you are those who repay their debts handsomely.” Many languages, including German and Hebrew, share the same word for “debt” and “guilt.” Nietzsche offers a detailed account of this association and its influence on the development of social norms in *The Genealogy of Morals* (1887).

<sup>2</sup>See, for example, Lee Siegel “[Why I Defaulted on My Student Loans](#)”, *New York Times*, June 6, 2015. “[Times Op-Ed Goes All In On Student Debt Silliness](#)”, *Forbes*, June 8, 2015.

<sup>3</sup>The prevalence of usury laws throughout history illustrates that moral issues regarding debt are not specific to the debtor’s side. In the context of sovereign debt, philosophers have questioned not only the morality of default but also the morality of debt itself. The French philosopher Montesquieu, for example, argued that sovereign debt is fundamentally immoral because it “takes the true revenue of the state from those who have activity [...], to convey it to the indolent.” Moral arguments have also played a prominent role in debates on debt forgiveness for highly indebted poor countries. See, for example, William Easterly “[Debt Relief](#)”. *Foreign Policy*, December 2001.

<sup>4</sup>For example, households often hold liquid assets and high interest rate debt simultaneously. Existing evidence also suggests that households often fail to choose the lowest cost credit contracts and to prioritize repayment accordingly.

Islamic banks offer a range of standard financial products that comply with the principles of Islamic law and often emphasize the ethical dimension of their business model.<sup>5</sup>

The credit card in our experiment is issued by one of Indonesia’s leading Islamic banks, which is part of a large non-religious conglomerate that targets a relatively secular customer segment. The card has all features of a standard credit card and is functionally equivalent to credit cards issued by non-Islamic banks.<sup>6</sup> Prior to our study, the bank had independently introduced a mobile phone text messaging system that automatically sends reminders to customers who have not made the required minimum payment one day after the due date. Between February 2015 and April 2016, we worked with the bank to develop a second set of messages that included basic reminders as well as moral appeals. These messages were randomly assigned at the individual customer level and sent to late-paying customers two days before the end of a ten-day grace period. A control group received only the first neutral reminder.

In the main treatment condition of our experiment, late-paying customers received a text message containing a moral appeal, which highlights that not repaying a debt when one is able to repay violates a moral norm. The text refers to the Islamic doctrine on non-repayment of debts using a quote from the *Shahih-al-Bukhari*, one of the main religious texts of Sunni Islam, which serves as a source of Islamic law and is widely known among Indonesian Muslims:<sup>7,8</sup>

*The Prophet (Peace and blessings be upon Him) says: “non-repayment of debts by someone who is able to repay is an injustice.” (Imam al-Bukhari) Please repay your credit card balance at your earliest convenience. Call [customer service number].*

The design of our experiment has several important features that help us identify the effect of moral appeals on debt repayment decisions. First, debt repayment is a common financial decision with high stakes. We are able to study this decision directly, by designing a real-stakes field

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<sup>5</sup>References to moral values are also used in other areas of finance. Many investment management firms offer socially responsible investment (SRI) products that do not invest in “sin stocks,” including purveyors of alcohol, tobacco, and gambling, or firms linked to unethical practices. Examples include the *HSBC Ethical Global Equity Fund* or the *iShares Human Rights Fund*. SRIs account for approximately US\$ 5 trillion in assets worldwide.

<sup>6</sup>Not all clients of Islamic banks are driven by religious motivations. In fact, 10 percent of credit card clients at our partner bank are non-Muslims. This is roughly the same as the share of non-Muslims in the Indonesian population. Many non-Muslim customers seem to be attracted by the zero overdraft fees the bank charges. While the card has no explicit interest rates, it charges fees proportional to the balance so that the pricing is similar to credit cards outside Islamic finance. We discuss the institutional details of our setting in Section 2 below.

<sup>7</sup>The *Shahih-al-Bukhari* is one of the six major *hadith* collections of Sunni Islam (*Kuttub al-Sittah*). It reports on the sayings, deeds, and teachings of the Prophet and was transcribed by the Persian scholar Muhammad al-Bukhari after being transmitted orally for centuries. It is considered one of the most important texts in Sunni Islam and is widely used in the application and interpretation of Islamic law.

<sup>8</sup>This quote was suggested to us by our partner bank. The bank had previously used it on a smaller scale in debt collection calls to delinquent customers and ensured us that customers found it appropriate. The available evidence, described in more detail below, indicates that customers indeed had no objections to the content of the message: 80% of recipients stated that they would like to receive a similar message again in the future. We also find no reduction of card usage or transaction volumes in the weeks after customers first receive the message.

experiment that is integrated into the credit card repayment cycle of a large bank. Second, we implement the experiment using text messages sent through the bank’s automated system. This enables us to address the moral appeal to delinquent customers directly. Third, the bank routinely uses text messages to communicate with its customers, and religious or moral content, such as that used in our experiment, is not uncommon in these messages. Therefore, both the channel of communication and the content of the messages used in the experiment are credible and natural in this setting.<sup>9</sup> Finally, many moral appeals used in practice rely on a reference to a moral authority (such as religion, family values, or the law). Our main treatment consists of two separate components: an appeal to a moral authority (a religious text quoting the Prophet) and a moral statement (“non-repayment of debts by someone who is able to repay is an injustice”). Additional treatments, designed to unpack the mechanism through which moral appeals affect repayment, remove the first component, allowing us to isolate the moral statement from explicit references to religion and test whether an appeal to a moral norm without reference to a moral authority can affect behavior. Hence, while we use an Islamic credit card to obtain a setting in which content and framing of the moral appeal are natural, our experimental design allows us to identify the impact of religious context separately from the impact of the moral appeal itself.

We document a strong effect of moral appeals on debt repayment. In our preferred specification, receiving the moral message raised the share of customers meeting their minimum payment by about 15% above the 34% of customers making the minimum payment by the deadline in the control group.<sup>10</sup> In order to assess the economic magnitude of our main result, we benchmark the impact of the moral message against the effect of direct financial and reputational incentives. Our first benchmark is a financial incentive treatment in which late-paying customers were sent a message offering a cash rebate equal to 50% of the outstanding minimum payment – or 5% of the customer’s current debt – for making a payment before the deadline.<sup>11</sup> The cash rebate treatment increased repayment by 7% relative to the control group, which is about half of the effect of receiving the moral message. Since a text message had to be sent in both cases, but the rebate had additional costs, the moral appeal was significantly more cost-effective than these direct financial incentives. Our second benchmark examines the effect of informing customers about the reputational consequences of non-repayment. To do so, a group of customers received text messages that informed them about the

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<sup>9</sup>Messages with moral suasion content that seek to incentivize repayment have also been frequently used by banks in other settings. In India, for example, banks have aired television and radio commercials with moral appeals made by children in an effort to persuade defaulting borrowers to repay their loans. See “[Banks Make Emotional Appeals to Get Borrowers to Repay Loans](#)” *Live Mint*, October 2016. Some firms in the United States and Europe have also used religious content in messages to their customers. See, for example, “[Alaska Airlines Ends Decades-old Prayer Card Tradition](#),” *Reuters*, January 2012.

<sup>10</sup>In a typical month, approximately 90% of credit card customers made the required minimum payment before the time of our intervention, which always occurred two days before the end of the grace period. Prior to the experiment, only about 5% of customers remained more than one month overdue on their minimum payment each month.

<sup>11</sup>We offered a cash rebate, instead of a discount on current payments, to avoid liquidity constraint effects. Hence, the treatment focuses on customers’ willingness, rather than ability to repay.

existence of the Indonesian credit registry and the negative consequences of being reported for late repayment. The reputational incentive treatment raised the probability of meeting the minimum repayment by nearly 30%. These results suggest that both moral and reputational considerations affect repayment behavior in our setting.<sup>12</sup>

To better understand how the moral message affects repayment decisions, we conduct a series of additional interventions that allow us to test and rule out a number of alternative mechanisms. First, is the impact of the moral message simply due to a reminder effect? In order to address this possibility, a group of customers were sent another simple reminder message that did not contain a moral appeal. This message had no significant effect on repayment, ruling out this channel.

Second, does the moral message work because it primes customers on religion or evokes a religious frame of mind? To answer this question, a group of customers were sent a religious placebo message, which included a quote from the Prophet that was taken from the same religious text as the moral message but made no reference to debt repayment. This message also had no effect on repayment. It is also worth noting that the simple reminder and the religious placebo message were both newly designed text messages that had never before been received by any of the bank’s customers. The fact that neither of these messages affects repayment also rules out that the effect of the moral appeal is due to the surprise of receiving a novel or attention-grabbing message.

Third, does the moral appeal only work in a religious context or when using language that has a religious connotation? To answer this question, the bank sent two additional variations of the moral message. While the original moral incentive message explicitly quoted the Prophet, cited the religious text from which the quote was taken, and employed a word of Arabic origin for “injustice” that is typically used in a religious context, the two additional variations of the moral message removed the religious elements of the moral appeal. The first message omitted the reference to the Prophet and the religious text from which the quote was taken. The second message additionally replaced the Arabic-origin word for “injustice” used in the moral message with the standard Indonesian word, which has no religious connotation. The first message allows us to test whether invoking a credible religious source increases the effectiveness of the moral appeal, and sheds light on the mechanism through which references to a moral norm affect behavior. The second message tests whether the moral appeal without religious connotation affects repayment.

We find that all variations of the moral appeal have the same effect. That is, a non-religious moral statement is just as powerful as the same moral statement identified as a quote from the Prophet and attributed to a well-known religious text. This indicates that either customers already associated the moral appeal contained in the message with religion (and potentially with the Prophet) or that the pure moral statement was sufficient to trigger repayment. To disentangle these two explanations, we conducted an end-line survey in which a bank employee read the non-religious

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<sup>12</sup>Our result that customers care and respond to reputational incentives is consistent with recent findings from the literature (see, for example, [Lieberman, 2016](#)). In Section 4.3, we provide evidence suggesting that intensive margin effects (i.e. amount repaid) are stronger in the moral incentive group than in the reputational incentive group.

version of the moral message to customers in the control group and asked if they associated the message with religion. The vast majority of respondents did not associate the quote with a religious source. This finding indicates that our results are driven primarily by the moral appeal, rather than the religious nature of the message.

Fourth, does the moral appeal work because receiving a strongly worded message signals that the bank is committed to enforcing debt collection? To test this possibility, we surveyed customers who had received either no message, the basic reminder, or one of the versions of the moral message one day after the payment deadline. Customers were asked “How committed do you think [bank name] is to collect debt from delinquent customers on a scale from 1 to 5 (where 1 is not committed and 5 is very committed)?” There is no statistically significant difference in the response to this question between customers assigned to the different treatments.

Finally, does the moral message work only once, for example because it is novel or because it conveys new information, or would it work if it were sent repeatedly? To explore this question, the bank sent the moral message to consumers who reappeared on the late payers list and had already received a moral message once. We find that moral messages are effective even when they are resent after as little as two months. Of course, customers who appear on the list a second time are a selected sample, so a clean comparison with the effect of the first moral message is not possible. To partly address this issue, we control for a number of observables to address the differential selection of repeated late-paying customers. We find that the effect of receiving the moral message a second time is nearly identical to the effect of receiving the message for the first time.

This suggests that the effect of the moral message cannot be explained by the novelty of the message. Our findings thus also rule out an explanation for the effectiveness of the moral message based on new information, such as customers learning about a religious teaching or social norm that they were not previously aware of. The repayment rate does not change when the information content of the message is reduced either by excluding religious language or by excluding the reference to a well-known religious text. Moreover, the effect of receiving the same message for the second time is nearly identical to the effect of receiving it for the first time. If the effects were driven by the provision of new information, the message would affect repayment only when a late-paying customer receives it for the first time. While we cannot test for this channel directly, our results appear to be consistent with an inattention interpretation, in which the moral incentive message temporarily draws customers’ attention to moral considerations. In line with this interpretation, we also show that the effect of the moral message is not persistent. That is, receiving the message once does not affect repayment in subsequent months.<sup>13</sup>

Taken together, these findings are consistent with the idea that even when making important financial decisions, people experience a cost from consciously violating a moral norm, so that a moral

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<sup>13</sup>More broadly, our findings relate to a recent line of research that models what individuals pay attention to, and how this influences their decisions (Bordalo et al., 2013; Kőszegi and Szeidl, 2013; Gabaix, 2014).

appeal can affect behavior even when it is not associated with an explicit threat of punishment or negative financial consequences.

This paper relates to several strands of the literature. First, our work contributes to a literature on consumer financial behavior that has examined debt accumulation and repayment decisions (see [Agarwal et al., 2009a,b](#); [Bertrand and Morse, 2011](#); [Zinman, 2015](#)). Several studies in this literature have found that consumers often make suboptimal financial decisions ([Stango and Zinman, 2009, 2015](#); [Dobbie and Skiba, 2013](#); [Dobbie and Song, 2016](#)) and have explored how non-traditional regulation and incentives can help consumers make better financial choices.<sup>14</sup> There is also evidence to suggest that moral considerations play a potentially important role in debt repayment decisions. [Guiso, Sapienza and Zingales \(2013\)](#) use survey data to study attitudes toward strategic default on mortgages among households in the United States. They find that 82% of respondents believe that it is morally wrong to engage in strategic default, and that these respondents are about 10 percentage points less likely to declare strategic default on their mortgages.

Second, our work is related to a large literature on non-monetary incentives ([Frey, 1997](#); [Akerlof and Kranton, 2000](#); [Gneezy, 2005](#); [Bénabou and Tirole, 2003, 2006](#)). In particular, we shed light on how moral appeals affect an important financial decision. Moral appeals, directed to the audience’s sense of what is right and proper, are among the most common strategies of persuasion. Many companies advertise their support for fair trade or charitable causes to affect consumer choices. Most closely related to our setting, a number of banks have used television commercials with moral suasion content to get delinquent borrowers to repay their debt, and financial consumer protection agencies have used moral appeals in to encourage responsible financial behavior.<sup>15</sup> Although moral appeals are widely used in this context in practice, there is relatively little evidence about how and especially why they work. By examining how a direct moral appeal affects debt repayment and exploring the underlying mechanisms, our paper contributes to a recent experimental literature on the effects of moral suasion and normative incentives (see [Dal Bó and Dal Bó, 2014](#); [Pruckner and Sausgruber, 2013](#); [Hallsworth et al., 2014, 2015](#); [Fellner et al., 2013](#); [Ito et al., 2015](#)).

Beyond helping to understand the impact of moral suasion in financial decisions, our work also relates to a literature on religion and economic behavior (see [Iannaccone, 1998](#); [Barro and McCleary, 2006](#), [Clingsmith, Khwaja and Kremer, 2009](#), [Cantoni, 2015](#); [Campante and Yanagizawa-Drott, 2015](#); [Bénabou et al., 2015](#); [Benjamin et al., 2016](#)). Identifying the effect of moral appeals linked to religion is difficult because religious activities often combine moral, instrumental, and social motivations. For example, people may go to church because they believe it is the “right thing to do,” but they may also do so for indirect material or social benefits, such as socializing with others or signaling one’s beliefs or shared values. For example, people may go to church because they believe it is the “right thing to do,” but may also do so for indirect material or social benefits, such as

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<sup>14</sup>For examples of non-traditional incentives and regulation intended to improve financial decisions see, for example, [Madrian and Shea, 2001](#); [Benartzi and Thaler, 2004](#); [Campbell et al., 2011](#); [Agarwal et al., 2014](#).

<sup>15</sup>See, for example, “Banks Make Emotional Appeals to Get Borrowers to Repay Loans” *Live Mint*, October 2016.

socializing with others, or signaling one’s beliefs or shared values. Our paper adds to this literature by providing evidence that moral motivations associated with religion can drastically affect behavior in a setting where the social interactions usually associated with religion are absent.<sup>16</sup>

The remainder of the paper proceeds as follows. In Section 2, we describe the setting and experimental design. Section 3 presents the main results. Section 4 discusses the interpretation of our findings, and Section 5 concludes.

## 2 Experimental Design

### 2.1 The Credit Card

We design a natural field experiment with the universe of late-paying customers of Indonesia’s most popular Islamic credit card. The credit card is issued by one of the country’s leading Islamic banks, which offers credit cards as part of its portfolio of Islamic consumer finance products. Originally introduced in 2009, the card had approximately 200,000 customers at the time of our experiment.

The credit card features are designed to comply with the principles of Islamic *Shari’a* law which, among other prescriptions, prohibits charging interest and investing in activities considered contrary to the principles of Islam. In order to be fully consistent with Islamic law, the features of the card are based on a *fatwa* (legal decree) issued in 2006 by the *Indonesian Council of Islamic Scholars* that lays out the guidelines under which banks can offer *Shari’a* compliant credit cards. Following these guidelines, the credit card is structured as an *Ijara* fee structure contract, which means that customers pay a fee for the transaction services provided by the card instead of a variable interest rate. Customers are charged fixed annual fees of Rp 120,000 (US\$ 10) for a basic card, Rp 240,000 (US\$ 20) for a gold card, and Rp 600,000 (US\$ 45) for a platinum card, plus a monthly membership fee of 2.75% of the customer’s credit limit. This monthly fee can be partially or fully waived through a “cash rebate,” which is proportional to the customer’s available credit and can range from zero to the total amount of the monthly fee.<sup>17</sup> The monthly fee is waived entirely if there is no outstanding debt.

There is a monthly billing cycle, with a billing date on the eighteenth day of each month. The minimum monthly payment, equal to either 10% of the customer’s total outstanding balance or Rp 50,000 (whichever amount is higher) plus eventual arrears and overdrafts, is due on the eighth day of the following month. Customers who do not meet the minimum payment by the due date receive a text message from the bank on the following day. The bank grants late-paying customers

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<sup>16</sup>Many laboratory experiments have also shown that religious primes can induce prosocial behavior, increasing the amount shared in dictator games (Shariff and Norenzayan, 2007), reducing cheating (Randolph-Seng and Nielsen, 2007; Mazar et al., 2008), and increasing charitable donations (Pichon et al., 2007). Other work shows that priming religion increases punishment of unfair behavior, but only among religiously committed subjects (McKay et al., 2011; Laurin et al., 2012).

<sup>17</sup>The cash rebate is calculated as follows:  $cash\ rebate = 2.75\% \times (credit\ limit - amount\ outstanding)$ . The net monthly fee is the monthly membership fee minus the cash rebate, that is,  $2.75\% \times amount\ outstanding$ .

a grace period of ten days, which ends on the eighteenth day of each month (we refer to this date as the “repayment deadline”). Customers who do not make the minimum payment by this date are considered “delinquent” and are reported to the Indonesian credit registry, the *Sistem Informasi Debitur*, which all banks in Indonesia consult before issuing credit. On the same day, they receive a phone call from the bank. They are charged a nominal late payment fee, ranging from Rp 15,000 to Rp 35,000 and the card is automatically blocked.<sup>18</sup> Once the customer makes the minimum payment, the card is immediately unblocked. If a customer’s minimum payment remains outstanding for more than 90 days after the due date, the card is permanently blocked and the account is closed. Accounts that remain more than 120 days overdue are sent to the bank’s collections department and, eventually, an outside collection agency. Figure 1 summarizes the credit card billing cycle and the timeline of our intervention.

## 2.2 Sample Population and Random Assignment

The population for our experiment comprises the 14,429 credit card customers who were more than one week late on their minimum payment at least once during one of the six months between February 2015 and April 2016 in which the experiment was carried out.<sup>19</sup> Because some customers were late more than once during this period, there are 23,520 observations in our sample frame.<sup>20</sup>

The experiment was conducted in six waves, coinciding with the monthly credit card repayment cycle.<sup>21</sup> Each month, the bank shared with us the list of customers that had not made the minimum required payment by the sixteenth day of the month, or two days before the final repayment deadline. In the main experiment, we excluded from this list all customers who had previously received a text message treatment. Customers assigned to the control group in a previous month remained in the sample and could either be assigned to one of the treatments or form part of the control group again. For example, in March 2015, 4,803 customers were more than a week late. Out of these, 1,018 had previously received a treatment message and were thus excluded from the sample; the remaining 3,785 customers were assigned to one of the treatment conditions or

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<sup>18</sup>Late payment fees increase over time. For example, customers who are more than 30 days late are charged additional fees ranging from Rp 20,000 to Rp 50,000.

<sup>19</sup>The experiment was conducted in February, March, May, and June 2015, and February and April 2016. We originally planned to have a treatment group receiving restructuring offers in April 2015, but the partner bank was not able to operationalize this. Upon agreement with the bank, we then decided to pause our main intervention in April 2015 and to resume it in May 2015. We also ran a small pilot with 250 customers in January 2015 that had results similar to those in our main intervention.

<sup>20</sup>In the universe of 14,429 customers, 8,691 were late only once, while the remainder appeared in our sample more than once: 3,052 customers were late twice, 1,414 were late three times, 579 four times, 191 five times, and 52 were late in all six months.

<sup>21</sup>The first two waves of the experiment were conducted in February and March 2015. The last three waves were conducted in June 2015, and February and April 2016. As part of a parallel experiment for a second paper, we had two other treatment groups with customers receiving multiple text messages on the same day. We excluded those 2,200 observations from our analysis. Results are unaffected when these observations are included, and are displayed in Table A.4 in the Supplemental Appendix. In the notes to Table A.4 we also discuss some design and implementation issues which affect that interpretation of the effect of these additional treatments.

the control group. Following this process, we obtain a dataset that includes 13,428 observations, representing 12,104 unique credit card customers.<sup>22</sup>

Eligible customers were randomly assigned to one of several treatment conditions or to a control group. As part of the bank’s standard communications policy, all customers received a neutral text message reminder one day after they had missed the minimum payment. The 4,120 customers assigned to the control group received no other text from the bank, while the 9,308 customers assigned to one of the treatment conditions received additional information through a text message sent two days before the repayment deadline. All treatments were randomly assigned at the individual customer level and delivered through text messages, using the bank’s existing customer notification system.<sup>23</sup> Appendix Figure A.2 summarizes the experimental design.

In February and April 2016, we conducted a separate follow-up experiment with the 898 customers who reappeared on the list of late payers and had previously received the moral message as part of the main experiment. The experiment was designed to test if the moral message only works the first time it is sent, for example because it is novel or conveys new information, or if sending the message repeatedly can still affect repayment. Following the same procedure and timing as above, recurrent late payers were randomly assigned either to a control group or to a repeated message treatment group.<sup>24</sup> The 450 customers assigned to the control group again only received a neutral reminder one day after they missed the minimum payment. The 448 customers assigned to the repeated moral message treatment group received a moral message identical to the one they had previously received. As in the main experiment, this message was sent two days before the repayment deadline.

## 2.3 Experimental Treatments

### 2.3.1 Control Group

A total of 4,120 customers were assigned to the control group, which forms the basis of comparison throughout the experiment. Customers in this group received a single reminder one day after they had missed the required minimum monthly payment:

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<sup>22</sup>Of these 13,428 observations, 10,903 customers appear on the list of late-payers only once, 1,088 appear twice (the first time in the control group), 104 appear three times (the first two in the control group), 6 appear four times (the first three in the control group), and 1 customer appears 5 times (the first four times in the control group). Although this approach does not affect the internal validity of our analysis, it could potentially reduce the representativeness of our sample, since in a given month, customers who received a previous treatment message could have been part of the list of late payers if they had been assigned to the control group instead. However, given that the effect of our treatments is very similar for subjects appearing in the sample for the first time and those previously assigned to the control group, re-weighting the sample to correct for the probability of being excluded does not affect our results.

<sup>23</sup>All messages were in Bahasa Indonesia, the official language of Indonesia, which is also the standard language used by the bank in all of its customer communications.

<sup>24</sup>We stratify on how recently the customer had received the first moral message: 364 customers were treated two months before reappearing in the late-payer list, while the other 534 customers were treated for the first time between eight and fourteen months before.

*Your [name of the card] has reached the due date. Please make a payment at your earliest convenience. If you have already paid, ignore this text. Call [customer service number].*

While all other customers received an additional message from the bank two days before the repayment deadline, customers in the control group received only this initial reminder.

### 2.3.2 Moral Incentives

To test the impact of moral appeals, we assigned 2,244 participants to the *moral incentive* treatment condition. In addition to the basic reminder sent to all customers who missed the due date, these customers received an additional message drawing attention to the religious implications of not repaying their debts. The message quotes from the *Shahih al-Bukhari*, one of the main religious texts of Sunni Islam, which reports of the teachings, deeds, and sayings of the Prophet Muhammad and serves as one of the main sources for the interpretation of Islamic law. The quote highlights the religious doctrine on repayment of debts and asks the customer to repay her outstanding balance:

*The Prophet (Peace and blessings be upon Him) says: “non-repayment of debts by someone who is able to repay is an injustice” (Imam al-Bukhari). Please repay your credit card balance at your earliest convenience. Call [customer service number].*

To better understand the mechanisms underlying the impact of moral appeals, the bank sent two additional variations of this treatment, which varied the degree of its religious content. The first variation of the message (the *implicit moral incentive* condition) removed the reference to the Prophet and the text from which the quote was taken, but kept the Arabic-origin word for “injustice” from the original quote, which may be associated with religion. This message, assigned to 1,186 customers, reads:

*Non-repayment of debts by someone who is able to repay is an injustice. Please repay your credit card balance at your earliest convenience. Call [customer service number].*

The second variation of the message (the *non-religious moral incentive* condition), which was assigned to 1,180 customers, not only omitted the reference to the Prophet and the source of the quote, but also replaced the Arabic-origin term for “injustice” (*kezaliman*) with the standard Indonesian word (*ketidakadilan*), which has no religious connotation.

The first variation of the moral message allows us to test whether a moral appeal is strengthened by invoking a credible religious source. The second message tests whether receiving a moral statement without any religious connotation can affect the repayment decision.

### 2.3.3 Direct Financial Incentives: Cash Rebate

To benchmark the effect of moral appeals against financial incentives, we implemented two treatment conditions. The first treatment consisted of a direct one-time financial incentive in the form of a large cash rebate. In this *cash rebate incentive* condition, the bank sent the standard reminder on the due date and an additional message two days before the repayment deadline in which customers were offered a rebate equal to 50% of their minimum payment (5% of their total outstanding balance), if they made the required minimum payment by the deadline. The rebate would then be credited to their account in the next billing cycle.<sup>25</sup> This message, assigned to 336 participants in June 2015, reads as follows:

*This month, make your credit card payment to get a cash rebate equal to 50% of your minimum payment on your next statement. Please repay your card balance at your earliest convenience. Call [customer service number].*

### 2.3.4 Indirect Financial Incentives: Credit Reputation

The second benchmarking treatment consisted of a message highlighting the negative effect of non-repayment on a customer’s credit reputation and the ability to obtain credit in the future. In this *credit reputation incentive* condition, customers received the standard reminder on the due date and an additional message two days before the repayment deadline. The message stated that non-repayment will result in the customer being reported to the Indonesian credit registry, the *Sistem Informasi Debitur*, which will diminish the customer’s access to credit in the future. This message was assigned to 2,000 customers and reads as follows:<sup>26</sup>

*Late payments are reported monthly to Bank Indonesia Sistem Informasi Debitur (SID), which all banks consult. This will diminish your ability to get credit in the future. Please repay your card balance at your earliest convenience. Call [customer service number].*

### 2.3.5 Placebo: Simple Reminder

We assigned 1,362 customers to the *simple reminder placebo* treatment condition. Customers in this treatment received the standard reminder on the due date and an additional neutral reminder

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<sup>25</sup>We worked with the bank to design a rebate that customers would easily understand based on their previous experience. In general, clients in our sample are familiar with the concept of rebates: they have been offered similar incentives before, and cash rebates are an inherent feature of the card’s pricing scheme, described in Section 2.1.

<sup>26</sup>We designed two variations of this text message and randomly assigned 1,000 customers to each of two subgroups. The first subgroup received the message in the main text. The second group received a text that says “*Late payments are reported monthly to Bank Indonesia Sistem Informasi Debitur (SID), which all banks can consult. Please repay your card balance at your earliest convenience. Call [customer service number].*” We pool these two treatments in our analysis, since their effect on repayment is not statistically different.

two days before the repayment deadline.<sup>27</sup> This second reminder is similar to the message sent to all customers who miss the due date and makes no reference to the moral or financial implications of non-repayment:

*The due date of your [name of the card] bill was on [due date] and your payment has not been received yet. Please repay your credit card balance at your earliest convenience. Call [customer service number].*

This treatment tests how receiving a second reminder affects repayment through channels such as limited attention and memory. Comparing its effect to that of moral incentives allows us to distinguish the impact of moral appeals from the effect of receiving additional reminders.

### 2.3.6 Placebo: Religious Message

Finally, we assigned 1,000 customers to a *religious placebo* treatment. Customers in this group received the standard message on the due date and an additional message with a quote from the Prophet taken from the same source used in the *moral incentive* treatment two days before the repayment deadline. However, in contrast to the moral incentive message, this quote made no reference to financial matters or debt repayment:

*The Prophet (Peace and blessings be upon Him) says: “When Allah wishes good for someone, He bestows upon him the understanding of the Book” (Imam al-Bukhari). Please repay your credit card balance at your earliest convenience. Call [customer service number].*

This treatment allows us to test whether moral appeals work because they highlight the moral implications of a specific action, the non-repayment of debts, or simply because they remind recipients of the religious nature of their contract with the bank or evoke a religious frame of mind.

## 2.4 Data and Summary Statistics

The dataset we use in our analysis combines the results from the experiment, administrative data from our partner bank, and information from a number of follow-up surveys phone surveys administered to the bank’s customers.

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<sup>27</sup>A number of customers were included in this treatment in the last wave of the experiment to compare the effect of the moral incentive to that of a simple reminder on outcomes measured in a phone survey. The survey asked whether customers would like to receive the same text message again, and how committed they thought the bank is at collecting debt. The survey instrument is available in the Supplemental Appendix.

### 2.4.1 Administrative Data

We first obtained bank data on customer characteristics (age, gender, religion, province of residence, and monthly income) for the universe of late-paying customers participating in the experiment. Table 1 reports summary statistics and presents a test of random assignment.<sup>28</sup> The median credit card customer in our sample is male, 41 years old, has a monthly income of Rp 5,000,000 (US\$ 375), a credit limit of Rp 10,000,000 (US\$ 750) and an outstanding debt of Rp 7,739,015 (US\$ 580) on the credit card.<sup>29</sup> As expected from random assignment, the sample is well balanced across all baseline characteristics.<sup>30</sup>

In a second step, the bank shared data on credit card repayment for customers in our sample after each wave of the experiment as well as historical repayment data covering the 12 months before our intervention. In the monthly repayment data, we observe whether the customer made the required minimum monthly payment by the deadline, which is the main outcome of interest for our analysis. The bank also provided further financial data for the customers in our sample. In particular, we collected data on savings account balances for all customers in the main experiment who also have an account with our partner bank.<sup>31</sup>

### 2.4.2 Survey Data

We combine data from the experiment with information from a number of phone surveys administered to the population of credit card customers.<sup>32</sup>

The main survey, conducted in June and July 2015, asked respondents about their level of religiosity and their familiarity with the quote used in the three variations of the moral incentive treatment condition. The same survey was also administered to a randomly drawn sample of the bank’s credit card customers all over Indonesia who were not late in their payments during the study period. We use the results from this survey to construct a measure of local religiosity for the regions in which credit card customers reside. The bank also shared with us the results of an earlier survey, conducted in December 2014 with a random sample of credit card customers not included in our sample. This survey contains broader questions credit and repayment. We use this survey to measure general knowledge about the Indonesian credit registry.

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<sup>28</sup>See Table A.2 in the Supplemental Appendix for summary statistics and a test of random assignment for the follow-up experiment.

<sup>29</sup>For comparison, Indonesian per capita income was US\$3,491 (approximately US\$ 291 per month) at the time of the experiment (World Bank, 2014).

<sup>30</sup>Our sample is also very similar to the universe of the bank’s credit card customers along most observable dimensions. Late payers are only marginally more likely to be female (40% female versus 37% male) and, on average, have a slightly lower credit limit (Rp 13.5 million versus Rp 14.7 million).

<sup>31</sup>The bank’s customers are not required to have a checking or savings account to open a credit card. The most common deposit account within the bank is a liquid savings (*tabungan*) account. In our 2015 sample, 30 customers had a checking account and 1,088 customers have a savings account at the bank at the time of the experiment.

<sup>32</sup>The survey instruments are available in the Supplemental Appendix.

An additional survey was administered one day after the repayment deadline in April 2016 to a random sample of credit card customers who had participated in the experiment that month. The purpose of this survey was to test whether the moral appeal signals that the bank is particularly committed to collecting its debt, whether receiving it causes any disutility to customers, and to measure whether the reputational message increases knowledge about the credit reporting system. Respondents in this survey had received either no message, the basic reminder, or one of the versions of the moral message. The survey first asked these customers how committed they thought the bank was to collect debts. Second, it asked whether they wished to receive text messages like the one they had received a few days earlier in the future. Third, customers were randomized in two groups: those in a treatment group were read the content of the reputational incentive message, while those in a control group were not given any information. All customers were then asked questions about the Indonesian credit registry and their beliefs about the consequences of non-repayment.<sup>33</sup>

### 2.4.3 Main Outcome of Interest

Our main outcome variable is a dummy, indicating whether a customer has made the required minimum payment by the eighteenth day of the month (the repayment deadline). Note that we are limited in our ability to evaluate outcomes measured after this deadline, as we no longer have full experimental control after this date: If a customer fails to make a payment by the deadline, her account is automatically deactivated, she is reported to the credit registry and may receive phone calls from the bank. In particular, the bank may expend greater effort calling customers in treatment groups with lower average repayment, so that the bank’s actions might interact with a customer’s treatment status. Hence, the impact of our intervention on outcomes other than repayment, observed after the deadline, may not be causal and must be interpreted with caution.

## 2.5 Estimation

Since treatment status was randomly assigned, our identification strategy is straightforward. We identify experimental treatment effects using regressions of the form:

$$Y_i = \alpha + \sum_c \beta_c I_{c,i} + \gamma' \mathbf{X}_i + \epsilon_i, \quad (1)$$

where  $Y_i$  is an indicator for customer  $i$  repaying an amount equal to or greater than the required minimum payment within the deadline. The variables  $I_{c,i}$  are indicators for customer  $i$  being in category  $c$ , where  $c$  denotes the experimental treatment condition to which customer  $i$  was

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<sup>33</sup>The survey conducted in June and July 2015 was administered to 2,273 participants of our experiment and to other 567 randomly selected customers. The survey conducted in December 2014 was administered to 223 randomly selected customers. The survey conducted in April 2016 was administered to 95 randomly selected participants of the experiment that month, stratified by treatment group.

assigned. In some specifications, we additionally include a vector of control variables,  $\mathbf{X}_i$ , which contains either month fixed effects only, or month fixed effects as well as a set of customer and account characteristics. In all regressions, the omitted category is the control group, which received only a basic reminder on the due date but no second text message two days prior to the deadline.

## 3 Results

### 3.1 Main Result: Moral Incentives

We begin by reporting the effect of the moral incentive treatment compared to the control group across all waves of the experiment, shown in Table 2, column (1). We do not include any controls, so that these numbers represent raw repayment rates. Compared to the control group, the share of customers making a payment equal to or greater than the required minimum payment by the deadline increases by 13% (from 34% to 38%) under the moral incentive treatment condition.<sup>34</sup> The difference in repayment rates is significant at the 1 percent level (p-value=0.000). In column (2), we add month fixed effects, and in column (3) we add customer-level covariates. The results remain very similar across all specifications (with treatment effects ranging from 13% to 15% above the baseline effect of 34% in the control group), indicating that the randomization was successful.

The treatment effect is similar for men and women, and also does not differ by age, religion, or whether a customer has appeared on the list of late payers at least once in the year before our intervention.<sup>35</sup> The treatment effect is stronger for customers with a lower debt-to-income ratio.<sup>36</sup>

### 3.2 Benchmarking the Moral Incentive Effect

#### 3.2.1 Moral versus Financial Incentives

To assess the economic significance of the moral incentive effect, we use two benchmarking treatments. In the first benchmarking treatment, the bank sent text messages to a random subset of customers offering them a substantial cash rebate in the next billing cycle if they made the required minimum payment in the current month by the deadline. This cash rebate amounted to 50% of the minimum payment to be made, which is equivalent to a 5% reduction of the customer’s total outstanding credit card debt. The median rebate offered was Rp 380,000 (US\$28), which is equal

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<sup>34</sup>DellaVigna and Gentzkow (2010) report persuasion rates from a variety of settings. Using the same calculation as in their paper, the implied persuasion rate in our experiment is approximately 6%.

<sup>35</sup>Fewer than 10% of customers in our sample are non-Muslim, so that it is not possible to estimate this effect precisely. We discuss heterogeneity by *local religiosity* in Section 4.1.1. Heterogeneous treatment effects are reported in Table A.3 in the Supplemental Appendix.

<sup>36</sup>However, this pattern also holds for the reputational incentive treatment, and is therefore suggestive of financial constraints, rather than a reaction to the conditional statement “non-repayment of debts *by someone who is able to repay* is an injustice” in the moral message.

to 8% of monthly earnings for the median customer in our sample (the average rebate offered was Rp 500,000).

The results are reported in Table 3. In column (1), we present raw repayment rates, restricting our sample to the fourth wave of the intervention to keep the time period constant across treatments. In column (3), we add month fixed effects and include observations from all months of the intervention. In column (4), we also include individual controls. Across all specifications, we find that providing financial incentives increases repayment rates. Although the magnitude of the effect of financial incentives is lower than that of the moral message, we cannot rule out that the two effects are the same under conventional significance levels due to the limited sample size. However, the p-value of the one-sided test that the cash rebate treatment coefficient is larger than the moral incentives treatment coefficient is 0.104 in the specification with fixed effects, and 0.055 in the specification that includes fixed effects and controls. These results suggest that providing moral incentives can be more powerful than providing substantial one-time financial incentives, especially in terms of cost-effectiveness: the average rebate offered to clients who responded to the message by making a payment was Rp 580,000 (US\$43). By contrast, sending text messages with a moral appeal comes at practically no cost to the bank.

### 3.2.2 Moral versus Reputational Incentives

In addition to the direct financial consequences of non-repayment, customers might also care about material incentives with a longer time-horizon, such as their reputation in the credit market. To evaluate this hypothesis, one group of customers was sent a text message informing them about the Indonesian credit registry, the *Sistem Informasi Debitur*, and the consequences of being reported for non-repayment instead of the moral message. Specifically, the credit reputation message informed customers that all banks consult the credit registry before issuing credit, so that non-repayment of credit card debt has adverse consequences on future access to credit.

Evidence from a survey with 223 clients drawn from the universe of bank customers suggests that overall knowledge about the Indonesian credit registry is limited. About 75% of respondents report that they do not know about the credit registry, and most clients demonstrate to have substantial misconceptions about the consequences of a bad credit record. For example, 34% of respondents think it will make them unable to open a deposit account, 48% think they will have to appear in front of a judge –neither of which are true, and 22% of respondents think it will have no consequences on their ability to obtain credit in the future, which is also false, since all banks in Indonesia use the credit registry to screen customers.<sup>37</sup>

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<sup>37</sup>The survey referred to the *Sistem Informasi Debitur* and not to the credit registry in general, so that some clients might be aware about the existence of a credit registry, but not its actual name. The relatively large effect of the credit reputation treatment might in part be due to the message signaling to customers that the bank is serious about actually reporting delinquent customers to the registry.

Results from the credit reputation treatment are also reported in Table 3. When looking at raw repayment rates in Table 3, column (2), informing customers about the credit registry raises the probability of meeting the minimum repayment by the deadline by 29% (as opposed to 18% for moral incentive messages sent during the same months). To gain a better understanding of how the reputational incentive treatment affects customers' decisions, a small survey was conducted in April 2016. Customers were randomized in two groups: customers in a treatment group were read the content of the reputational incentive message, and customers in a control group were not given any information. All participants were then asked some questions about the Indonesian credit registry. The results from the survey suggest that late paying customers are poorly informed about the functioning of the credit registry, and that the reputational incentive message does not increase their knowledge of how the registry functions. Instead, the message seems to simply make customers think that the consequences of being reported to the credit registry are more severe.<sup>38</sup> Taken together, the benchmarking results indicate that both moral and reputational incentives affect repayment decisions in our setting.

### 3.3 Ruling out Other Channels

Our results establish that receiving a moral message substantially increases the repayment rate. However, there are several mechanisms other than moral suasion that could explain this effect. In this section, we present a number of tests to evaluate alternative channels and show which of these potential explanations can be ruled out.

#### 3.3.1 Reminding Customers

First, receiving a text message might increase repayment rates simply because it acts as a reminder, irrespective of whether the message contains a moral appeal or not (see, for example, Karlan et al., 2015). To address this possibility, we compare repayment in the moral incentive treatment group to repayment among customers assigned to the simple reminder placebo treatment, which consisted of a basic non-religious reminder that made no reference to morality or religion and was sent at the same time as the moral message. The results, displayed in Figure 2 and reported in Table 4, show that receiving the simple reminder has no effect on repayment. The raw repayment rate is 35% in the group receiving the basic reminder, compared to 34% in the control group. The p-value of the difference between the simple reminder and the control is 0.714, and the p-value of the difference

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<sup>38</sup>Compared to the control group in the survey, the share of customers correctly stating that being reported will have consequences for their ability to get credit from other banks increases from 38% to 49% (p-value=0.18). However, exposure to the text from the reputational treatment also increases the share *incorrectly* reporting that: (i) they will have problems opening a deposit account (from 27% to 49%, p-value=0.007); (ii) they will have problems getting credit from the same bank (from 38% to 50%, p-value=0.18); (iii) they will have to appear in front of a judge (from 19% to 25%, p-value=0.421).

between the simple reminder and the moral message is 0.013. We can therefore rule out that the moral message works simply because it reminds customers to repay their debt.

### **3.3.2 Priming Religion**

Second, receiving a text message with religious content could affect the repayment decision through priming effects, which are also unrelated to moral suasion. The moral message might, for example, remind recipients of the religious connotation of the credit contract or evoke a religious frame of mind more generally. To rule out this possibility, we compare repayment in the moral incentive treatment group to repayment among customers who received the religious placebo message. The religious placebo message contains a quote from the Prophet that is taken from the same religious text as the quote used in the moral message but makes no reference to debt repayment. The results, also displayed in Figure 2 and reported in Table 4, show that the religious placebo message has no effect on the repayment rate. The raw repayment rate is 35% in the group receiving the religious reminder and nearly identical to the repayment rate in the control group. The p-value of the difference between the religious placebo and the control is 0.889, and the p-value of the difference between the religious placebo and the moral message is 0.007, indicating that the effect of the moral message is also not driven by priming on religion.

### **3.3.3 Novelty of the Message**

Third, customers may respond to the message not because of its moral content, but because it is novel or attention-grabbing. To test for this possibility, we consider repayment rates under different text message treatments that use new content. Note that several of the messages that were sent to credit card customers as part of the experiment –including the simple reminder, religious placebo, and financial reminder messages– were specifically designed for the study, and had never been received by any of the bank’s customers before. The fact that none of these messages had a statistically significant effect on repayment allows us to rule out that the effect of the moral message is explained by the novelty of the message. We can also rule out the possibility that receiving a message with a quote from the Prophet is particularly attention-grabbing. The religious placebo message also uses a quote from the Prophet, which is very similar to that in the moral incentive treatment and taken from the same religious text. However, as we show above, this message has no effect on repayment.

### **3.3.4 Signaling the Bank’s Commitment to Debt Collection**

Finally, since customers had previously received a text message at the time of the due date, receiving a second message could be perceived as a signal that the bank is particularly committed to debt collection, which could affect repayment rates independent of the moral appeal. To address this

possibility, we conduct the following test. In April 2016, the bank sent placebo messages and the three variations of the moral message discussed above to customers never treated before. Another group of customers was randomly assigned to a control group and received no message. We conducted a phone survey with customers in both groups the day after the payment deadline and asked “How committed do you think [bank name] is to collect debt from delinquent customers on a scale from 1 to 5 (where 1 is not very committed, and 5 is very committed)?” The percentage of respondents that answered 4 or 5 is 76% in the control group, 67% in the basic reminder group, and only 59% among customers that received a moral message (the p-value for the test of equality of all three coefficients is 0.30, and the p-value of the test of equality between respondents in the control group and the treatment group is 0.12). Hence, there is no evidence to suggest that receiving the moral message is perceived as a signal that the bank is now more committed to enforce debts.<sup>39, 40</sup>

## 4 Interpreting the Results

### 4.1 What Drives the Moral Appeal

The evidence from the previous section rules out several mechanisms that are unrelated to moral suasion but could generate higher repayment rates in response to the moral message. We now explore competing hypotheses for the effectiveness of the moral appeal and present tests to distinguish between these alternative explanations.

#### 4.1.1 Religious Connotation of the Message?

The first possibility is that individuals indeed respond to the moral content of the message, but that this effect arises only because the moral appeal is delivered in a religious context. This seems plausible, given that the original moral incentive message explicitly quoted the Prophet and cited the religious text from which the quote was taken. Moreover, the original moral incentive message used a word for “injustice” that is of Arabic origin, and is often used in a religious context.

In order to distinguish the religious context of the moral message from the effect of the moral appeal, the bank sent two additional variations of the moral message to a randomly chosen subset of credit card customers. The first message was identical to the main treatment, but omitted the name

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<sup>39</sup>We also obtained the repayment history of all clients in our sample from the partner bank, and use this information to test whether the response to the moral incentive treatment differs, depending on whether a customer appears on the list of late payers for the first time or has been delinquent before. We find no evidence that this is the case.

<sup>40</sup>These findings also relate to those in [Hallsworth et al. \(2015\)](#), where a reframing of debt non-repayment from an error of “omission” to an error of “commission” increased of repayment of tax debt. The authors in that paper also find that the act of commission is associated with greater beliefs about punishment for non-repayment, and this change in beliefs about punishment is their preferred interpretation for their results. In our setting, since there are no changes in beliefs about punishment from the bank, the findings indicate an association of commission with greater moral costs. This suggests that the mechanism of moral penalties might also be at play, in addition to the main channel proposed in that paper.

of the Prophet and the source of the quote. The second variation of the moral message omitted the name of the Prophet as well as the source of the quote and additionally replace the Arabic-origin word for “injustice” with the standard Indonesian word, which has no religious connotation. Hence, the first message tests, whether adding a credible religious source adds power to the impact of a moral appeal. The second message tests if simply receiving a simple moral appeal without any religious connotation affects repayment decisions.

The results are displayed in Figure 3, and reported in regression format in Table 5. In the months in which the three variations of the moral message were sent raw repayment rates are similar for all three variations of the moral incentive condition. This could indicate that either customers already associated the moral appeal contained in the message with religion (and potentially with the Prophet), or that the pure moral statement was indeed sufficient to trigger repayment. To disentangle these competing hypotheses, we conducted a follow-up phone survey with a random sample of credit card customers. In this phone survey, the message with the standard Indonesian word for “injustice” and without reference to the Prophet was read to customers, who were then asked to indicate its source.<sup>41</sup> The vast majority of clients were not immediately aware of the religious origin of the message. When asked “Who do you think might have said this phrase?”, out of 5 given options, 77% chose “I don’t know”, whereas only 19% associated the phrase with religious figures or institutions (including the bank itself). These findings suggest that the higher repayment rate was not due to an implicit religious association with the message. These results also corroborate the view that our sample is relatively secular; most clients did not recognize the Islamic doctrine on non-repayment of debts.

The follow-up survey helps us further clarify the role of religiosity in explaining the effects. In the survey, respondents were asked about the importance of religion and the rules of Islamic law in their life, using a 1-5 Likert scale. The survey also asked customers to rank the relative importance of family, work, friends and religion. Because of the small sample size of the survey, we cannot directly use this measure to assess the individual-level heterogeneity of treatment effects.<sup>42</sup> Instead, we use it to construct province-level indicators of religiosity. To do so, we split the sample according to the share of respondents who identified as very religious in each province and compare treatment effects for customers in locations classified as more or less religious according to this measure.<sup>43</sup> In the less religious half of provinces, the moral message (all versions) increased repayment rates by 3.8 percentage points, or by 11% (p-value=0.003). In the more religious half of provinces, the effect of the moral message was significantly larger, with an additional 4.7 percentage point increase in the likelihood of repayment. The p-value of the interaction between the moral message and a dummy

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<sup>41</sup>None of the customers in this sample had previously received any of the moral incentive text messages.

<sup>42</sup>This survey was administered to 2,840 customers. Among them 2,273 participants of our experiment and 567 randomly selected customers of the bank that did not participate in the experiment.

<sup>43</sup>Customers are identified as very religious if they answered “Extremely Important” to both the question about religion and the question about the rules of *Shari’a* law, and if they ranked religion as the most important thing in their life among all the choices given.

for local religiosity above the median is 0.047.<sup>44</sup> Interestingly, these patterns are similar for the religious, implicit, and non-religious version of the moral message. This suggests that customers in more religious regions may be more responsive to moral appeals in general, but supports the conclusion that the effect of the moral appeal is not driven by religion.

#### 4.1.2 Provision of New Information? The Impact of Repeated Messages

We also explore whether the moral message works only when it is sent for the first time – for example, because it conveys new information – or if it works if it is sent to customers who have received the message before. To address this question, we conducted a follow-up experiment with a sample of customers who had already received the moral message once and reappeared on the list of late payers. In February and April 2016, customers in this group were either sent the same version of the moral message that they had previously received for a second time, with a lag of either two months or approximately one year, or were assigned to a control group that received no additional message.

Table 6 reports the results, pooling across different versions of the moral incentive messages. We find suggestive evidence that repeated moral messages still affect repayment, and that the size of the effect is not lower among customers to whom the moral message is sent for a second time. In the specification without individual covariates and month fixed effects, reported in Table 6, column (1), the effect of the repeated moral message is 0.041 (p-value 0.175).<sup>45</sup>

We next compare the effects of the first and the second moral messages. In order to do so, we pool the sample from the repeated message experiment with the data from the main experiment. This requires some caution, since there are likely to be selection issues. In particular, customers who show up on the list of late payers for a second time are likely to be different from those who appear on the list for the first time. Indeed, we find that while the two samples are well balanced on demographics, customers in the repeated message sample have lower income and credit limits, and are more likely to have been more than thirty day past due at least once in the previous year.<sup>46</sup> For this reason, it is important to include individual covariates to address this potential selection

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<sup>44</sup>We find the same result using data from the *Indonesian Family Life Survey* (IFLS). Using responses to the question “How religious are you?” we built a similar measure of local religiosity and ranked provinces with respect to the proportion of respondents who describe themselves as “very religious”. The results are quite similar: the moral message leads to a 3 percentage point increase in repayment (a 9% increase compared to the control group) in the less religious half of provinces (p-value=0.104), and an additional 3 percentage point increase in the more religious half of provinces (an 18% increase compared to the control group). The p-value of the interaction between the moral incentive treatment and a dummy for local religiosity above the median is 0.131.

<sup>45</sup>There is suggestive evidence that the effects do not vary depending on the time lag between the first and the repeated message. Sending the moral message to customers who already received the same message one year before increases repayment by 0.040 compared to sending no message (p-value 0.323). Sending a moral message to customers who received the same message two months before increases repayment by 0.044 compared to sending no message (p-value 0.346). However, the sample sizes are too small to estimate effects separately by time since the first message.

<sup>46</sup>See Appendix Table A.5 for details.

problem.<sup>47</sup> The results are reported in Table 6, column (4). The point estimate of receiving the moral message for the first time is 0.045. With a point estimate of 0.043, the effect of receiving the moral message for a second time is nearly identical, and both effects are statistically significant. The p-value of a test of equality of the two effects is 0.955.<sup>48</sup>

The result that the moral message affects repayment even when it is sent repeatedly rules out the possibility that the message affects repayment by conveying new information. The finding that even a moral message with no reference to religion affects repayments already indicates that the effect is not driven by the recipient learning about a religious teaching that they were not previously aware of. Similarly, the effect cannot be explained by the customer learning that non-repayment of debts can be considered immoral. In both cases, the message would affect repayment only when this information is conveyed to a delinquent customer for the first time. Though we cannot directly test for it, our results are consistent with an inattention interpretation, in which the moral incentive message temporarily draws customers' attention to the moral dimension of the repayment decision.

## 4.2 Disutility from Receiving the Message

The results indicate that moral incentives are effective at getting customers to repay their credit card debt. However, so far, it is unclear if this comes at a utility cost to customers. To answer this question, in the last month of the intervention the bank called back customers who had received either the simple reminder or one of the versions of the moral incentive message as part of a follow-up survey one business day after messages had been sent out (messages were sent on Friday and surveys were conducted the next Monday). These customers were asked the question “[Bank name] is sending reminder messages to its customers to help them make their payment on time. You received one of this messages last week. Would you like to receive the same message again in the future?” The percentage of customers who reported that they would like to receive the message again was 80% among those who had just received a placebo reminder, and also 80% among those who had received one of the variations of the moral message. The fact that a large majority of customers would like to receive a similar message again suggests that receiving a moral appeal does not create disutility to the recipients. Moreover, receiving a message containing a moral appeal

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<sup>47</sup>Another possible concern is the presence of differential selection due to the treatment. However, we do not find any evidence of this type of selection: the proportion of customers showing up on the list of late payers a second time in 2016 after having appeared in the sample of our main experiment in 2015 is .251 among those receiving a moral message and .242 among controls (p-value of the difference .345). So, the fact of being late again after a few months from our intervention is likely due to some negative shock independent of treatment status (possibly a negative income or liquidity shock, which is in line with these customers having lower income, credit limit and being more likely to have been more than 30 days past due in the past).

<sup>48</sup>Note that here we are attempting to compare the size of the effect of a message sent to customers who have never seen it before and are late for a first time, to the size of the effect in the (selected) sample of customers who have seen the message before and are late a second time. While both estimates can be interpreted causally, we cannot causally evaluate the effect of repeated messages on the non-selected sample since no further messages are sent to customers who are not late a second time.

does not seem to create differential disutility, compared to a simple reminder.

As an additional test, we also examine whether sending a moral appeal could negatively affect the bank by reducing card usage or transaction volumes (perhaps because customers are dissatisfied with the bank after receiving the message, or want to avoid receiving a similar moral appeal in the future). We find that this is not the case. In the 30-day window after the intervention, the average amount spent is Rp 1,217,169 for customers that received the moral message, and Rp 1,260,626 for customers in the control group (p-value 0.699). The probability of card usage during this time period is .448 and .441 respectively (p-value 0.691).<sup>49</sup>

## 4.3 Additional Results and Extensions

### 4.3.1 Impact in Later Months

We next examine the persistence of the moral message effect in the sample of customers that received the moral message only once, restricting ourselves to the waves of the experiment conducted in 2015.

It is first worth noting that a sizable share of customers who are late in making repayments in a given month during our sample period appear again in the list of late-paying clients a month later. Among clients in the control group, the average probability of showing up in the list the following month is 0.31. There is also some evidence of income effects: individuals in the control group who make a payment are 7 percentage points more likely to appear again on the list of delinquent customers, than individuals who do not make a payment.

One obstacle we face when trying to examine the persistence of the moral incentive effects is the fact that we no longer have full experimental control after the repayment deadline. Once the deadline has passed, customers that have not made a payment are reported to the credit registry and the bank's collection team attempts to call delinquent clients. It is possible that customers react differently to a given phone call if they have previously received a treatment. Moreover, the bank itself can exert differential effort in calling different clients from different treatment arms. For instance, the bank might be more likely to call clients in the control group, or treatment groups with lower average repayment. Since we have no information on follow-up calls and effort by the bank after the deadline, any outcomes observed after the repayment deadline may not be causal and should be interpreted with caution.

With this caveat in mind, we can still attempt to assess whether the moral messages sent as part of our experiment had a persistent effect. Note that by raising the repayment rate at a given point in time, the moral incentive message may generate two counteracting effects on repayment in later months: First, it might be that the moral message generates greater incentives to make a payment in the month when it is received and in the following month. That is, the moral incentives themselves might be persistent. Second, an extra incentive to repay right away may also generate

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<sup>49</sup>These results also hold for different time windows after receiving the message.

an income effect when compared to the control.<sup>50</sup> That is, the moral message will induce more clients to make a payment in the month the message is received, so that some of them may be less able to repay one month later. The impact of the treatment we observe in the months after the treatment is the combination of these two effects.

We observe that the likelihood of appearing again in the late paying list one month later is 1 percentage point higher for clients who received the moral incentive message the previous month (the difference is not statistically significant). Although we cannot isolate persistent effects of the moral message from income effects, we can still try to infer the size of these effects and assess the likelihood of finding persistent effects of the moral message in the absence of income effects. To approximate the size of income effects, we multiply the increase in the probability of repayment due to the moral incentive treatment by the increase in the probability of being late the next month after repaying in the control group. Abstracting from selection issues, we find that income effects can account for up to a 0.4 percentage point increase in the probability of late payment the following month in the moral incentive group, compared to the control. Subtracting this number from the higher likelihood of showing up in the list of late-payers the following month for the moral incentive group yields a persistent effect that is close to zero. Although we cannot make sharp predictions, the evidence suggests that the moral incentive effects did not persist until the following month. This is consistent with the interpretation that the moral appeals sent as part of our experiment affect repayment by highlighting the moral component of the repayment decision, thus temporarily drawing customers' attention to moral considerations.

### 4.3.2 Impact on Savings Account Balances

To better understand how customers make payments in response to the experimental treatments, we next examine the effect of repayment on savings account balances. For this purpose, we obtained detailed data on savings account balances for participants of our experiment from our partner bank. We have access to customers' daily balances on their *tabungan* (Indonesian for "savings") accounts. These are the most common type of deposit account among clients of our partner bank, and have all characteristics of a standard liquid savings account. Since credit card customers are not required to also have another account with the bank, savings account balances are available for only 13% of customers in our sample, which may give rise to selection issues.

We find that meeting the minimum payment increases the likelihood of a reduction in customers' savings account balances, suggesting that customers are using their savings account balances to repay more expensive credit card debt. More specifically, among those who met their minimum repayments in response to receiving one of our messages, 22% reduced their savings account balance between the sixteenth and eighteenth day of the month. Among those who did not repay, only 8%

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<sup>50</sup>We can rule out the possibility that the absence of persistent effects is driven by the fee structure of the card. Late fees are increasing in the number of days past due, but there are no escalating penalties for being late repeatedly.

had a reduction of their savings account balance over the same time period. The difference is significant at the 1 percent level ( $p$ -value=0.000). However, we do not have sufficient statistical power to detect differences in savings balances across the treatment arms of our intervention, so that we consider this evidence as merely suggestive.

### 4.3.3 Impact on the Intensive Margin of Repayment

We can further unpack the mechanism through which moral incentives affect behavior by examining the intensive margin of repayment, that is, the amount repaid conditional on meeting the minimum payment. Since each of our treatments may induce a different subset of consumers to repay, looking at the intensive margin of repayment in isolation induces selection problems. In fact, because customers with a lower average willingness to repay might make a payment if they were included in one of the moral incentive treatment groups, a simple comparison between treatment and control groups would most likely understate the intensive margin effect.

To avoid this selection problem, we impute zeros for all customers who did not make a payment and analyze the combined effect of our treatments on the intensive and extensive margin. These are unconditional means, and therefore *not* subject to selection issues. The average amount repaid in the control group is Rp 637,819, and expected repayment in the moral incentive group is slightly higher than in the reputational incentive group at Rp 745,352 versus Rp 713,437 ( $p$ -value=0.65).<sup>51</sup> The share of customers that repay substantially more than, i.e. more than twice, the amount required to avoid being reported to the credit registry is significantly higher in the moral incentive group, compared to the reputational message group (23% versus 19%,  $p$ -value=0.08). This result suggests that customers in the reputational incentive treatment act much more strategically in response to the message, and are more likely to repay only the required 10% of their outstanding balance. In contrast, customers receiving the moral message are more likely to repay an amount significantly higher than the minimum payment, required not to be reported to the credit registry.

Therefore, while the effect of the reputational message on the extensive margin is slightly larger than that of the moral incentive, their effect on the intensive margin of repayment differs. There are two possible channels at play: moral hazard and adverse selection. With moral hazard, ex-ante identical individuals will respond differently to each message. For example, after receiving a message stating that the bank reports all customers who fail to meet the minimum payment to the credit registry, an individual may exert effort to meet the minimum payment (but will not make a payment exceeding this amount). On the other hand, that same individual may decide to repay even more than the required minimum amount after being reminded of the injustice of failing to repay her debt. In the presence of adverse selection, individuals who respond to each

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<sup>51</sup>For these comparisons, we restrict the sample to customers late in February, March and May 2015 since there are the only months when the reputational incentive message was sent. If we consider the whole sample, the average amount repaid in the control group is Rp 615,835 and in the moral incentive group is Rp 725,169

message are different ex-ante. For example, customers who respond to the threat of being reported to a credit registry may be more strategic to begin with.<sup>52</sup> Since meeting the minimum repayment is voluntary, we cannot disentangle moral hazard from adverse selection in our setting. Note, however, that while moral hazard and adverse selection have different welfare implications, they have the same implication for the effectiveness of moral and material incentives in our setting: while material incentives are effective in inducing people to meet the minimum payment, few people pay more than the minimum. In contrast, moral incentives induce slightly fewer people to meet the minimum repayment. However, more of those who repay exceed the minimum required amount.

## 5 Conclusion

While moral considerations may influence many important economic decisions, economists have typically focused on monetary incentives as the main determinant of behavior.

In this paper, we provide evidence that non-pecuniary moral incentives can strongly affect a financially important and recurrent economic choice: the decision to repay one’s debts. In our setting, moral appeals are more effective than substantial monetary incentives as a means to encourage debt repayment. We find that the impact of our intervention on behavior is driven by responses to the moral appeal and use a number of placebo treatments to rule out competing explanations, such as reminder effects, novelty of the message, priming religion, signaling the lender’s commitment to debt collection, and the provision of new information.

In our setting – an Islamic credit card –, moral appeals similar to the ones we study are natural and common. This allows us to design a real-stakes experiment in which we exogenously vary the religious content of the moral appeal, so that it is possible to experimentally isolate the response to the moral appeal from the response to its religious context. We find that changing the religious content of the appeal has no effect on repayment. In particular, non-religious messages similar to messages used by commercial banks in other settings also encourage debt repayment.

These findings are consistent with the idea that, even in the case of financial decisions, people experience a cost from consciously violating a moral norm. A moral appeal can therefore affect behavior, even when it is not associated with an explicit threat of punishment or negative financial consequences. The relative importance of monetary and non-monetary considerations in such decisions is of course context-dependent. Studying how moral incentives operate in other settings is therefore an important avenue for future research.

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<sup>52</sup>See, for example, [Einav et al. \(2013\)](#) for evidence of such “selection on moral hazard” in health insurance.

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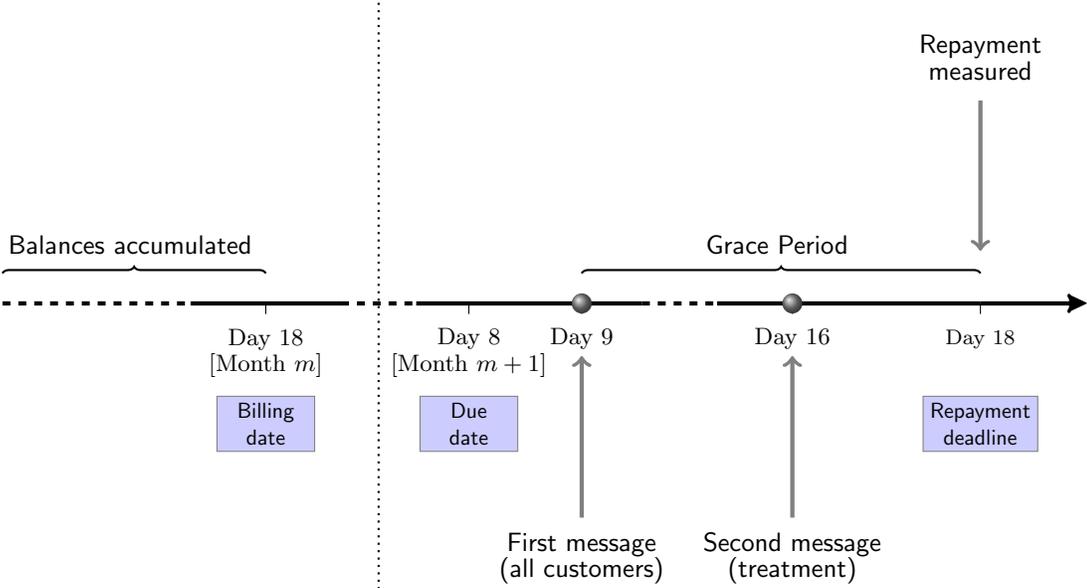
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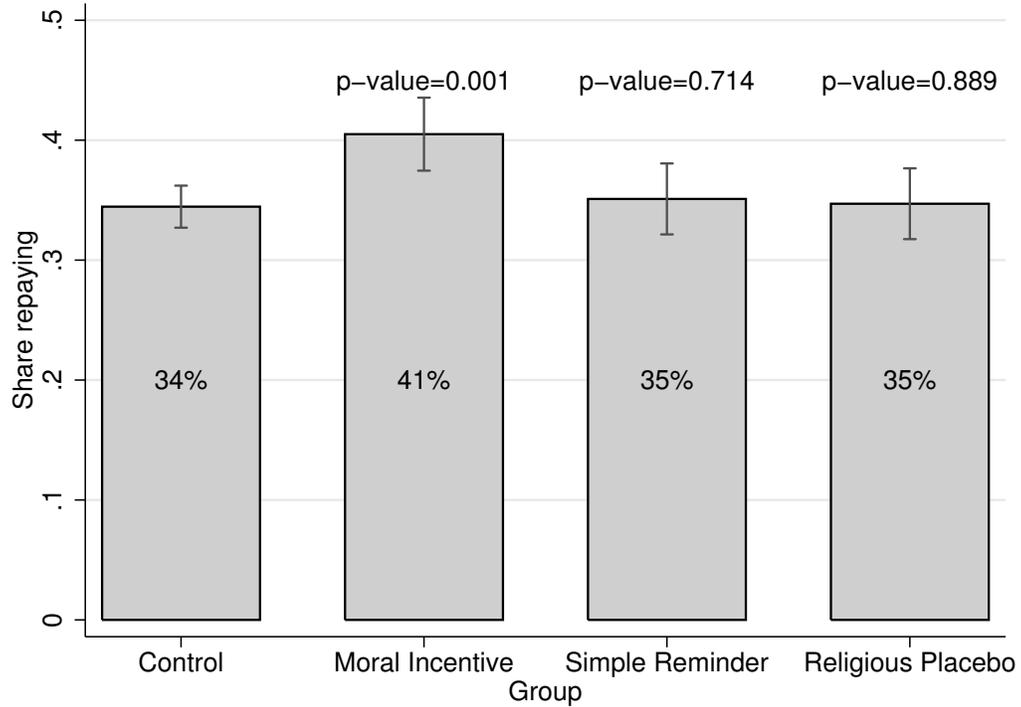
# Figures and Tables

Figure 1: **Timeline of Events**



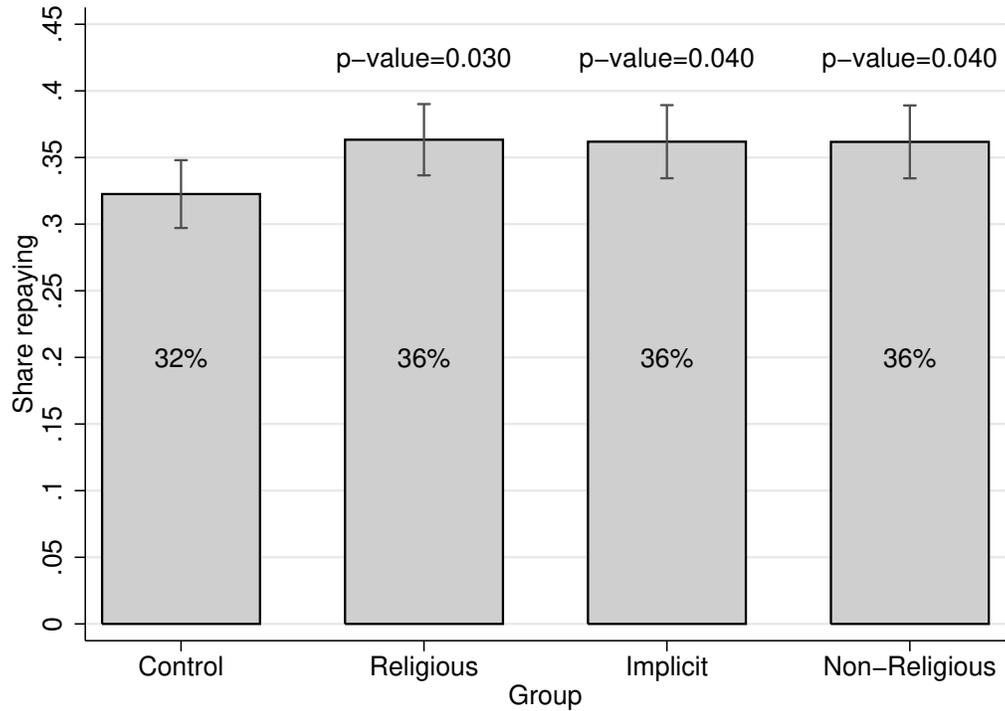
*Notes:* The figure shows the credit card billing cycle and timing of the intervention. Customers receive their monthly statement on the *eighteenth* day of each month. The due date is on the *eight* day of the following month. One day later, the bank sends a simple reminder message to *all* late-paying customers. The repayment deadline is on the *eighteenth* day of the month, at the end of a 10-day grace period. In the morning of the *sixteenth* day of the month (two days before the repayment deadline), randomly assigned reminder messages are sent to customers assigned to one of the treatment groups. Repayment is observed at the time of the final deadline, which is midnight of the *eighteenth* day of the month.

Figure 2: **Treatment Effects**



*Notes:* This figure presents the means and 95 percent confidence intervals of the raw repayment rates for the sample of customers assigned to one of the four following groups: control, moral incentives, simple reminder, and religious placebo (these two treatments have not been run simultaneously in Waves IV, V and VI, so customers late in June 2015, and February and April 2016 are excluded from the sample analyzed in this figure). There are 1000 observations in each of the treatment groups, and 2821 customers in the control group. For each treatment we report the  $p$ -value of a test of equality of the means in the treatment and in the control.

Figure 3: What Drives the Moral Appeal? Religious Connotation



*Notes:* This figure presents the means and 95 percent confidence intervals of the raw repayment rates for the sample of customers assigned to one of the four following groups: control, religious moral incentives, implicit moral incentives, and non-religious moral incentives (these last two treatments have been run only in Waves IV, V, and VI, so customers late in February, March, and May 2015 are excluded from the sample analyzed in this figure). There are respectively 1244, 1186, and 1180 observations in the religious moral incentives, implicit moral incentives, and non-religious moral incentive treatment groups, and 1299 customers in the control group. For each treatment we report the *p*-value of a test of equality of the means in the treatment and in the control.

Table 1: Balance and Treatment Cell Size

<i>Panel A1: Waves I, II, and III Balance of Covariates</i>							
	Full Sample	Moral Incentive	Simple Reminder	Religious Placebo	Credit Reputation	Control Group	<i>p</i> -value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age	42.03 [9.071]	42.36 [9.317]	42.10 [8.776]	41.73 [8.717]	41.99 [9.092]	42.03 [9.195]	0.631
Female	0.40 [0.489]	0.40 [0.490]	0.41 [0.491]	0.41 [0.491]	0.39 [0.488]	0.40 [0.489]	0.914
Muslim	0.92 [0.273]	0.92 [0.271]	0.91 [0.286]	0.91 [0.289]	0.92 [0.271]	0.92 [0.264]	0.427
Annual Income (Rp, million)	151.67 [836.968]	135.51 [175.295]	185.73 [1242.218]	134.86 [187.644]	177.65 [1369.992]	132.85 [201.640]	0.418
Credit Limit (Rp, million)	13.55 [9.338]	13.93 [9.708]	13.28 [8.652]	13.77 [9.444]	13.38 [9.272]	13.55 [9.448]	0.438
<i>Panel A2: Waves I, II, and III Treatment Cell Size</i>							
Wave I	2871	400	400	400	800	871	
Wave II	2985	400	400	400	800	985	
Wave III	1965	200	200	200	400	965	
Total	7821	1000	1000	1000	2000	2821	
<i>Panel B1: Wave IV Balance of Covariates</i>							
	Full Sample	Moral Incentive [Religious]	Moral Incentive [Implicit]	Moral Incentive [Non-Religious]	Cash Rebate	Control Group	<i>p</i> -value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age	42.24 [9.491]	41.82 [9.170]	42.70 [9.415]	41.98 [9.137]	42.31 [9.196]	42.38 [10.477]	0.764
Female	0.39 [0.488]	0.42 [0.494]	0.38 [0.486]	0.38 [0.487]	0.37 [0.482]	0.40 [0.490]	0.703
Muslim	0.92 [0.271]	0.93 [0.253]	0.91 [0.281]	0.90 [0.302]	0.93 [0.253]	0.92 [0.265]	0.517
Annual Income (Rp, million)	134.64 [189.589]	121.99 [192.350]	132.46 [154.065]	138.35 [187.183]	152.25 [233.037]	128.27 [172.253]	0.345
Credit Limit (Rp, million)	13.56 [9.834]	13.15 [10.587]	13.13 [9.360]	14.20 [9.525]	13.87 [9.867]	13.44 [9.803]	0.569
<i>Panel B2: Wave IV Treatment Cell Size</i>							
Wave IV	1687	336	336	336	336	343	
Total	1687	336	336	336	336	343	
<i>Panel C1: Wave V and VI Balance of Covariates</i>							
	Full Sample	Moral Incentive [Religious]	Moral Incentive [Implicit]	Moral Incentive [Non-Religious]	Simple Reminder	Control Group	<i>p</i> -value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age	41.61 [9.722]	41.73 [10.093]	41.80 [9.481]	41.36 [9.639]	40.95 [9.954]	41.79 [9.562]	0.557
Female	0.39 [0.488]	0.41 [0.492]	0.37 [0.483]	0.40 [0.489]	0.43 [0.496]	0.36 [0.481]	0.087
Muslim	0.90 [0.306]	0.88 [0.326]	0.90 [0.295]	0.92 [0.279]	0.88 [0.321]	0.89 [0.314]	0.087
Annual Income (Rp, million)	158.51 [966.064]	141.85 [556.385]	205.76 [219.339]	159.15 [1942.643]	160.08 [609.755]	131.45 [184.891]	0.379
Credit Limit (Rp, million)	13.87 [10.257]	13.68 [10.143]	14.00 [10.037]	13.73 [10.530]	13.59 [9.967]	14.17 [10.441]	0.786
<i>Panel C2: Wave V and VI Treatment Cell Size</i>							
Wave V	2106	546	482	488	0	590	
Wave VI	1814	362	362	362	362	366	
Total	3920	908	850	844	362	956	

Notes: Panel A1 reports summary statistics for the sample and presents a test of random assignment for waves I, II, and III. Column (1) reports the mean level of each variable, with standard deviations in brackets, for the full sample. Columns (2) to (6) report the mean level of each variable, with standard deviations in brackets, for all the experimental conditions. Column (7) reports the *p*-value of a test that means are the same in all the experimental conditions. Panel A2 reports treatment cell sizes by month. Panels B1 and B2 replicate this for wave IV. Panels C1 and C2 replicate for waves V and VI.

Table 2: **Moral Incentive Effects**

Dependent variable	Dummy: customer repaid within the deadline		
	(1)	(2)	(3)
Moral Incentive	0.044*** [0.013]	0.052*** [0.013]	0.051*** [0.013]
Mean Repayment Control Group		0.34	
Month fixed effects	No	Yes	Yes
Controls	No	No	Yes
Waves	All Waves	Full Sample	Full Sample
N	6364	13428	13428
$R^2$	0.002	0.011	0.057

*Notes:* Column (1) restricts the sample to customers assigned to the moral incentive treatment or to the control group. Column (2) and (3) use the whole sample. Column (1) presents OLS regression of a dummy variable for whether a customer repaid her credit card debt (made at least the minimum payment) within the deadline on treatment group dummies. The control is the omitted group, for which we report the mean repayment rate. Column (2) replicates and adds month fixed effects. Column (3) replicates and adds individual covariates (age, gender dummy, Muslim dummy, province dummy, income, a dummy for being in the sample in a previous month, and a dummy for having been more than 30 days past due at least once in the previous 12 months). Robust standard errors in brackets. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

Table 3: **Benchmarking Moral Incentives: Cash Rebate and Credit Reputation**

Dependent variable	Dummy: customer repaid within the deadline			
	(1)	(2)	(3)	(4)
Moral Incentive	0.054 [0.036]	0.060*** [0.018]	0.052*** [0.013]	0.051*** [0.013]
Cash Rebate	0.021 [0.035]		0.014 [0.030]	0.003 [0.029]
Credit Reputation		0.098*** [0.014]	0.102*** [0.014]	0.104*** [0.013]
Moral Incentive - Cash Rebate	0.033 [0.036] (0.185)		0.038 [0.030] (0.104)	0.047 [0.029] (0.055)
Moral Incentive - Credit Reputation		-0.038** [0.019]	-0.051** [0.016]	-0.053*** [0.016]
Mean Repayment Control Group	0.30		0.34	
Month fixed effects	No	No	Yes	Yes
Controls	No	No	No	Yes
Waves	Only Wave IV	Waves I, II, and III	Full Sample	Full Sample
N	1015	5821	13428	13428
$R^2$	0.002	0.008	0.011	0.057

*Notes:* Column (1) restricts the sample to customers late in June 2015 and assigned to one of the three following groups: moral incentives, financial incentives (this treatment has been run only in Wave IV) and control. Column (2) restricts the sample to customers late in February, March or May 2015 and assigned to one of the three following groups: moral incentives, reputational incentives (this treatment has not been run in waves IV, V and VI) and control. Column (3) and (4) use the whole sample. Column (1) and (2) present OLS regression of a dummy variable for whether a customer repaid her credit card debt (made at least the minimum payment) within the deadline on treatment group dummies. The control is the omitted group, for which we report the mean repayment rate. Column (3) replicates and adds month fixed effects. Column (4) replicates and adds individual covariates (age, gender dummy, Muslim dummy, province dummy, income, a dummy for being in the sample in a previous month, and a dummy for having been more than 30 days past due at least once in the previous 12 months). “Moral Incentive - Cash Rebate” gives the difference between the coefficient on “Moral Incentive” and the coefficient on “Cash Rebate.” P-value for the test of inequality “Moral Incentive < Cash Rebate” in parenthesis. “Moral Incentive - Credit Reputation” gives the difference between the coefficient on “Moral Incentive” and the coefficient on “Credit Reputation.” Robust standard errors in brackets. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

Table 4: **Ruling Out Other Channels**

Dependent variable	Dummy: customer repaid within the deadline		
	(1)	(2)	(3)
Moral Incentive	0.060*** [0.018]	0.052*** [0.013]	0.051*** [0.013]
Simple Reminder	0.006 [0.018]	0.023 [0.015]	0.022 [0.015]
Religious Placebo	0.002 [0.018]	0.006 [0.017]	0.010 [0.017]
Moral Incentive - Simple Reminder	0.054** [0.022]	0.029* [0.017]	0.028* [0.017]
Moral Incentive - Religious Placebo	0.058*** [0.022]	0.045** [0.019]	0.041** [0.019]
Mean Repayment Control Group		0.34	
Month fixed effects	No	Yes	Yes
Controls	No	No	Yes
Waves	Waves I, II, and III	Full Sample	Full Sample
N	5821	13428	13428
$R^2$	0.002	0.011	0.057

*Notes:* Column (1) excludes customers late in June 2015, February 2016 and April 2016, and restricts the sample to customers assigned to one of the four following groups: moral incentives, simple repayment reminder, religious placebo (these treatments have not been run simultaneously in Wave IV, V and VI) and control. Column (2) and (3) use the whole sample. Column (1) presents OLS regression of a dummy variable for whether a customer repaid her credit card debt (made at least the minimum payment) within the deadline on treatment group dummies. The control is the omitted group, for which we report the mean repayment rate. Column (2) replicates and adds month fixed effects. Column (3) replicates and adds individual covariates (age, gender dummy, Muslim dummy, province dummy, income, a dummy for being in the sample in a previous month, and a dummy for having been more than 30 days past due at least once in the previous 12 months). “Moral Incentive - Simple Reminder” gives the difference between the coefficient on “Moral Incentive” and the coefficient on “Simple Reminder.” “Moral Incentive - Religious Placebo” gives the difference between the coefficient on “Moral Incentive” and the coefficient on “Religious Placebo.” Robust standard errors in brackets. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

Table 5: **What Drives the Moral Appeal? Religious Connotation**

Dependent variable	Dummy: customer repaid within the deadline		
	(1)	(2)	(3)
Moral Incentive	0.041** [0.019]	0.051*** [0.013]	0.051*** [0.013]
Implicit Moral Incentive	0.039** [0.019]	0.041** [0.018]	0.039** [0.018]
Non-Religious Moral Incentive	0.039** [0.019]	0.040** [0.018]	0.038** [0.017]
Moral Incentives - Implicit Moral Incentive	0.001 [0.019]	0.011 [0.018]	0.011 [0.018]
Moral Incentives - Non-Religious Moral Incentive	0.002 [0.020]	0.011 [0.018]	0.012 [0.017]
Mean Repayment Control Group	0.32		0.34
Month fixed effects	No	Yes	Yes
Controls	No	No	Yes
Waves	Wave IV, V, and VI	Full Sample	Full Sample
N	4909	13428	13428
$R^2$	0.001	0.011	0.057

*Notes:* Column (1) restricts the sample to customers late in June 2015, February 2016 or April 2016 and assigned to one of the four following groups: moral incentives, moral incentives without quoting the Prophet, moral incentives without religion connotation (these last two treatments have been run only in Wave IV, V, and VI) and control. Column (2) and (3) use the whole sample. Column (1) presents OLS regression of a dummy variable for whether a customer repaid her credit card debt (made at least the minimum payment) within the deadline on treatment group dummies. The control is the omitted group, for which we report the mean repayment rate. Column (2) replicates and adds month fixed effects. Column (3) replicates and adds individual covariates (age, gender dummy, Muslim dummy, province dummy, income, a dummy for being in the sample in a previous month, and a dummy for having been more than 30 days past due at least once in the previous 12 months). “Moral Incentives - Implicit Moral Incentive” gives the difference between the coefficient on “Moral Incentives” and the coefficient on “Implicit Moral Incentive.” “Moral Incentives - Non-Religious Moral Incentive” gives the difference between the coefficient on “Moral Incentives” and the coefficient on “Non-Religious Moral Incentive.” Robust standard errors in brackets. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

Table 6: **The Effect of Repeated Moral Messages**

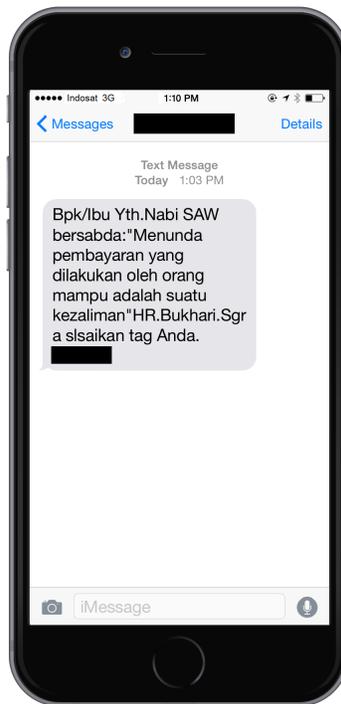
Dependent variable	Dummy: customer repaid within the deadline			
	(1)	(2)	(3)	(4)
Repeated Moral Incentive	0.041 [0.030]	0.041 [0.030]	0.036 [0.031]	0.043* [0.025]
First Moral Incentive				0.045*** [0.011]
Repeated Moral Incentive - First Moral Incentive				-0.001 [0.025]
Mean Repayment Control Group		0.30		0.33
Month fixed effects	No	Yes	Yes	Yes
Controls	No	No	Yes	Yes
Waves	Waves V and VI	Waves V and VI	Waves V and VI	Full Sample
N	898	898	898	14326
$R^2$	0.002	0.006	0.071	0.056

*Notes:* Column (1), (2) and (3) restrict the sample to customers part of the follow-up experiment, that is customers late in February 2016 or April 2016 and treated in a previous wave with a moral message. Column (4) uses the whole sample (both the main experiment sample and the follow-up experiment sample). Column (1) presents OLS regression of a dummy variable for whether a customer repaid her credit card debt (made at least the minimum payment) within the deadline on a dummy for having received one of the three version of the moral message after being treated in a previous wave with the same moral message. The control is the omitted group, for which we report the mean repayment rate. Column (2) replicates and adds month fixed effects. Column (3) replicates and adds individual covariates (age, gender dummy, Muslim dummy, province dummy, income, a dummy for being in the sample in a previous month, and a dummy for having been more than 30 days past due at least once in the previous 12 months). Column (4) replicates, adds a dummy for having received one of the three version of the moral message for the first time, and other treatment group dummies. “Repeated Moral Incentive - First Moral Incentive” gives the difference between the coefficient on “Repeated Moral Incentive” and the coefficient on “First Moral Incentive.” P-value for the test of inequality “Moral Incentive < Cash Rebate” in parenthesis. Robust standard errors in brackets. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

## Supplemental Appendix

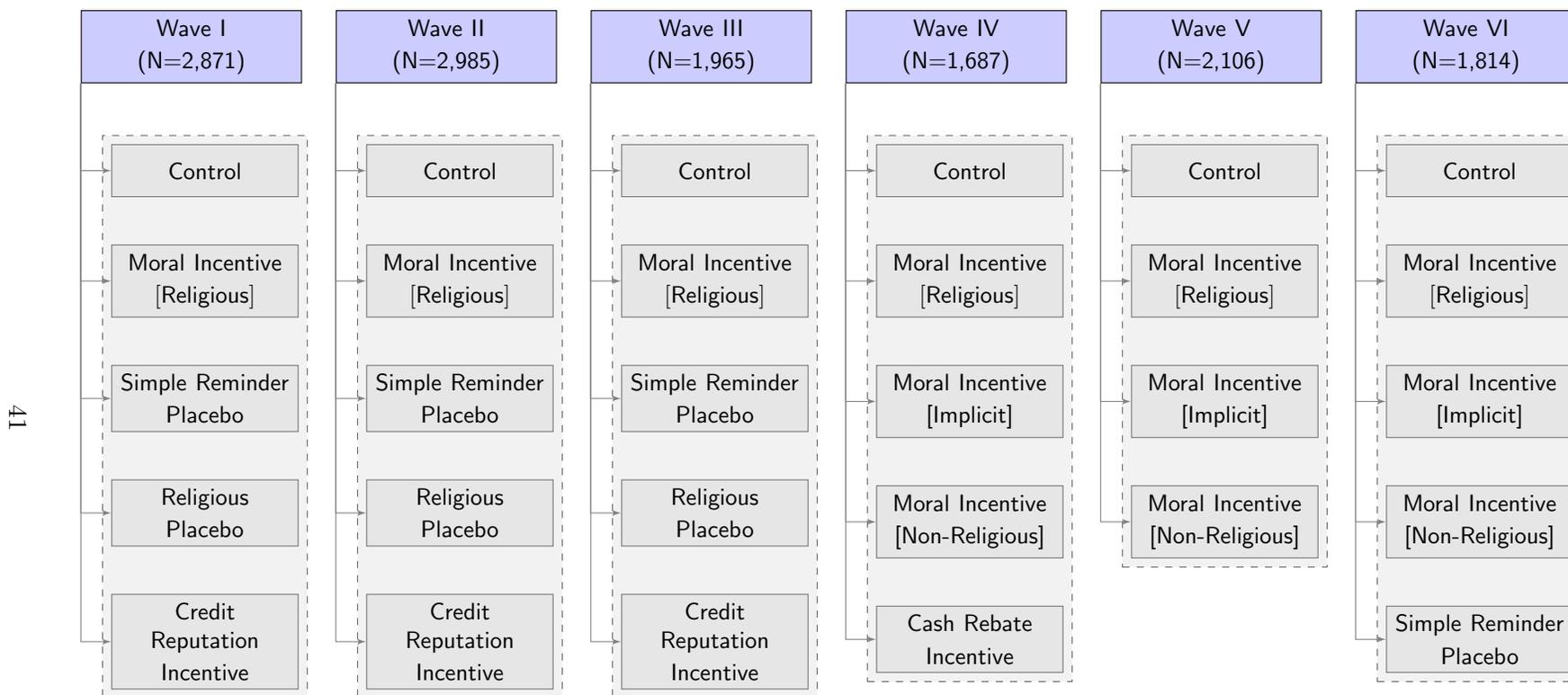
### Appendix Figures

Figure A.1: Text Messages



Notes: The figure shows the text message sent to experimental participants assigned to the “*moral incentive*” treatment condition.

Figure A.2: **Experimental Design**



*Notes:* The figure summarizes the experimental design. The main experiment was conducted in four waves, coinciding with the monthly credit card repayment cycle, between February 2015 and April 2016. Waves I and II were conducted February and March 2015. Waves III and IV were conducted in May and June 2015. A follow-up experiment, consisting of waves V and VI, was conducted in February and April 2016. Within each wave of the experiment, credit card customers that had not made their minimum required payment by the due date were randomly and individually assigned to the treatment conditions shown in the figure.

## Appendix Tables

Table A.1: **Sample Sizes by Wave**

	Treated (1)	Control (2)	Repeated (3)	Excluded (4)	Other Project (5)	Total (6)
Wave I	2000	871	0	83	800	3754
Wave II	2000	985	0	1018	800	4803
Wave III	1000	965	0	1823	600	4388
Wave IV	1344	343	0	1652	0	3339
Wave V	1516	590	306	1075	0	3487
Wave VI	1448	366	592	1343	0	3749
Total	9308	4120	898	6994	2200	23520

*Notes:* Columns (1) and (2) show the number of customers randomized into treatment and control for the main experiment. Column (3) reports the number of customers who were randomized into treatment and control for the follow-up experiment on the effect of repeated messages. Column (4) reports the number of customers excluded because they had previously received a text message treatment. Customers assigned to the control group in a previous month remained in the sample and could either be assigned to a treatment or be again in the control group. Column (5) reports the number of customers randomized into treatment for a different project. Column (6) reports the total number of late customers.

Table A.2: **Repeated Message Experiment: Balance and Treatment Cell Size**

<i>Panel A: Balance of Covariates</i>				
	Full Sample (1)	Repeated Moral Incentive (2)	Control Group (3)	<i>p</i> -value (4)
Age	42.29 [9.375]	42.43 [9.375]	42.15 [9.384]	0.653
Female	0.41 [0.492]	0.44 [0.497]	0.38 [0.486]	0.080
Muslim	0.90 [0.296]	0.91 [0.282]	0.89 [0.309]	0.321
Annual Income (Rp, million)	126.72 [206.906]	124.07 [171.322]	129.35 [237.255]	0.702
Credit Limit (Rp, million)	13.10 [9.386]	13.38 [9.445]	12.82 [9.329]	0.368
<i>Panel B: Treatment Cell Size</i>				
Wave V	306	153	153	
Wave VI	592	295	297	
Total	898	448	450	

*Notes:* Panel A reports summary statistics for the follow-up experiment and presents a test of random assignment. Column (1) reports the mean level of each variable, with standard deviations in brackets, for the full sample. Columns (2) and (3) report the mean level of each variable, with standard deviations in brackets, for the two experimental conditions. Column (4) reports the *p*-value of a test that means are the same in the two experimental conditions. Panel B reports treatment cell sizes by month.

Table A.3: **Heterogeneity of Treatment Effects**

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Dummy: customer repaid by the deadline					
<i>Trait</i>	<i>Male</i>	<i>Age</i>	<i>Muslim</i>	<i>Local Religiosity</i>	<i>Debt to Income Ratio</i>	<i>Poor Credit History</i>
Trait*Moral Incentive	-0.012 [0.020]	-0.013 [0.020]	0.034 [0.035]	0.047** [0.023]	-0.040** [0.020]	0.003 [0.024]
Moral Incentive	0.057*** [0.017]	0.056*** [0.015]	0.018 [0.034]	0.038*** [0.013]	0.069*** [0.015]	0.049*** [0.012]
Trait	0.012 [0.015]	0.005 [0.021]	0.010 [0.026]	0.054 [0.060]	0.023 [0.014]	-0.222*** [0.017]
Month fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Waves	All	All	All	All	All	All
N	8,730	8,730	8,730	8,730	8,730	8,730
$R^2$	0.050	0.050	0.050	0.050	0.050	0.050

*Notes:* The table shows heterogeneous treatment effects for the moral message (all versions). Each column shows results from a separate regression. The dependent variable in all regressions is a dummy for whether a customer has made the minimum payment by the deadline. The dependent variable is regressed on a dummy equal to one if a customer has received any version of the moral incentive treatment, the trait indicated at the top of the table and their interaction. The dummy for age is equal to one for customers with age larger than the median. The dummy for local religiosity is equal to one for customers living in provinces where the measure of local religiosity is higher than the median at the province level. The dummy on debt to income ratio is equal to one for customers with a debt to income ratio larger than the median. The dummy on poor credit history is equal to one for customer reported to the credit registry at least once in the previous six months. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

Table A.4: **First Three Waves Including Crowding-Out Experiment**

Dependent variable	Dummy: customer repaid within the deadline		
	(1)	(2)	(3)
<i>Treatments: Main experiment</i>			
Moral Incentive	0.060*** [0.018]	0.065*** [0.018]	0.063*** [0.017]
Simple Reminder	0.006 [0.018]	0.011 [0.018]	0.010 [0.017]
Religious Placebo	0.002 [0.018]	0.007 [0.018]	0.008 [0.017]
Reputational Incentive	0.098*** [0.014]	0.103*** [0.014]	0.103*** [0.014]
<i>Treatments: Crowding-out experiment [multiple messages in one day]</i>			
Moral Incentive + Reputational Incentives	0.094*** [0.018]	0.099*** [0.018]	0.091*** [0.018]
Simple Reminder + Due Date Message	0.072*** [0.018]	0.077*** [0.018]	0.075*** [0.017]
Mean Repayment Control Group	0.34	0.34	0.34
Month fixed effects	No	Yes	Yes
Controls	No	No	Yes
Waves	Waves I, II, and III	Waves I, II, and III	Waves I, II, and III
N	9821	9821	9821
$R^2$	0.008	0.018	0.076

*Notes:* Column (1), (2), and (3) restricts the sample to customers late in February, March and May 2015 and includes two groups with customers receiving multiple text messages on the same day ("Due Date Message and Simple Reminder", and "Moral and Reputational Incentives"), in addition to the control group and all other treatments run in those months. Column (1) presents OLS regression of a dummy variable for whether a customer repaid her credit card debt (made at least the minimum payment) within the deadline on treatment group dummies. The control is the omitted group, for which we report the mean repayment rate. Column (2) replicates and adds month fixed effects. Column (3) replicates and adds individual covariates (age, gender, Muslim dummy, province dummy, income, a dummy for being in the sample in a previous month, and a dummy for having been more than 30 days past due at least once in the previous 12 months). \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

*Issues with the Crowding-Out Experiment:* The setup of this experiment differs from the treatments in this paper in that recipients were sent *multiple messages on the same day*. The main treatment for the crowding-out experiment involved sending the moral *and* reputational messages to clients on the 16th day of the month. We find that the effect of receiving the two messages is similar to the effect of receiving the reputational message only. This is consistent with a case of strong crowding-out, but also with a ceiling effect. We are therefore not able to separate these two stories. Before running the intervention, we decided to include another "placebo" group for this second paper: in case the two messages had an effect over and above the effect of the reputational incentive alone, in principle, this could be due to an effect of a receiving any second message on the same day (in addition to the reputational message). Since, however, the moral message had no effect on top the effect from the reputational message, *ex post* there was no real need for such placebo. In our design, we also had a placebo approach that was not ideal. The correct placebo would have been to send a neutral message in addition to the reputational message. Instead, the treatment implemented was to send two neutral messages on the same day, which complicates the interpretation. Aside from this design issue, there were also problems in the implementation of these treatments. Because the bank did not want to send two identical messages on the same day, one of the messages in the 'same day double reminder' group was a neutral reminder and the other one was the same message customers were used to receiving at the end of the billing cycle. As we later found out, this created confusion among customers who received both of these messages on the same day. Some customers erroneously believed that the bank had changed the billing cycle dates, or that they were at a later point in the billing cycle than was actually the case, since they had also received the standard end-of-billing cycle message. As a result, what we had intended as a placebo cannot really be interpreted as such. Since these treatments were part of a separate experiment and have a number of design and implementation issues, outlined above, these results were not part of our paper and we abandoned the idea of the crowding-out experiment altogether.

Table A.5: **First Time and Repeated Sample**

<i>Panel A: Balance of Covariates</i>			
	(1)	(2)	(3)
	First Message Sample	Repeated Message Sample	<i>p</i> -value
Age	41.93 [9.320]	42.29 [9.375]	0.267
Female	0.39 [0.489]	0.41 [0.492]	0.382
Muslim	0.91 [0.283]	0.90 [0.296]	0.376
Income (Rp, million)	151.52 [827.617]	126.72 [206.906]	0.013
Credit Limit (Rp, million)	13.64 [9.678]	13.10 [9.386]	0.092
30DPD in last year	0.29 [0.452]	0.39 [0.488]	0.000
Late once before	0.10 [0.298]	1.00 [0.000]	0.000
<i>Panel B: Treatment Cell Size</i>			
Wave I	2871	0	
Wave II	2985	0	
Wave III	1965	0	
Wave IV	1687	0	
Wave V	2106	306	
Wave VI	1814	592	
Total	13428	898	

*Notes:* Panel A reports summary statistics for the follow-up experiment and presents a test of random assignment. Column (1) reports the mean level of each variable, with standard deviations in brackets, for the full sample. Columns (2) and (3) report the mean level of each variable, with standard deviations in brackets, for the two experimental conditions. Column (4) reports the *p*-value of a test that means are the same in the two experimental conditions. Panel B reports sample sizes by month.

Table A.6: Text Messages

	<b>Bahasa Indonesia</b>	<b>English</b>
<b>Control: Basic Reminder</b>	Bpk/Ibu Yth. Tag [name of the card] Anda tih jth tempo. Utk kenyamanan & keleluasaan bertransaksi, segera lakukan pemby. Jk tih membayar, abaikan SMS ini.[customer service number]	Dear Mr/Mrs. Your [name of the card] has reached the due date. Please make a payment at your earliest convenience. If you have already paid, ignore this text. Call [customer service number].
<b>Moral Incentive [Religious]</b>	Bpk/Ibu Yth.Nabi SAW bersabda:”Menunda pembayaran yang dilakukan oleh orang mampu adalah suatu kezaliman”HR.Bukhari.Sgra slsaikan tag Anda.[customer service number]	Dear Mr/Mrs. The Prophet (Peace and blessings be upon Him) says: “non-repayment of debts by someone who is able to repay is an injustice” (Imam al-Bukhari). Please repay your credit card balance at your earliest convenience. Call [customer service number].
<b>Moral Incentive [Implicit]</b>	Bpk/Ibu Yth.Menunda pembayaran yang dilakukan oleh orang mampu adalah suatu kezaliman.Sgra slsaikan tag Anda.[customer service number]	Dear Mr/Mrs. Non-repayment of debts by someone who is able to repay is an injustice. Please repay your credit card balance at your earliest convenience. Call [customer service number].
<b>Moral Incentive [Non-religious]</b>	Bpk/Ibu Yth.Menunda pembayaran yang dilakukan oleh orang mampu adalah suatu ketidakadilan.Sgra slsaikan tag Anda.[customer service number]	Dear Mr/Mrs. Non-repayment of debts by someone who is able to repay is an injustice [non-arabic]. Please repay your credit card balance at your earliest convenience. Call [customer service number].
<b>Cash Rebate Incentive</b>	Bpk/Ibu Yth.Bulan ini:slsaikan tag Anda utk mendapatkan hadiah uang tunai sebesar 50% dr pembayaran minimum pada tag berikutnya.Sgra slsaikan tag Anda.[customer service number]	Dear Mr/Mrs. This month, make your credit card payment to get a cash rebate equal to 50of your minimum payment on your next statement. Please repay your credit card balance at your earliest convenience. Call [customer service number].
<b>Credit Reputation Incentive I</b>	Bpk/Ibu Yth.Ketrlmbtn pembyr dilaporkan k SistemInformasiDebitur BI,yg semua bank berkonsltasi&mengurangi kemampuan mendptkn krtdt.Sgra slsaikan tag Anda.[customer service number]	Dear Mr/Mrs. Late payments are reported monthly to Bank Indonesia Sistem Informasi Debitur (SID), which all banks consult. This will diminish your ability to get credit in the future. Please repay your credit card balance at your earliest convenience. Call [customer service number].
<b>Credit Reputation Incentive II</b>	Bpk/Ibu Yth.Ketrlmbtn pembyr dilaporkan k SistemInformasiDebitur BI,yg semua bank dapat berkonsultasi.Sgra slsaikan tag Anda.[customer service number]	Dear Mr/Mrs. Late payments are reported monthly to Bank Indonesia Sistem Informasi Debitur (SID), which all banks can consult. Please repay your credit card balance at your earliest convenience. Call [customer service number].
<b>Placebo: Simple Reminder</b>	Bpk/Ibu Yth.Tagihan [name of the card] Anda jatuh tempo pada tanggal [due date] dan pmbayarn belum diterima.Sgra slsaikan tag Anda.[customer service number]	Dear Mr/Mrs. The due date of your [name of the card] bill was on [due date] and your payment has not been received yet. Please repay your credit credit card balance at your earliest convenience. Call [customer service number].
<b>Placebo: Religious Message</b>	Bpk/Ibu Yth.Nabi SAW bersabda:”Jika Allah menginginkan yg terbaik buat umatnya,IA melimpahkan padanya pengetahuan Kitab”HR.Bukhari.Sgra slsaikan tag Anda.[customer service number]	Dear Mr/Mrs. The Prophet (Peace and blessings be upon Him) says: When Allah wishes good for someone, He bestows upon him the understanding of the Book (Imam al-Bukhari). Please repay your credit card balance at your earliest convenience. Call [customer service number].

## A Survey Instruments

### A.1 Religion and Religiosity

Assalamu'alaikum Sir/Madam,

May I please speak to Mr./Mrs. [cardholder name]. I am calling from [bank name] and would like to ask a few questions to improve the services we offer with [name of the credit card]. This will take less than 5 minutes. Are you willing to participate?

1. Please rank the following in terms of importance in your life, from 1 (most important) to 4 (least important)
  - Family
  - Work
  - Friends
  - Religion
  
2. How important is religion in your life?  
*Not important at all* [1] [2] [3] [4] [5] *Extremely important*
  
3. To you personally, how important is it to behave morally?  
*Not important at all* [1] [2] [3] [4] [5] *Extremely important*
  
4. To you personally, how important are the rules of Islam and Shari'a law?  
*Not important at all* [1] [2] [3] [4] [5] *Extremely important*
  
5. Who do you think might have said the following phrase:  
*"Non repayment of debt by someone who can afford is an injustice"?*
  - Islamic Council
  - Prophet Mohammad (peace and blessings be upon Him)
  - Director of [bank name]
  - Director of Bank Indonesia
  - Don't Know

Thank you so much for your participation in this survey designed to improve our service. Have a nice day. Wassalamu'alaikum warahmatullahi wabarakatuh!

## A.2 Knowledge of the Credit Registry

Assalamu'alaikum Sir/Madam,

May I please speak to Mr./Mrs. [cardholder name]. I am calling from [bank name] and would like to ask a few questions to improve the services we offer with [name of the credit card]. This will take less than 5 minutes. Are you willing to participate?

1. Are you aware of the existence of the *Bank Indonesia Sistem Informasi Debitur*?
2. What do you think would be the consequences of being reported to the credit registry for non-repayment of debts?
  - Will not be able to open new deposit accounts  
Yes  No
  - Will not be able to get new credit from [bank name]  
Yes  No
  - Will not be able to get new credit from any other bank  
Yes  No
  - Will have to go on trial/appear in front of a judge  
Yes  No

Thank you so much for your participation in this survey designed to improve our service. Have a nice day. Wassalamu'alaikum warahmatullahi wabarakatuh!

### A.3 Enforcement and Disutility from the Message [Control]

Assalamu'alaikum Sir/Madam,

May I please speak to Mr./Mrs. [cardholder name]. I am calling from [bank name] and would like to ask a few questions to improve the services we offer with [name of the credit card]. This will take less than 5 minutes. Are you willing to participate?

1. How committed do you think [name of bank] is to collect debts from delinquent customers on a scale from 1 (not very committed) to 5 (very committed)?
2. [Name of bank] is sending reminder messages to its customers to help them make their payments on time. You received one of these messages last week. Would you like to receive the same message in the future? Yes [ ] No [ ]
3. What do you think would be the consequences of being reported to the *Bank Indonesia Sistem Informasi Debitur* credit registry for non-repayment of debts?
  - Will not be able to open new deposit accounts  
Yes [ ] No [ ]
  - Will not be able to get new credit from [bank name]  
Yes [ ] No [ ]
  - Will not be able to get new credit from any other bank  
Yes [ ] No [ ]
  - Will have to go on trial/appear in front of a judge  
Yes [ ] No [ ]

Thank you so much for your participation in this survey designed to improve our service. Have a nice day. Wassalamu'alaikum warahmatullahi wabarakatuh!

#### A.4 Enforcement and Disutility from the Message [Treatment]

Assalamu'alaikum Sir/Madam,

May I please speak to Mr./Mrs. [cardholder name]. I am calling from [bank name] and would like to ask a few questions to improve the services we offer with [name of the credit card]. This will take less than 5 minutes. Are you willing to participate?

1. How committed do you think [name of bank] is to collect debts from delinquent customers on a scale from 1 (not very committed) to 5 (very committed)?
2. [Name of bank] is sending reminder messages to its customers to help them make their payments on time. You received one of these messages last week. Would you like to receive the same message in the future? Yes  No
3. We sent this SMS to some of our customers being late on their credit card repayment: "Dear Mr/Mrs. Late payments are reported monthly to Bank Indonesia Sistem Informasi Debitur, which all banks consult. This will diminish your ability to get credit in the future. Please repay your card balance at your earliest convenience. Call [customer service number]." What do you think would be the consequences if you get reported to the *Bank Indonesia Sistem Informasi Debitur* credit registry for missed payments?
  - Will not be able to open new deposit accounts  
Yes  No
  - Will not be able to get new credit from [bank name]  
Yes  No
  - Will not be able to get new credit from any other bank  
Yes  No
  - Will have to go on trial/appear in front of a judge  
Yes  No

Thank you so much for your participation in this survey designed to improve our service. Have a nice day. Wassalamu'alaikum warahmatullahi wabarakatuh!