Risk and Time Preferences in Indonesia: The Role of Demographics, Cognition, and Interviewers

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Abstract

Using new data from the Indonesian Family Life Survey, I examine whether survey-elicited risk and time preferences are systematically related to demographic characteristics, cognition, and interviewer characteristics. The main results are: men are less risk averse than women; older adults are more impatient; wealthier adults are less risk averse and less impatient, and; adults who perform better in a word recall test, a measure of cognition related to short-term memory, are less impatient.

The elicitation process identifies individuals with preferences that do not conform to standard discounted expected utility theory. I find that nonstandard preferences are significantly negatively related to word recall, implying that persons with higher cognitive ability are more likely to conform to standard discounted expected utility theory.

Finally, I control for interviewer characteristics to see how interviewers may affect respondents' answers to the elicitation questions. I find mixed evidence for interviewer effects on preferences, but their inclusion does not change the estimates of the other explanatory variables substantially. Some measures of interviewer human capital is associated with whether a respondent switches from nonstandard to standard preference.

Keywords: risk aversion, time preference, hypothetical questions, Indonesia, interviewer effects

JEL Codes: D81, D90, O10

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1 Introduction

Economic theory has traditionally taken individual preferences such as risk aversion and time preference as given. However, economists now largely agree that they are endogenously formed. Furthermore, these preferences have been empirically shown to be heterogeneous across individuals. Yet in the context of developing countries, not much has been done to demonstrate that preferences are heterogeneous or to uncover the correlates of these preferences in a nationally-representative manner. This paper uses data from the fourth and latest wave of the Indonesian Family Life Survey (IFLS-4) to accomplish exactly that. In IFLS-4, survey questions designed to elicit individual risk and time preferences were posed to a total of 29,054 adult respondents aged 15 and older.[1] Risk preference was elicited through the widely used method of hypothetical lottery-choice questions. Time preference was elicited through the common experimental method of asking respondents to choose between a smaller, immediate payoff and a larger, delayed payoff (Frederick et al., 2002). This is the first-ever large-scale attempt to elicit risk and time preferences in Indonesia.[2]

A useful feature of the IFLS-4 preference elicitation modules is respondents were first posed a preliminary question in which they had to choose between two options, one of which was weakly dominated. Under expected utility (EU) theory, utility maximizers should not pick the dominated option in the risk aversion module, but a small percentage did. Likewise, in a discounted utility (DU) framework, respondents should not choose the dominated option in the time preference module, but some did. A second objective is thus to determine the correlates of preferences that do not conform to standard models. I explain the preference elicitation process in detail in Section 2.

Previous studies of nationally-representative surveys have shown that these preference parameters are heterogeneous across individuals. Examples are Barsky et al. (1997) for the Health and Retirement Study (HRS), Dohmen et al. (2005) for the German Socioeconomic Panel, and Hamoudi (2006) for the Mexican Family Life Survey.

A number of studies have investigated the correlates of risk and time preferences on a national scale. Whether explicitly or implicitly, these studies are intrinsically linked to the supposition that individual preferences are not given but endogenously shaped. Leigh (1986) has found in the 1972 PSID that age, schooling, marriage, number of children and wages were all

[1] For more information about IFLS, please consult the user guide (Strauss et al., 2009) which can be found on the official website: http://www.rand.org/labor/FLS/IFLS.html

[2] Miyata (2003) and Cameron and Shah (2012) collected experimental data on, respectively, 400 and 1550 Indonesian villagers in 2000 and 2008, from which they estimated risk aversion parameters.

significantly associated with risk aversion and discount rates. In a nationally-representative German sample, Dohmen et al. (2005) have shown that gender, age, height and parental education were significantly correlated with risk aversion. Hryshko et al. (2011) have found that the risk aversion of PSID respondents was affected by changes in compulsory schooling laws which affected their parents.

Bowles (1998) has surveyed the endogeneity of preferences[3] to economic institutions, drawing from evidence from experimental economics and other social sciences. He identified five effects of economic institutions on preferences. The first effect he termed the construal effect of markets: for example, people perceive paying a tax for a government service and buying the identical service on a market differently, even though the end result is the same. The second effect, the motivational effect of markets, states that the extrinsic nature of market monetary rewards often *undermines* motivations; however, this is counterbalanced by the wide range of choices afforded by markets. Third, economic institutions affect the demand and supply of cultural traits and social norms such as trust and reciprocity. Fourth, markets shape preferences by structuring the tasks people perform. Lastly, institutions affect the process of cultural transmission; they influence how people acquire values and desires.

Economic theory has traditionally taken risk and time preferences to be time-invariant, although there have been exceptions, e.g. the work of Becker and Mulligan (1997) on endogenous time preference. Some newer empirical studies have shown that risk aversion can be increased by large shocks, such as a natural disaster (Cassar et al., 2011; Cameron and Shah, 2012) or financial crisis (Guiso et al., 2011). The first two studies did not have pre-disaster data on preferences, and thus were only able to compare subjects in disaster areas to those in non-disaster areas in the post-disaster period. The third study fared better; the authors were able to elicit risk aversion from a large sample of clients of an Italian bank before and after the 2008 financial crisis. Although with cross-sectional data I cannot in the present study test for within-person changes in preferences, it makes for an obvious extension to this paper when the next wave of the IFLS is released.

I am aware of only two working papers investigating the stability of time preference. In a study conducted over two years with 1,400 individuals, Meier and Sprenger (2010) have found that incentivized-task-elicited discount factors were basically unchanged in aggregate distribution. Some individuals showed unstable preferences over time; however, unstable preferences were found to be uncorrelated with socioeconomic and demographic variables.

[3]Bowles (1998) broadly defined preferences as "reasons for behavior, that is, attributes of individuals that (along with their beliefs and capacities) account for the actions they take in a given situation" (p. 80).

Krupka and Stephens (2010) showed that discount rates elicited through hypothetical choice questions over two years changed over time.

Does an individual's cognitive ability have anything to do with his attitude towards risk or level of impatience? IFLS-4 contains data on measures of cognition derived from tests for respondents 15 years of age and older. The notion that more-intelligent people are more patient is an old one among economists, but there is no widely shared prior on the relationship between cognition and risk aversion (Benjamin et al., 2006; Frederick, 2005). I test for a relationship between a measure of cognitive ability, i.e. word recall, and the two preference measures. It bears remembering that cognition is not a monolithic trait. Psychologists have historically distinguished between two broad dimensions of intelligence: fluid intelligence and crystallized intelligence (Cattell, 1963). Fluid intelligence involves abstract reasoning and executive function, whereas crystallized intelligence comes from the acquisition of education and experience. Later researchers, in particular Horn (1985), refined this distinction to include up to 10 dimensions, including short-term, or episodic, memory (McArdle et al., 2002). Word recall, the cognitive measure that I use, is a measure of short-term memory, which is "a very general measure of an important aspect of fluid intelligence since access to memory is basic to any type of cognitive ability" (McArdle et al., 2009, p. 9).

IFLS-4 also keeps information about interviewers, which permits me to control for interviewer effects in my analyses. Interviewer effects in surveys have been studied quite widely in other social sciences, though recently it has gotten increased attention in economics. Recent examples from economics are Blom et al. (2011) and Cuxart (2011), who studied interviewer effects in the European Social Survey. Why would interviewers affect responses if they were trained to follow a common procedure? The political science literature has offered one explanation: the "social distance" (that is, differences in social class, sex, race and age) between interviewer and respondent can affect responses (Dohrenwend et al., 1968).[4] This would naturally be a factor in interviews about subjective topics, such as when soliciting an opinion.

Whether interviewer effects would be a factor in objective procedures such as lottery-choice questions is *a priori* less clear. Kemsley (1965) has shown that interviewer effects were present in expenditure surveys, an ostensibly objective endeavor. Why is this so? One possible explanation is social distance, in that respondents may try to present a particular

[4]Social distance has not been ignored in economics. Akerlof (1997) has developed a generalized model of social distance within the context of social decisions, such as the demand for education, the decision to marry and the decision to discriminate. His model explained the existence of social class and linguistic dialect with particular relevance to the United States.

image of themselves depending on the perceived social distance between them and their interviewer. Another possible explanation is interviewer idiosyncrasy: although they may follow the same procedures, interviewers may still perform idiosyncratically during the interview, for example in tone of voice, thus unwittingly biasing responses. In other words, some subjective element may be present in the interview process. My purpose in controlling for interviewer characteristics is to see whether they are significant and whether their inclusion would qualitatively change the estimates of the other explanatory variables.

I find that risk and time preferences are systematically related to basic demographic characteristics. Men are robustly less risk averse than women. Men are less impatient than women but this result is not always significant. Impatience also decreases with education and increases with age, although the latter result is comparatively weak. Richer respondents are less risk averse and less impatient than poorer ones. Respondents with higher cognitive ability (as proxied by word recall) are more patient. Interviewer characteristics do come up significant in some specifications, but they do not qualitatively alter the preceding results.

To a lesser extent than risk aversion and time preference, I find nonstandard preferences to vary somewhat systematically. Cognition as proxied by word recall is negatively associated with both the likelihood of being "gamble averse" and of being a "negative time discounter" (I explain these terms in Section 2). Men are more likely to be negative time discounters. The inclusion of interviewer characteristics does not change the main results qualitatively.

The layout of the paper is as follows: Section 2 explains the preference elicitation process in detail. Section 3 describes the data. Section 4 explains the empirical strategy behind the analyses. Section 5 presents the results. 6 discusses potential problems with the analyses, and Section 7 concludes.

2 Preference Elicitation

2.1 Previous Research

Early research on risk attitudes was carried out primarily by experimental psychologists (for a review, see Slovic, 1964). Psychologists have a number of different conceptualizations of risk preference, but the one that is most closely related to the economic concept of risk aversion is what Slovic termed "probability and variance preference measure". These studies used both hypothetical and actual payoffs, but actual payoffs and sample sizes were typically small.

In economics, Binswanger (1980) is a highly influential study that represented a marked improvement over past attempts to elicit risk attitudes. First, where heretofore economists had used hypothetical gambles to measure risk aversion, Binswanger used actual gambles with real payoffs. Second, the psychology experiments to that point had low payoffs and small sample sizes, whereas Binswanger ran his experiment on 330 randomly-selected farmers in rural India using payoffs that were high relative to their incomes. Subjects were asked to choose between eight lotteries, with the riskiest lottery offering equally-likely payoffs of Rs0 in the low case and Rs200 in the high case, and the safest lottery offering Rs50 in both the low and high case. Based on his choice, a subject was classified into a risk aversion class. Binswanger played this basic lottery-choice game 17 times with each subject over a span of 5 to 6 weeks. Payoff levels were varied by multiplying the basic payoffs by 1/100, 1/10 or 10. Some rounds consisted of hypothetical lotteries because Binswanger wanted to test the usability of answers to hypothetical lotteries vis-a-vis actual gambles. The main results of Binswanger's study were as follows: (a) At low payoff levels, individual risk aversion was widely distributed from intermediate risk aversion to negative risk aversion. (b) At high payoff levels, risk aversion was concentrated in the moderate risk aversion category, and risk neutrality virtually disappeared. (c) At high payoff levels, wealth does not significantly influence risk aversion. (d) When subjects had played only low-payoff actual gambles beforehand, hypothetical answers yielded a risk aversion distribution that was significantly more dispersed than that from the actual gambles. However, once a high-payoff actual gamble was played, Binswanger found no significant difference between real choices and hypothetical answers.

Kachelmeier and Shehata (1992) conducted a series of laboratory experiments on 185 student volunteers in China to elicit risk aversion. Their study differed from Binswanger's in that subjects were not asked to choose between lotteries but asked to provide choices in individual lotteries. Besides, various probabilities were used, not just the equally-probability coin toss used by Binswanger. However, like Binswanger, they found that risk aversion increased as payoffs increased.

Holt and Laury (2002) used a menu of paired lottery choices, similar to Binswanger, but they varied the probabilities from 1/10 to 10/10. Their design has been considered the "gold standard" in the experimental literature on risk aversion (Anderson and Mellor, 2009). To control for potential wealth effects between the high and low real-payoff treatments, subjects were required to give up what they had earned in the first low-payoff task in order to participate in the high-payoff decision. Whereas Binswanger only inserted hypothetical lotteries sparingly, Holt and Laury conducted both actual and hypothetical lotteries in almost all

rounds. Once again, the experiments showed risk aversion increased going from low-payoff rounds to high-payoff rounds. This effect was not observed in the hypothetical lotteries, which the authors took to mean that preferences elicited from hypothetical lotteries with high stakes may not be valid.

While experimental measures have the advantage of offering real-money payoffs and thus ensuring some level of incentive compatibility, they are usually too time consuming and cost prohibitive to be administered on a large scale. Incorporating hypothetical lotteries into household surveys allows the direct elicitation of preferences from large, nationally-representative samples. The disadvantage, of course, is responses to hypothetical lotteries may not be behaviorally valid. In the U.S., HRS, PSID, and National Longitudinal Survey of Youth 1979 (NLSY79) all contain survey questionnaires involving hypothetical gambles. The HRS also fields questions meant to directly measure individual rate of time preference. Among large-scale household surveys in developing countries, the Mexican Family Life Survey (MxFLS) is probably the first to incorporate risk and time preference elicitation questionnaires (Rubalca and Teruel, 2008).

Some recent studies have found that survey-elicited risk preference *is* consistent with experimentally-derived measures, which seemingly contradicts the findings of Holt and Laury, and to a lesser extent Binswanger. In the nationally-representative German Socioeconomic Panel (GSOEP) of 22,000 adults, Dohmen et al. (2011) asked individuals to rate their willingness to take risks "in general", on an 11-point scale. They called this measure of risk aversion the "general risk question". They then conducted a field experiment on a representative sample of 450 German adults formed using the same sampling methodology as the GSOEP.[5] On this experimental sample, they asked the GSOEP's general risk question and also played a typical lottery-choice game with real-money payoffs. They found that risk aversion as measured by the general risk question was positively correlated with risk aversion measured by choices in the actual gambles, and conclude that this validated the GSOEP's general risk question. While informative, this result is irrelevant to most other household surveys that elicit risk aversion using hypothetical lottery-choice questions. Furthermore, there is no guarantee that the validation established for the experimental sample would carry over to the GSOEP sample.[6]

Perhaps the most relevant evidence (to the present paper) on the validity of hypothetical

[5]The authors did not mention whether the experimental sample consisted of the same adults who were in the GSOEP.

[6]This study was essentially replicated for rural Thailand where the same conclusions were reached (Hardeweg et al., 2011).

lotteries comes from the MxFLS, a nationally-representative survey of all adult residents in 8200 households (Hamoudi, 2006). Risk preference was elicited for all respondents using typical hypothetical lottery-choice questions with no real-money payoffs. At the same time, a subset of respondents were also asked to play lottery-choice games with real-money payoffs. Hamoudi found that individuals who were more risk averse in the hypothetical questions were also more risk averse when real money was at stake.

There is currently no gold standard for measuring time preference (Chabris et al., 2007). The most widely-used method, which is also the method used in IFLS, asks a series of questions, each of which asks the subject to choose between a sooner, smaller payoff and a later, larger payoff. The competing payoffs are denominated in the same goods, typically amounts of money. The subjects discount rate is backed out by assuming a discount function. Most studies assume that the utility function is linear in consumption, i.e. agents are risk neutral. Most studies also assume no savings, i.e. the payoff is consumed the moment it is received. This method is used both in experiments with actual payoffs and in surveys with hypothetical payoffs.

2.2 Measuring Risk Aversion in IFLS-4

The elicitation of risk aversion followed the commonly-used approach of a lottery choice task. The respondent was asked a series of questions. In each question, the respondent was presented with two choices, a sure amount and a probability-based alternative, and asked to choose which he would prefer. Importantly, the questions were not framed as gambles, since the vast majority of the Indonesian population is Muslim and gambling is not permitted in Islam. The monetary values were economically meaningful, as monthly GDP per capita was about 1.5 million rupiah in 2007. Specifically, the respondent was asked:

"Suppose you are given two options of receiving income. In the first option you are guaranteed X rupiah per month. In the second option you are guaranteed Y or Z rupiah, each with equal chance. Which option would you choose?"

Monetary values X, Y and Z varied according to the flowchart in Figure 1. The first question was a filter meant to identify respondents who picked the sure amount even though the probability-based alternative had a weakly dominant expected payoff. They stuck with their choice even after the interviewer had explained to them that the probability-based alternative

assured them of at least as much as the sure amount. These respondents may have misunderstood the question, misreported their choice, or they may in fact be risk loving or irrational; in any case, they could be fundamentally different from other respondents who showed willingness to take on risk. Following Hamoudi (2006), I refer to those respondents who chose the weakly dominated certain payoff as "gamble averse".

Respondents who passed the filter question faced a sequence of questions whereby they had to pick between a certain payoff and an uncertain payoff. Where the respondent found himself in the sequence depended on his choice in the previous question. If he picked the sure amount, the next question contained an uncertain payoff that was less risky; on the other hand if he picked the uncertain payoff, his next question contains an uncertain payoff that is more risky.[7] In this way, respondents can be grouped into four ordinal levels of risk aversion based on their certainty equivalents at the termination of the interview.

The most risk averse respondents will exit the interview at the terminal node represented in the lower left corner of Figure 1; the least averse exit in the lower right node. The terminal nodes therefore represent an ordinal ranking of risk aversion among the respondents. Respondents with risk aversion = 4 are the most risk averse, and those with risk aversion = 1 are least risk averse. Recall that respondents who exit at the first question (the topmost node in Figure 1) are gamble averse.

Two sets of questions were asked, which I will call Risk A and Risk B throughout the rest of the paper. Risk A questions were asked first followed by Risk B. The two sets differ in the magnitude of the payoffs and the variance of their expected payoffs. The uncertain payoffs in Risk B have higher coefficients of variation than those in Risk A, reflecting a higher risk-reward ratio.

Assuming that each response results from an expected utility calculation, we can back out a range of risk aversion parameters for each of the four categories. An expected utility maximizer will choose the uncertain payoff over the certain payoff if the expected utility from the uncertain payoff exceeds that from the certain payoff, that is, if:

$$\frac{1}{2}U(Y) + \frac{1}{2}U(Z) > U(X) \tag{1}$$

and vice versa.

If we further assume a functional form for U and that partial risk aversion, r is constant,

[7] The riskiness of an uncertain payoff can be represented by its coefficient of variation, which is the ratio of the standard deviation of the two probabilistic payoffs to their mean.

we can bound the values of r for each risk aversion category in Figure 1.[8] Following much of the literature, I assume an isoelastic utility function for U, so that for a payoff c,

$$U(c) = \frac{c^{(1-r)}}{1-r} \tag{2}$$

Solving for r in (1) for each question in the elicitation module gives ranges for partial risk aversion coefficients as shown in Table 1, Panel A.

2.3 Measuring Rate of Time Preference

The process of eliciting time preference was similar to that of risk aversion. Respondents were asked a series of questions of the form:

"Suppose you have won a prize. How will you choose to be paid?"

The respondent had to answer the question by choosing one of two options. The first option was an amount to be paid today and was held constant throughout the series. The second option was a larger nominal amount to be paid at a future date (either one year or five years later). The payoff for the second option was changed over the course of the series to reflect different subjective discount rates. The question a respondent faced at a given point in the series depended on his choice in the previous question. The elicitation process is best illustrated in a flowchart (Figure 2). Respondents who exit at Category 1 have the lowest time preference, and so are the most patient. At the other end, those who exit at Category 4 are the most impatient as they have the highest time preference.

As with the risk questions, the time preference questions were asked in two separate sets that I call Time A and Time B. Time A questions offer a higher annualized return than Time B questions and have a shorter time horizon (one year as opposed to five for the latter).

We can back out a range of discount rates for each of the four categories if we assume that

[8] Let $W = w + M$ where W denotes final wealth, w is initial wealth, and M is the prospective certainty equivalent. On a utility function $U(W) = U(w + M)$, "absolute risk aversion" according to Arrow-Pratt is $Q = \frac{-U_{WW}}{U_W} = \frac{-U_{MM}}{U_M} = \frac{-U_{ww}}{U_w}$, where subscripts to U denote the respective derivatives. The Arrow-Pratt definition of "relative risk aversion", $R = -W\frac{U_{WW}}{U_W} = WQ$. Partial risk aversion was first defined by Menezes and Hanson (1970) as $S = -M\frac{U_{WW}}{U_W} = MQ$. In other words, partial risk aversion is equal to relative risk aversion when initial wealth is fixed but payoffs are varied. I do not use relative risk aversion because it is defined when wealth and the prospect are both changed, which do not apply here. Partial risk aversion is the relevant measure here because in a one-period survey, individual wealth can be assumed to be fixed.

each response results from a discounted utility calculation (Samuelson, 1937). A discounted utility maximizer will choose the present payoff X over a payoff Y at τ period from today if the utility from the present payoff exceeds the present value of the future payoff. Following most of the literature (Chabris et al., 2007), I assume that utility is linear in its argument, so that the respondent chooses X over Y if:

$$X > (\frac{1}{1+\rho})^{\tau} Y \tag{3}$$

where $(\frac{1}{1+\rho})^{\tau}$ is the exponential discount factor, and ρ is the discount rate, assumed to be constant.[9] [10]

Plugging in the X and Y values into (3) (see the flowcharts in Figure 2) and solving for ρ gives annual discount rate ranges for each time preference category, as shown in Table 1, Panel B.[11] The higher a person's discount rate, the more he discounts future utility, implying a higher degree of impatience. Lastly, it should be noted that time preference A and B are not directly comparable since they resulted from choices over entirely different bundles, as this subsection makes clear.

As in the risk module, respondents were first given a filter question. The filter question asked respondents to choose between receiving an amount today and the same amount at a future date. Respondents who chose the latter option thus preferred to defer receiving money, even without compensatory interest. As in the risk module, these respondents were given a chance to reverse their decision; they were informed by the interviewer that they could receive the same amount of money today and that waiting will not increase the amount of money they could receive. Respondents who chose to defer receiving money without compensation may have done so for a number of reasons. They could be extremely patient. They could

[9]The assumption of a constant discount rate is not an innocuous one; it implies that preferences over a given bundle do not change for a given time horizon no matter when they occur, a property known as time consistency. For example, if in 2012 a person prefers receiving X now over Y in 2013, when faced with the same problem in 2020, he would still choose receiving X in 2020 over Y in 2021. The exponential discount function is the only function with this property. Despite or perhaps because of its simplicity and elegance, the discounted utility model has been widely found to be inadequate to explain several empirical regularities. For example, measured discount rates are usually not constant over time, but rather declining–the hyperbolic function fits this phenomenon. The survey paper by Frederick et al. (2002) has a very thorough explanation of various "anomalies" in the discounted utility model.

[10]The linear utility function implies that agents are assumed to be risk neutral. Andersen et al. (2008) have shown that discount rates are significantly lower when the curvature of the utility function is accounted for than when linear utility is assumed. Hence, they advocated joint elicitation of risk and time preferences.

[11]The time horizon τ is 1 year for Time A and 5 years for Time B. Since the per-period discount rate ρ is a constant and I take a period to be a year, ρ is an annual rate.

be exhibiting anticipatory saving or using deferment as a self-commitment device.[12] They could simply be irrational or have not understood the question. Whatever the case, these respondents could differ in unobserved ways from other respondents, who would accept a windfall now instead of waiting a year or five years to receive the same windfall without interest, and so should be considered separately. Since the only way this is possible in the discounted utility framework of 3 is for ρ to be negative, I call these respondents "negative time discounters".[13]

2.4 A Note on Nomenclature

Throughout the paper, I will follow the nomenclature described here. As mentioned before, the risk elicitation module contains two sets of questions, A and B. Likewise for the time preference elicitation module. I will suffix A(B) to preference measures derived from set A(B), e.g. 'risk aversion A' for the measure elicited in set A. Risk A(B) can refer to either the elicitation questions or elicited risk aversion measure from set A(B); the reference will be clear in context. The same goes for Time A and Time B. Gamble aversion and negative time discounting are shortened to GA and NTD respectively, where necessary. I collectively refer to gamble averse and negative time discounting respondents as 'nonstandard' respondents.

3 Descriptive Statistics

Table 2 presents summary statistics of the individual and household characteristics used in the analyses. 48 percent of respondents were male, with the average age of all respondents being 37 years. The average years of schooling attained was a little more than 8. Household heads and their spouses comprised 43 percent of the sample. 38 percent of respondents lived with at least one parent or parent-in-law. Respondents were split almost equally between rural and urban dwellers. 89 percent were Muslim, and almost half were ethnic Javanese.

[12] Bryan et al. (2010) have defined a commitment device as "an arrangement entered into by an agent which restricts his or her future choice set by making certain choices more expensive, perhaps infinitely expensive, while also satisfying two conditions: (a) the agent would, on the margin, pay something in the present to make those choices more expensive, even if he or she received no other benefit for the payment; and (b) the arrangement does not have a strategic purpose with respect to others" (p. 3).

[13] Experimental studies have shown that people prefer improving sequences of outcomes to declining sequences, a finding that implies negative time preference ($\rho < 0$) in the standard discounted utility model (for a summary, see Frederick et al. (2002)). However, Loewenstein (1987) has shown that apparently negative time preference in the standard DU model can in fact be made positive if the DU model is modified to incorporate the discounting of the *anticipation* of future consumption.

Risk and time preferences were heterogeneous across individuals, although the vast majority of respondents were categorized as most risk averse and least patient. Almost half of the respondents were gamble averse A, but only 9 percent were gamble averse B. Negative time discounting was low (not more than 2 percent) in both Time modules.

Table 3 presents cross tabulations of the preference measures and nonstandard measures. Panel A shows that out of 15,260 respondents in both Risk modules, 7,780 were categorized as most risk averse (category 4) for both modules. Far fewer respondents fell under category 1 (least risk averse) for Risk B compared to Risk A; in other words, respondents became more risk averse in the second module. Recall that Risk B stakes exhibited higher coefficients of variance overall than Risk A, so we would expect a rational risk averse respondent to be more risk averse under Risk B. This suggests that the respondents who answered as standard expected utility theory would predict did in fact approach them from a utility maximizing perspective.

Panel B cross tabulates the Time A and Time B categories. Out of 28,400 respondents, nearly 20,000 had the highest time preference (least patient) in both measures. Of the 2,257 respondents who were most patient in Time A, only 352 were also most patient in Time B. Far fewer adults were most patient in Time B compared to Time A (523 vs. 2,257), and more adults were least patient in Time B compared to Time A (23,111 vs. 20,331). These patterns make sense. Time B payoffs had lower annualized returns than Time A payoffs, so respondents should be less patient in Time B, which is exactly what we see.

The fact that the B questions were posed after A raises the question of whether respondents may have approached B questions differently from A, perhaps through learning or framing effects. Ideally, the timing effect could be investigated more satisfactorily if the sequencing of the A and B modules were randomized, but unfortunately this was not the case. Nonetheless, Panels C and D shed some light on this question by cross tabulating the nonstandard counts from the Risk and Time modules. In Panel C, we see that of the 12,236 adults who were gamble averse A, 11,235 (or 92 percent) of them were *not* gamble averse B. This suggests that respondents 'improved' on average, going from the first risk elicitation exercise to the second. Panel D cross tabulates Time A and Time B. Although only 2 percent of respondents were negative time discounters in at least one Time module, we still see signs of such improvement among the nonstandard respondents going from A to B; out of 566 NTD A adults, 418 were *not* NTD B.

The sample allows us to look for evidence of positive assortative mating on preferences in the Indonesian marriage market. In Gary Becker's original formulation, positive assorta-

tive mating on a certain trait takes place if and only if "such pairings maximize aggregate commodity output over all all marriages" (Becker, 1991, p. 113). The literature has since grown to encompass theoretical and empirical treatments of assortative mating on such traits as wages (Lam, 1988), education (Mare, 1991), age (Bergstrom and Bagnoli, 1993), and religion (Bisin et al., 2004). As an exploratory first step, I run simple regressions of husband's preference parameter on wife's, with no control variables. In Table 4, we see that wife's preference is indeed positively correlated with husband's in all cases and significant in all but one case.

4 Empirical Strategy

The main purpose of this paper is to investigate whether individual preference parameters vary systematically with demographic characteristics. This is a descriptive exercise; coefficient estimates are not to be interpreted as causal. To this end, I separately estimate linear probability models of the form

$$y_i = \alpha_i + \beta' X_i + \epsilon_i \tag{4}$$

where the dependent variable y_i is one of Risk A, Risk B, Time A or Time B for each individual. Recall that each preference measure is an ordinal variable with four categories. Because a high percentage of respondents fall under category 4 (most risk averse) in the Risk modules, I convert Risk A and Risk B into dichotomous variables where category 4 takes the value 1 and other categories are 0 (nonstandard respondents are dropped, coded as nonstandard, and analyzed separately). Likewise, in the Time module, the vast majority of respondents fall under category 4 (most impatient); thus I code category 4 as 1 and all other categories 0.

As explained in Section 2, some respondents were categorized as nonstandard based on their choices in the Risk or Time modules. A second objective of this paper is to shed some light on the characteristics of these nonstandard respondents. To do this, I separately estimate (4) using as dependent variables the four dummy variables indicating nonstandard-ness: gamble aversion A and B, and negative time discounting A and B.

The vector of explanatory variables, X_i, consists of individual and household characteristics. I include the following exogenous variables in all regressions: sex, age and whether the respondent is a Muslim. Following the literature, I also include some variables that are potentially endogenous, such as education, rural residence, and the logarithm of monthly per

capita household expenditure.[14] I also include word recall, a measure of episodic memory, to account for the influence of cognitive ability not captured by education. In all regressions, I cluster the standard errors at the community level to allow for arbitrary correlations within communities. In addition, I reestimate (4) first with community dummies, then with household dummies. This controls for unobserved heterogeneity common to all individuals within each IFLS community or household (for example, individuals living in a community that had just suffered a drought could be systematically more risk averse than individuals in other communities). These fixed effect OLS regressions are of the form

$$y_{ik} = \alpha_{ik} + \beta' X_{ik} + \phi_k + \epsilon_{ik} \tag{5}$$

where ϕ_k is a dummy for each community, k (or household).

5 Results

5.1 Role of Demographics and Cognition

Table 5.A presents estimates of the correlates of risk aversion. Men are significantly less risk averse than women. This pattern is robust to sets A and B and to the inclusion of community dummies (columns 2 and 5) and household dummies (columns 3 and 6). This result is in agreeance with a large literature examining gender differences in aversion towards risk and risky activities. In surveys of experimental evidence in economics (Croson and Gneezy, 2009) and psychology (Bymes et al., 1999), the robust finding is that men are less risk averse than women.

Household log PCE is significantly negatively correlated with risk aversion, even after controlling for community fixed effect. This suggests that risk aversion decreases with wealth. Based on chi-square tests, age categories are jointly significant in four of the six specifications. In terms of the individual age categories, the oldest respondents seem to be significantly more risk averse relative to the youngest respondents (columns 4 and 5). Education levels however are jointly insignificant in four of the six columns.

The correlates of time preference are shown in Table 5.B. The coefficient on male is

[14] I use expenditure as a measure of household welfare instead of current income because it is a better proxy for permanent income. Furthermore, self-reported expenditure likely has less measurement error than self-reported income, which is notoriously unreliable in developing countries (Deaton, 1997).

negative but is significant only in three of the six columns.[15] Age categories are all jointly significant; older respondents are significantly more likely to be most impatient than the youngest respondents with the effect appearing to be monotonic over age categories. Education levels are also always jointly significant. Relative to no formal schooling, education level effects are monotonically decreasing (although only the senior high/university category is significantly negative). This suggests that impatience decreases with more education. Log PCE is significantly negatively related with time preference, suggesting impatience decreases with wealth.

Table 5.C reveals that gamble aversion A (GA A) is significantly correlated with gender, age, and education (columns 1-3). Men are less likely to be GA A compared to women. Age categories are jointly significant in the first three columns. Older respondents are more likely than the youngest respondents to be GA A, and this effect is almost monotonically increasing in age. Education levels are jointly significant in all three GA A models. Respondents with more education are less likely than those with no formal education to be GA A. Log PCE and rural residence are not significantly correlated with GA A. As can be seen in the last three columns, gamble aversion B (GA B) is not significantly correlated with almost all the explanatory variables. This is unsurprising because only 8 percent of respondents in the GA B analytical samples were gamble averse, with the vast majority exhibiting standard behavior.

Table 5.D completes the base estimations with correlates of negative time discounting. The estimates are qualitatively similar across columns, but because negative time discounting is observed so rarely (the analytical sample means for the dependent variable are 0.02 and 0.01 respectively for A and B), statistical power may be low. Males are significantly more likely to be NTD A/B. However, significance disappears when household fixed effect is controlled for. Age categories are jointly significant in the NTD A regressions, with older respondents being significantly less likely to pick the nonstandard answer. Interestingly, Muslims are significantly less likely to be NTD A and NTD B; however once community or household fixed effects are taken, this result disappears.

I also test whether an additional cognition measure is significantly correlated with preferences. Cognitive ability was partially captured in the base specifications by education. In the psychology literature, education can be thought of as a measure of crystallized intelli-

[15] Compared to the literature on risk aversion, there is not much evidence on how time preference varies by gender, nor a generally accepted prior. Two separate studies in Vietnam have found no significant gender differences in the discount rate (Anderson et al., 2004; Tanaka et al., 2010). van Praag and Booij (2003) have found that men are more patient than women, though their sample of newspaper readers in the Netherlands was not representative of the population.

gence. To capture the full effect of cognitive ability, a measure of fluid intelligence, such as episodic memory, should be included. New to IFLS-4 is a module designed to measure cognition using word recall as a proxy. Respondents were read a list of ten nouns and then asked to repeat as many words as they can recall, in any order. 12 to 15 minutes later, after other, unrelated questions were asked, respondents were again asked to repeat the words. The average number of correctly recalled words over both attempts gives a measure of cognition, or episodic memory in particular McArdle et al. (2009). I include word recall as an additional explanatory variable (entered as z-scores for ease of interpretation).

Word recall is not significantly correlated with risk aversion, but is significantly correlated with time preference. In Table 5.B, columns 1 and 4, a one standard deviation increase in the word recall score significantly decreases the likelihood of being most impatient by 1.6 percentage points for Time A and 1.2 percentage points for Time B (this effect is still significant after controlling for community). People with higher episodic memory, at least as measured by word recall, appear to be more patient, even controlling for education. This is consistent with prevailing thought and some recent findings in the literature (Dohmen et al., 2010; Burks et al., 2009; Frederick, 2005).

Interestingly, word recall is robustly significantly negatively related with gamble aversion and negative time discounting. This suggests that people who have better cognitive ability, at least on this measure, are more likely to to have behaved according to standard expected and discounted utility theories, and to have picked the dominating payoff.

5.2 Effect of Interviewers

In the IFLS, interviewers were recruited from within the 13 provinces originally surveyed in the inaugural IFLS (Figure 3). Interviewers were selected from potential candidates who had undergone standardized training in Solo, Jawa Tengah. They were then divided into 23 teams, with each team assigned to a specific province (some provinces needed more than one team). Since randomization of interviewers across geographical locations was not a consideration in the survey design, there is no reason to suppose that interviewer characteristics should be orthogonal to the error term. Indeed, researchers in economics and other fields have found evidence of interviewer effects in survey data collected from face-to-face interviews. In this section, I review previous research on interviewer effects in surveys. I then rerun the regressions from the previous subsection controlling for individual interviewer effects. Finally, I estimate the effects of some interviewer characteristics on elicited preferences.

5.2.1 Previous Research on Interviewer Effects

I am aware of one paper that has looked at interviewer effects in risk preference elicitation. Binswanger (1980) found evidence of severe interviewer bias in his classic study on risk aversion among rural Indian farmers. Binswanger assigned interviewer A to the village of Shirapur, and interviewer B to the neighboring village of Kalman. The interviewers elicited certainty equivalents from their subjects based on hypothetical income streams, upon which they classified respondents into five risk aversion categories. The villages were then resurveyed, switching investigators. In each village, investigator B classified respondents as more risk averse than investigator A, and chi-square tests showed the differences were significant.

Other researchers have looked at interviewer effects on longitudinal survey attrition (e.g. Thomas et al., 2010 for IFLS), item nonresponse (Riphahn and Serfling, 2005; Blom et al., 2011), measurement error (O'Muircheartaigh and Campanelli, 1998; Davis et al., 2010), and responses to trust questions (Cuxart, 2011).

5.2.2 Interviewer Effects in IFLS-4

Tables 6.A to 6.D show the results for individual interviewer dummies. Interviewer dummies are jointly significant in all specifications.

I take a closer look at the influence of interviewers in Tables 7.A–7.D . Following Thomas et al. (2010), I control for the following interviewer characteristics: a) whether the interviewer has previous experience as an interviewer, b) whether he plans to further his studies after his stint with the IFLS, c) whether he has a bachelor's degree, d) income from his last job, e) whether the interviewer is older than the respondent, and f) whether the interviewer is of the same sex as the respondent. The first four characteristics represent an interviewer's human capital. The last two characteristics can be thought of as indicators of social distance. The dummy for whether the interviewer is older than the respondent can be thought to capture an 'age difference effect'; for example, a younger respondent may provide a more conservative answer if the interviewer is clearly older. It is unclear to me why an interviewer's human capital might affect responses to the preference elicitation questions, and this is an area I am currently looking more deeply into.

The overall pattern is that interviewer characteristics significantly influence the responses in the Risk and GA modules, but less so in the Time and NTD modules, based on chi-square tests of joint significance. Be that as it may, if we compare these tables to Tables 5.A-5.D, we find that the interviewer effects do not change the estimates of the other explanatory variables

substantially.

Recall that for the filter questions, respondents were given a chance to rethink their answers if they picked the dominated payoff. For example, if a respondent picked "Rp800,000 guaranteed" over "equal chance of Rp800,000 or Rp1,600,000", the interviewer would ask whether he was sure about his choice, explain that the alternative option was at least as good, and give the respondent an opportunity to change his answer. I create dummy variables for whether a respondent who initially chose the dominated payoff, changed to the dominating payoff upon interviewer prompt. I regress these variables on interviewer characteristics (plus respondents' demographic variables and interviewer team dummies) to gauge their influence on respondent behavior in the filter questions.

The results can be found in Tables 8.A and 8.B. In the base specifications (columns 1 and 3), interviewer characteristics are jointly significantly correlated with whether respondents who initially picked a dominated option in the Risk filter questions changed their answers. However, virtually all individual effects are rendered insignificant once community dummies are controlled for.

An interviewer who plans to further his studies is significantly more likely to influence an answer change from his subject in the Risk A filter question. The effect remains even after controlling for community. I do not find this effect for Risk B (inference is made more complicated, however, by the fact that the dominated option in the Risk B filter is an uncertain payoff, in contrast to Risk A where it was a certain payoff; see Figure 1). Interviewer's income in last job is significantly *negatively* associated with answer change, across both sets A and B. I tentatively speculate that, at least for Risk A, enumerators who saw IFLS as a temporary job between education stints may have tried harder to elicit the 'correct' response in the filter question.

Interviewers who already have a bachelor's degree are significantly *less* likely to influence a change, although this effect is significant only in the Risk B module. The negative sign on bachelor's degree is surprising because we would expect highly-educated enumerators to betray the fact that the dominating payoff is better in the standard utility theory sense. Past enumeration experience and whether the enumerator is older than his subject do not significantly affect answer change. Interviewer characteristics are not jointly significant for the Time filter questions (Table 8.B), which is unsurprising considering the small sample size involved.

6 Discussion

6.1 Sensitivity of Results to Functional Form

Since the dependent variables are all binary limited dependent variables, it seems appropriate to use nonlinear models such as logit or probit. There are however good reasons to prefer OLS over a nonlinear model. The first is computational: estimation becomes extremely unwieldy and even impossible (in the sense that the log likelihood function cannot be maximized successfully) in specifications with a large number of dummy variables, such as the community and household fixed effect specifications. OLS does not suffer from this problem. Second, Angrist and Pischke (2009, p. 94) argue that although a nonlinear model may fit the conditional expectation function for limited dependent variables more closely than OLS, it comes at the cost of increased complexity.

I reestimate equation (4) using logit for all specifications and report the results in the appendix. The logit marginal effects are all very similar to the OLS counterparts, providing some reassurance that the results in this paper are not particularly sensitive to functional form.

6.2 Role of Parents

A natural consideration would be to account for the role of parents in the formation of preferences. Parents may conceivably influence their children's preferences through nurture (cultural transmission) or nature (genetic inheritance). A small number of recent papers have examined the subject of intergenerational transmission of preferences. The basic approach is to correlate the preferences of parents with that of their (adult) children. Dohmen et al. (2012) find significant intergenerational correlations in survey-elicited risk and trust attitudes in Germany. Charles and Hurst (2003) document significant intergenerational correlations in survey-derived risk tolerance in a 1996 subsample of the PSID. The disadvantage of this approach is it cannot separately identify the nurture and nature components of intergenerational transmission.

More recently, some economists have begun to identify the heritable component of intergenerational transmission using techniques from behavioral genetics. In their study of a sample of college students in Middlebury, VT, Carpenter et al. (2011) report that "the 7-repeat allele of the DRD4 gene that regulates dopamine uptake in the brain predicts risk-taking and time preferences in economic experiments that allow for ambiguity, losses and discounting" (p. 233). Cesarini et al. (2009), by comparing monozygotic twins, whose genes are identical,

to dizygotic twins in the Swedish Twin Registry, conclude that risk preferences are heritable, and that "the presumption that genetic transmission is small enough that it can be safely ignored" (p. 811) is inaccurate.

Unfortunately, I am unable to account for parental effects, genetic or otherwise, in my analyses. The reason is that my analytical sample of parents and adult children is highly selected from those who were coresident: 90 percent of the parents and children in my sample were coresident Ng (2011). In contrast, only 62 percent of the full IFLS-4 sample of adults coresided with a parent (Table 2). Parents and adult children who live together are more likely to share many of the same attitudes, including risk and time preferences. This means that parent-and-child preference correlations will likely be conflated with reasons for coresidence that have nothing to do with preference transmission, biasing upward any estimate of intergenerational transmission of preferences.

7 Conclusion

IFLS-4 has survey-elicited measures of risk aversion and rate of time preference for a large, nationally-representative sample of adults. I find that although most survey respondents were highly risk averse and highly impatient, there was considerable heterogeneity in these preferences. Furthermore, these preferences were systematically related to demographic characteristics, cognition, and interviewer characteristics. The main results are: a) men were less risk averse than women; b) older adults were more impatient; c) wealthier adults were less risk averse and less impatient; d) adults who performed better in a word recall test, a measure of cognition related to short-term memory, were less impatient; e) those with better word recall were more likely to exhibit preferences consistent with standard discounted expected utility theory; and f) interviewer characteristics had a significant effect on elicited preferences. My paper offers two main policy implications. First, because theory predicts very different behavior towards risk and uncertainty for people with different degrees of risk or time preference, policy instruments should account for such preferences. Second, interview survey design should account for unintended interviewer effects to minimize potential bias in responses.

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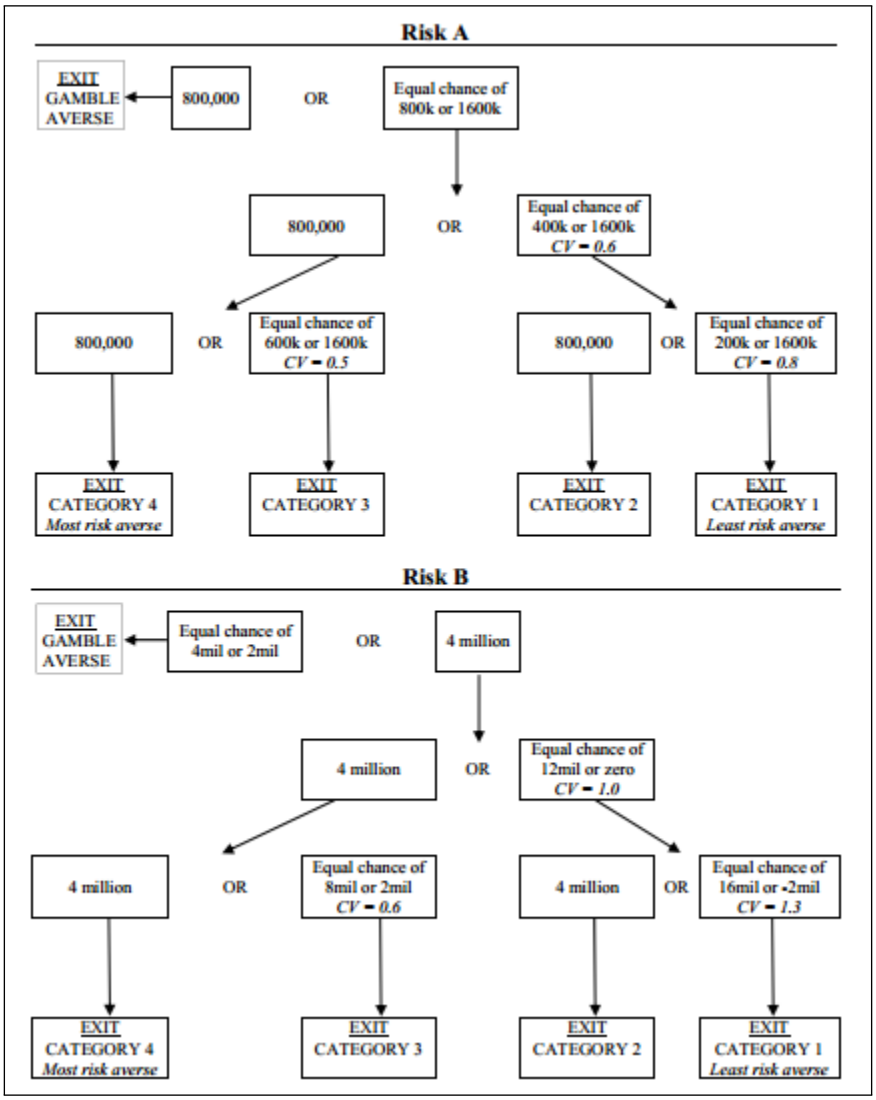
In the Risk modules, the questions posed to respondents are of the form:

Suppose you are given two options of receiving income. In the first option you are guaranteed X rupiah per month. In the second option you are guaranteed Y or Z rupiah, each with equal chance. Which option would you choose?

where monetary values X, Y and Z vary according to the flowcharts below.

Figure 1: Flowcharts illustrating elicitation of risk aversion in IFLS-4



Note: The coefficients of variation (CV) for uncertain payoffs are given in italics.

In the Time modules, the questions posed to respondents are of the form:

Suppose you have won a prize. How will you choose to be paid?

The flowcharts below contain the two choices available for each question, one an immediate but smaller sum of money, the other a later but larger sum.

Figure 2: Flowcharts illustrating elicitation of time preference in IFLS-4

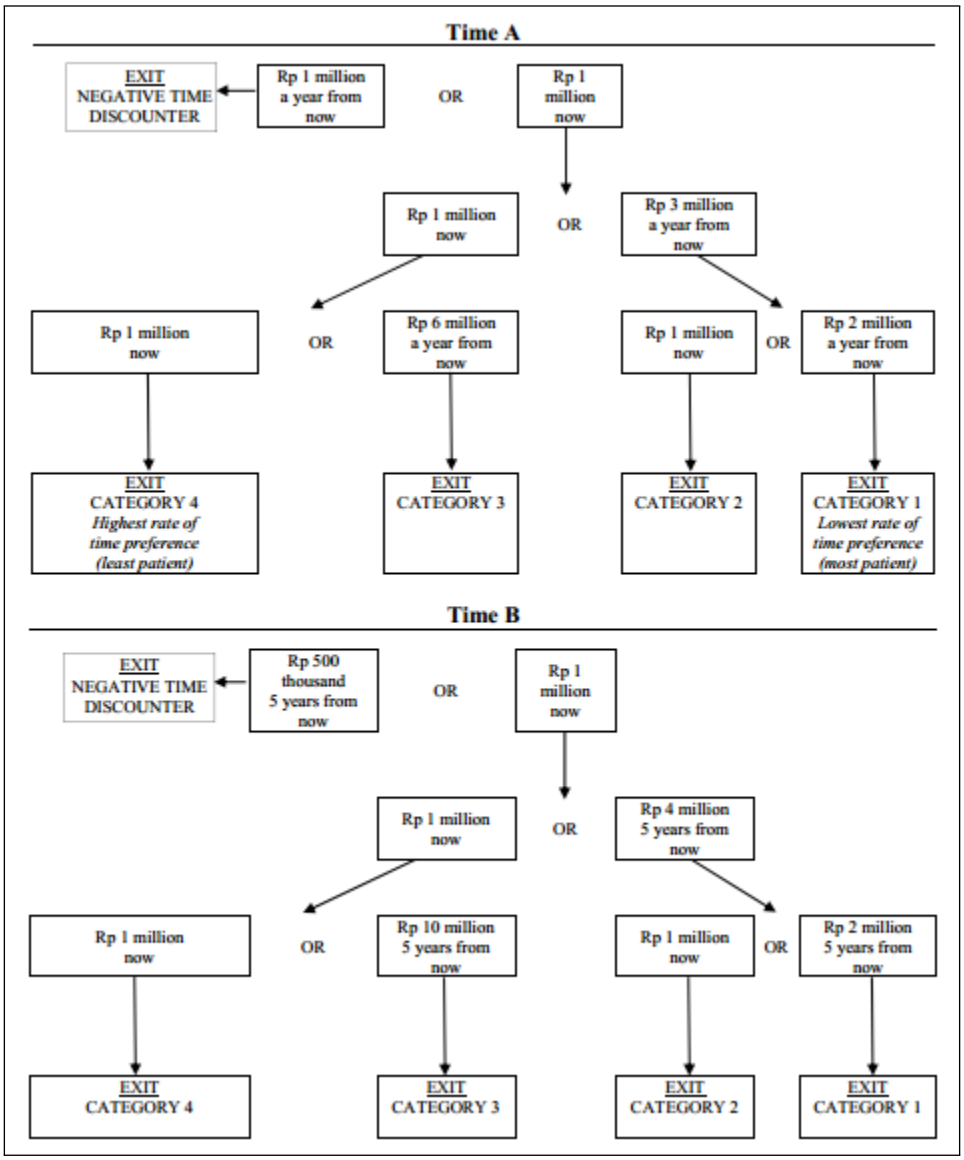


Figure 3: 13 Original IFLS Provinces

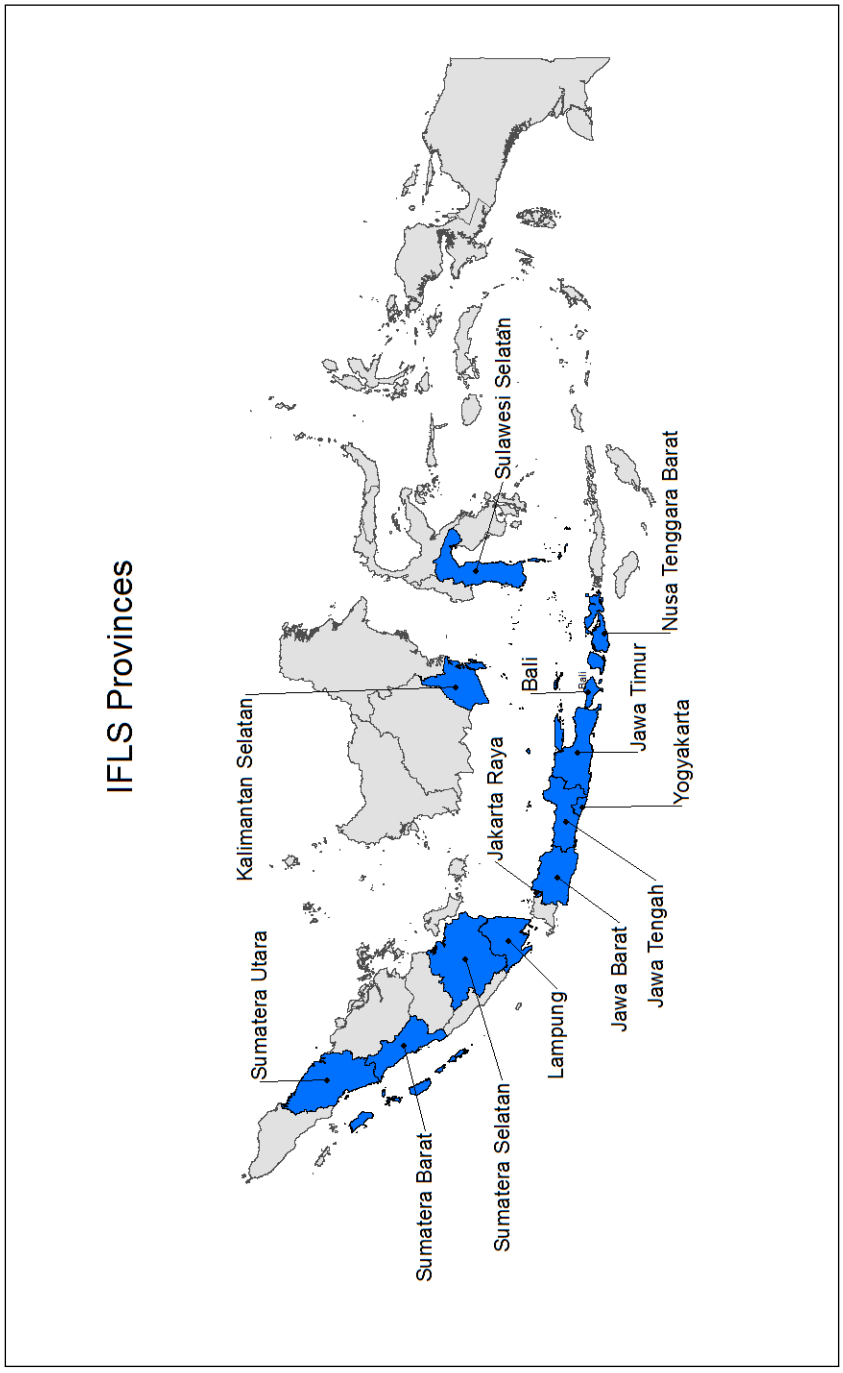


Table 1: Payoffs and corresponding preference coefficients

Panel A: Risk aversion

Category	Terminal payoff chosen	Terminal payoff foregone	Partial risk aversion coefficient, r
Risk A			
4	800,000 for sure	Equal chance of 600,000 or 1,600,000	(2.915, ∞)
3	Equal chance of 600,000 or 1,600,000	800,000 for sure	(0.999, 2.915)
2	800,000 for sure	Equal chance of 200,000 or 1,600,000	(0.306, 0.999)
1	Equal chance of 200,000 or 1,600,000	800,000 for sure	(0, 0.306)
Risk B			
4	4,000,000 for sure	Equal chance of 8,000,000 or 2,000,000	(0.999, ∞)
3	Equal chance of 8,000,000 or 2,000,000	4,000,000 for sure	(0.369, 0.999)
2	4,000,000 for sure	Equal chance of 16,000,000 or *loss* of 2,000,000	(0, 0.369)
1	Equal chance of 16,000,000 or *loss* of 2,000,000	4,000,000 for sure	(0, 0.369)*

Panel B: Time preference

Category	Terminal payoff chosen	Terminal payoff foregone	Constant annual discount rate, ρ
Time A			
4	1,000,000 now	6,000,000 a year from now	(5, ∞)
3	6,000,000 a year from now	1,000,000 now	(2, 5)
2	1,000,000 now	2,000,000 a year from now	(1, 2)
1	2,000,000 a year from now	1,000,000 now	(0, 1)
Time B			
4	1,000,000 now	10,000,000 five years from now	(0.585, ∞)
3	10,000,000 five years from now	1,000,000 now	(0.320, 0.585)
2	1,000,000 now	2,000,000 five years from now	(0.149, 0.320)
1	2,000,000 five years from now	1,000,000 now	(0, 0.149)

Table 2: Summary statistics

	Mean	Std Dev	Count
Preference parameters:			
Risk A = 1	0.26	0.44	16817
Risk A = 2	0.14	0.34	16817
Risk A = 3	0.09	0.29	16817
Risk A = 4	0.50	0.50	16817
Risk B = 1	0.06	0.23	26496
Risk B = 2	0.03	0.17	26496
Risk B = 3	0.07	0.26	26496
Risk B = 4	0.84	0.37	26496
Time A = 1	0.08	0.27	28487
Time A = 2	0.06	0.24	28487
Time A = 3	0.15	0.35	28487
Time A = 4	0.72	0.45	28487
Time B = 1	0.02	0.14	28818
Time B = 2	0.04	0.19	28818
Time B = 3	0.13	0.34	28818
Time B = 4	0.81	0.39	28818
Gamble averse A	0.42	0.49	28876
Gamble averse B	0.08	0.28	28879
Negative time discounting A	0.02	0.14	29026
Negative time discounting B	0.01	0.08	29025
Socio-demographics:			
Male	0.48	0.50	29054
Age (years)	36.87	15.62	29051
Age 15-24 years	0.24	0.43	29050
Age 25-34	0.27	0.45	29050
Age 35-44	0.20	0.40	29050
Age 45-54	0.14	0.34	29050
Age 55-64	0.08	0.27	29050
Age $\geq$ 65	0.07	0.25	29050
Years of schooling	8.10	4.36	28755
(max) edlevel07	1.90	1.01	28756
Highest education level: No education	0.07	0.25	28756
Highest education level: Elementary	0.35	0.48	28756
Highest education level: Junior high	0.19	0.39	28756
Highest education level: Senior high/University	0.39	0.49	28756
Monthly household expenditure per capita (Rp)	412179.89	458538.04	28915
Rural	0.46	0.50	28886
Muslim	0.89	0.31	29054
Coresident with parent	0.37	0.48	20557
Cognition:			
Word recall (average #correct out of 10)	4.37	1.89	28387
Interviewer characteristics:			
Male interviewer	0.54	0.50	27740
Interviewer age (years)	25.83	3.40	27571
Interviewer older than respondent	0.27	0.44	27568

Interviewer same sex as respondent	0.60	0.49	27740
Has past interviewer experience	0.76	0.43	27740
Plan to continue studies	0.68	0.47	27740
Has bachelor's degree	0.91	0.29	27740
Monthly income in last job (Rp)	1805964.77	1163497.24	24667

Table 3: Cross tabulations of preferences A and B

Panel A: Risk A and Risk B

Risk A \ Risk B	1	2	3	4	Total
1	1048	281	590	1491	3410
2	114	137	389	1480	2120
3	74	61	441	923	1499
4	73	99	279	7780	8231
Total	1309	578	1699	11674	15260

Panel B: Time A and Time B

Time A \ Time B	1	2	3	4	Total
1	352	515	683	707	2257
2	41	286	535	810	1672
3	80	144	1783	2133	4140
4	50	98	722	19460	20330
Total	523	1043	3723	23110	28399

Panel C: Gamble Averse A and Gamble Averse B

GA A \ GA B	0	1	Total
0	15260	1539	16799
1	11202	836	12038
Total	26462	2375	28837

Panel D: NTD A and NTD B

NTD A \ NTD B	0	1	Total
0	28399	86	28485
1	418	121	539
Total	28817	207	29024

Table 4: Correlation of preference parameters within married couples

	(1) Risk A	(2) Risk B	(3) Time A	(4) Time B	(5) GA A	(6) GA B	(7) NTD A	(8) NTD B
Wife's:								
Risk A	0.243							
	(0.023)***							
Risk B		0.245						
		(0.025)***						
Time A			0.191					
			(0.017)***					
Time B				0.197				
				(0.018)***				
GA A					0.173			
					(0.016)***			
GA B						0.158		
						(0.023)***		
NTD A							0.061	
							(0.029)*	
NTD B								0.055
								(0.041)
_cons	0.344	0.616	0.595	0.661	0.311	0.079	0.016	0.010
	(0.019)***	(0.024)***	(0.016)***	(0.017)***	(0.011)***	(0.005)***	(0.002)***	(0.001)***
N	1761	4117	4733	4812	4850	4846	4890	4890

Dependent variables in columns 1-8 are husband's. Risk = 1 for category 4 (most risk averse), and 0 for categories 1-3 (less risk averse). Time = 1 for category 4 (most impatient) and 0 for categories 1-3 (less impatient). GA = 1 if gamble averse, 0 otherwise. NTD = 1 if negative time discounting, 0 otherwise.All regressions are OLS. Standard errors, in parentheses, are clustered by community ID. ***p<0.01 **p<0.05 *p<0.10

Table 5.A: OLS Estimates of Correlates of Risk Preference

	(1) Risk A	(2) Risk A	(3) Risk A	(4) Risk B	(5) Risk B	(6) Risk B
Male	-0.083	-0.086	-0.087	-0.060	-0.062	-0.066
	(0.008)***	(0.008)***	(0.014)***	(0.005)***	(0.005)***	(0.008)***
Age categories (years):						
25-34	-0.009	-0.009	-0.026	0.002	-0.003	0.000
	(0.012)	(0.012)	(0.027)	(0.007)	(0.007)	(0.012)
35-44	-0.016	-0.024	-0.025	0.005	-0.005	0.002
	(0.013)	(0.013)	(0.029)	(0.008)	(0.009)	(0.014)
45-54	0.002	0.002	0.021	0.016	0.011	0.020
	(0.016)	(0.017)	(0.033)	(0.009)	(0.009)	(0.016)
55-64	0.016	0.021	0.048	0.032	0.027	0.042
	(0.021)	(0.020)	(0.042)	(0.011)**	(0.010)*	(0.019)*
65+	0.018	0.028	0.082	0.041	0.041	0.046
	(0.026)	(0.024)	(0.056)	(0.014)**	(0.013)**	(0.024)
Education level:						
Elementary	-0.037	-0.036	-0.039	0.024	0.022	-0.001
	(0.028)	(0.023)	(0.056)	(0.013)	(0.010)*	(0.020)
Junior high	-0.029	-0.006	0.014	0.012	0.012	-0.002
	(0.031)	(0.026)	(0.058)	(0.014)	(0.011)	(0.023)
Senior high/university	-0.028	-0.007	0.005	-0.010	-0.005	-0.021
	(0.032)	(0.027)	(0.061)	(0.015)	(0.012)	(0.024)
Word recall z-score	-0.006	-0.006	0.003	-0.005	-0.004	-0.002
	(0.006)	(0.006)	(0.011)	(0.003)	(0.004)	(0.005)
Muslim	-0.002	0.015	0.067	-0.005	-0.005	-0.050
	(0.019)	(0.026)	(0.148)	(0.011)	(0.014)	(0.047)
Log PCE	-0.027	-0.035		-0.015	-0.020	
	(0.008)**	(0.007)***		(0.005)**	(0.004)***	
Rural	-0.050	-0.040	-0.139	-0.020	-0.022	-0.021
	(0.019)**	(0.060)	(0.149)	(0.010)	(0.039)	(0.074)
Constant	0.949	1.011	0.557	1.050	1.120	0.926
	(0.115)***	(0.099)***	(0.158)***	(0.062)***	(0.060)***	(0.059)***
Community FE	No	Yes	No	No	Yes	No
Household FE	No	No	Yes	No	No	Yes
Mean of dependent variable	0.500	0.500	0.500	0.840	0.840	0.840
Joint significance of (p-value):						
Age categories	0.412	0.051	0.152	0.018	0.001	0.122
Education levels	0.522	0.037	0.197	0.000	0.001	0.337
Observations	16201	16201	16201	25397	25397	25397

Risk = 1 for category 4 (most risk averse), and 0 for categories 1-3 (less risk averse). All regressions are OLS. Omitted category for age: 15-24, for education: no education. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table 5.B: OLS Estimates of Correlates of Time Preference

	(1) Time A	(2) Time A	(3) Time A	(4) Time B	(5) Time B	(6) Time B
Male	-0.011	-0.012	-0.012	-0.011	-0.011	-0.012
	(0.006)	(0.006)*	(0.008)	(0.005)*	(0.005)*	(0.008)
Age categories (years):						
25-34	0.048	0.047	0.047	0.028	0.025	0.019
	(0.008)***	(0.009)***	(0.015)**	(0.007)***	(0.007)***	(0.013)
35-44	0.046	0.053	0.079	0.039	0.038	0.047
	(0.009)***	(0.010)***	(0.016)***	(0.008)***	(0.008)***	(0.013)***
45-54	0.047	0.055	0.081	0.047	0.051	0.062
	(0.011)***	(0.011)***	(0.017)***	(0.009)***	(0.010)***	(0.015)***
55-64	0.072	0.086	0.112	0.078	0.082	0.099
	(0.012)***	(0.013)***	(0.021)***	(0.010)***	(0.011)***	(0.018)***
65+	0.095	0.113	0.121	0.082	0.089	0.097
	(0.014)***	(0.015)***	(0.027)***	(0.013)***	(0.013)***	(0.023)***
Education level:						
Elementary	-0.006	-0.012	-0.024	0.001	-0.008	-0.012
	(0.014)	(0.015)	(0.023)	(0.011)	(0.012)	(0.018)
Junior high	-0.009	-0.016	-0.032	0.004	-0.004	-0.005
	(0.016)	(0.017)	(0.028)	(0.013)	(0.014)	(0.021)
Senior high/university	-0.061	-0.063	-0.066	-0.034	-0.043	-0.039
	(0.017)***	(0.017)***	(0.028)*	(0.014)*	(0.014)**	(0.022)
Word recall z-score	-0.016	-0.011	-0.006	-0.012	-0.009	-0.008
	(0.004)***	(0.004)**	(0.006)	(0.003)***	(0.003)**	(0.005)
Muslim	0.007	0.024	-0.019	0.025	0.002	0.001
	(0.021)	(0.017)	(0.076)	(0.018)	(0.014)	(0.066)
Log PCE	-0.020	-0.021		-0.018	-0.019	
	(0.005)***	(0.005)***		(0.004)***	(0.004)***	
Rural	0.013	-0.017	-0.039	0.006	-0.022	-0.031
	(0.011)	(0.041)	(0.081)	(0.009)	(0.037)	(0.066)
Constant	0.942	0.958	0.738	0.995	1.043	0.810
	(0.063)***	(0.070)***	(0.084)***	(0.052)***	(0.055)***	(0.071)***
Community FE	No	Yes	No	No	Yes	No
Household FE	No	No	Yes	No	No	Yes
Mean of dependent variable	0.710	0.710	0.710	0.810	0.810	0.810
Joint significance of (p-value):						
Age categories	0.000	0.000	0.000	0.000	0.000	0.000
Education levels	0.000	0.000	0.023	0.000	0.000	0.040
Observations	27274	27274	27274	27592	27592	27592

Time = 1 for category 4 (most impatient) and 0 for categories 1-3 (less impatient). All regressions are OLS. Omitted category for age: 15-24, for education: no education. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table 5.C: OLS Estimates of Correlates of Gamble Aversion

	(1) GA A	(2) GA A	(3) GA A	(4) GA B	(5) GA B	(6) GA B
Male	-0.077	-0.082	-0.092	0.011	0.012	0.010
	(0.007)***	(0.007)***	(0.010)***	(0.004)**	(0.004)**	(0.005)
Age categories (years):						
25-34	-0.011	-0.018	0.001	-0.003	-0.001	-0.005
	(0.008)	(0.008)*	(0.015)	(0.005)	(0.005)	(0.008)
35-44	-0.009	-0.004	0.023	-0.000	0.004	0.004
	(0.009)	(0.009)	(0.016)	(0.006)	(0.006)	(0.010)
45-54	0.007	0.014	0.043	-0.006	-0.004	-0.002
	(0.011)	(0.012)	(0.019)*	(0.006)	(0.007)	(0.010)
55-64	-0.004	0.014	0.054	-0.012	-0.014	-0.010
	(0.014)	(0.014)	(0.023)*	(0.008)	(0.008)	(0.013)
65+	0.043	0.078	0.096	-0.005	-0.007	-0.014
	(0.019)*	(0.018)***	(0.030)**	(0.010)	(0.010)	(0.017)
Education level:						
Elementary	0.020	0.022	0.016	0.002	-0.007	-0.006
	(0.017)	(0.016)	(0.027)	(0.010)	(0.009)	(0.017)
Junior high	0.002	0.000	0.009	0.003	-0.012	-0.020
	(0.019)	(0.017)	(0.029)	(0.011)	(0.010)	(0.019)
Senior high/university	-0.070	-0.063	-0.044	0.001	-0.012	-0.019
	(0.020)***	(0.018)***	(0.032)	(0.011)	(0.011)	(0.020)
Word recall z-score	-0.033	-0.021	-0.015	-0.009	-0.008	-0.003
	(0.004)***	(0.004)***	(0.007)*	(0.002)***	(0.002)***	(0.004)
Muslim	-0.038	0.015	-0.005	-0.015	-0.010	-0.010
	(0.012)**	(0.019)	(0.075)	(0.009)	(0.011)	(0.045)
Log PCE	-0.009	-0.021		0.001	0.004	
	(0.006)	(0.005)***		(0.003)	(0.003)	
Rural	0.016	-0.001	0.007	0.009	-0.016	-0.015
	(0.014)	(0.047)	(0.083)	(0.007)	(0.022)	(0.047)
Constant	0.610	0.716	0.450	0.077	0.059	0.110
	(0.074)***	(0.068)***	(0.083)***	(0.041)	(0.041)	(0.051)*
Community FE	No	Yes	No	No	Yes	No
Household FE	No	No	Yes	No	No	Yes
Mean of dependent variable	0.410	0.410	0.410	0.080	0.080	0.080
Joint significance of (p-value):						
Age categories	0.020	0.000	0.007	0.679	0.303	0.870
Education levels	0.000	0.000	0.001	0.981	0.604	0.443
Observations	27677	27677	27677	27684	27684	27684

GA = 1 if gamble averse, 0 otherwise. All regressions are OLS. Omitted category for age: 15-24, for education: no education. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table 5.D: OLS Estimates of Correlates of Negative Time Discounting

	(1) NTD A	(2) NTD A	(3) NTD A	(4) NTD B	(5) NTD B	(6) NTD B
Male	0.004	0.004	0.004	0.002	0.002	0.001
	(0.002)*	(0.002)*	(0.002)	(0.001)*	(0.001)*	(0.002)
Age categories (years):						
25-34	-0.011	-0.010	-0.007	-0.004	-0.003	-0.003
	(0.002)***	(0.003)***	(0.004)	(0.001)*	(0.002)	(0.003)
35-44	-0.012	-0.012	-0.016	-0.002	-0.001	-0.001
	(0.003)***	(0.003)***	(0.005)**	(0.002)	(0.002)	(0.003)
45-54	-0.015	-0.016	-0.021	-0.004	-0.003	-0.003
	(0.003)***	(0.003)***	(0.005)***	(0.002)	(0.002)	(0.004)
55-64	-0.019	-0.021	-0.023	-0.006	-0.005	-0.004
	(0.003)***	(0.004)***	(0.006)***	(0.002)*	(0.003)*	(0.004)
65+	-0.018	-0.019	-0.021	-0.005	-0.004	0.001
	(0.005)***	(0.005)***	(0.008)*	(0.003)	(0.003)	(0.006)
Education level:						
Elementary	0.000	-0.004	-0.010	-0.002	-0.004	-0.002
	(0.005)	(0.005)	(0.009)	(0.003)	(0.003)	(0.006)
Junior high	-0.005	-0.009	-0.015	-0.005	-0.006	-0.004
	(0.005)	(0.006)	(0.010)	(0.003)	(0.004)	(0.006)
Senior high/university	-0.003	-0.006	-0.014	-0.004	-0.006	-0.003
	(0.005)	(0.005)	(0.010)	(0.003)	(0.004)	(0.007)
Word recall z-score	-0.005	-0.004	-0.001	-0.002	-0.001	-0.001
	(0.001)***	(0.001)***	(0.002)	(0.001)**	(0.001)*	(0.001)
Muslim	-0.012	0.002	0.029	-0.007	-0.002	0.001
	(0.004)***	(0.005)	(0.021)	(0.002)**	(0.003)	(0.020)
Log PCE	0.001	-0.000		0.000	-0.000	
	(0.001)	(0.001)		(0.001)	(0.001)	
Rural	-0.003	0.004	0.000	-0.001	-0.001	0.000
	(0.002)	(0.006)	(0.017)	(0.001)	(0.002)	(0.000)
Constant	0.024	0.030	0.013	0.018	0.021	0.010
	(0.017)	(0.018)	(0.023)	(0.010)	(0.011)	(0.019)
Community FE	No	Yes	No	No	Yes	No
Household FE	No	No	Yes	No	No	Yes
Mean of dependent variable	0.020	0.020	0.020	0.010	0.010	0.010
Joint significance of (p-value):						
Age categories	0.000	0.000	0.000	0.091	0.254	0.810
Education levels	0.244	0.140	0.412	0.374	0.367	0.890
Observations	27787	27787	27787	27786	27786	27786

NTD = 1 if negative time discounting, 0 otherwise. All regressions are OLS. Omitted category for age: 15-24, for education: no education. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table 6.A: OLS Estimates of Correlates of Risk Preference: Interviewer Fixed Effects

	(1) Risk A	(2) Risk A	(3) Risk A	(4) Risk B	(5) Risk B	(6) Risk B
Male	-0.087	-0.085	-0.084	-0.059	-0.058	-0.061
	(0.007)***	(0.008)***	(0.015)***	(0.004)***	(0.005)***	(0.007)***
Age category (years):						
25-34	-0.011	-0.008	-0.010	0.005	0.003	0.005
	(0.010)	(0.011)	(0.026)	(0.006)	(0.007)	(0.012)
35-44	-0.027	-0.026	-0.012	0.003	-0.002	0.008
	(0.011)*	(0.012)*	(0.027)	(0.008)	(0.008)	(0.014)
45-54	-0.003	-0.002	0.024	0.020	0.017	0.028
	(0.014)	(0.015)	(0.033)	(0.008)*	(0.009)	(0.015)
55-64	0.008	0.022	0.069	0.034	0.031	0.051
	(0.017)	(0.018)	(0.041)	(0.010)***	(0.010)**	(0.019)**
65+	0.017	0.021	0.088	0.044	0.042	0.051
	(0.021)	(0.022)	(0.055)	(0.011)***	(0.012)***	(0.023)*
Education level:						
Elementary	-0.039	-0.032	-0.038	0.011	0.013	-0.005
	(0.021)	(0.021)	(0.053)	(0.010)	(0.010)	(0.019)
Junior high	-0.025	-0.015	0.005	0.002	0.001	-0.007
	(0.023)	(0.023)	(0.056)	(0.012)	(0.012)	(0.022)
Senior high/university	-0.020	-0.011	0.006	-0.017	-0.015	-0.023
	(0.024)	(0.024)	(0.058)	(0.012)	(0.012)	(0.023)
Word recall z-score	-0.001	-0.000	0.006	-0.002	-0.003	-0.002
	(0.004)	(0.005)	(0.011)	(0.003)	(0.003)	(0.005)
Muslim	0.033	0.017	0.028	0.006	-0.004	-0.062
	(0.015)*	(0.023)	(0.143)	(0.009)	(0.014)	(0.044)
Log PCE	-0.029	-0.026		-0.019	-0.016	
	(0.006)***	(0.006)***		(0.003)***	(0.004)***	
Rural	0.008	-0.072	-0.134	-0.007	-0.018	-0.023
	(0.010)	(0.060)	(0.144)	(0.007)	(0.037)	(0.071)
Constant	0.964	1.601	0.487	1.306	1.122	1.340
	(0.329)**	(0.317)***	(0.269)	(0.055)***	(0.166)***	(0.150)***
Community FE	No	Yes	No	No	Yes	No
Household FE	No	No	Yes	No	No	Yes
Mean of dependent variable	0.500	0.500	0.500	0.840	0.840	0.840
Joint significance of (p-value):						
Age categories	0.051	0.032	0.166	0.000	0.000	0.046
Education levels	0.088	0.143	0.306	0.000	0.000	0.460
Interviewer dummies	0.000	0.000	0.000	0.000	0.000	0.000
Observations	16200	16200	16200	25396	25396	25396

Risk = 1 for category 4 (most risk averse), and 0 for categories 1-3 (less risk averse). All regressions are OLS. Omitted category for age: 15-24, for education: no education. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table 6.B: OLS Estimates of Correlates of Time Preference: Interviewer Fixed Effects

	(1) Time A	(2) Time A	(3) Time A	(4) Time B	(5) Time B	(6) Time B
Male	0.000	-0.001	0.001	-0.006	-0.007	-0.007
	(0.005)	(0.005)	(0.008)	(0.005)	(0.005)	(0.007)
Age category (years):						
25-34	0.047	0.046	0.049	0.026	0.025	0.022
	(0.008)***	(0.008)***	(0.015)***	(0.007)***	(0.007)***	(0.013)
35-44	0.046	0.049	0.079	0.036	0.033	0.047
	(0.009)***	(0.009)***	(0.015)***	(0.007)***	(0.008)***	(0.013)***
45-54	0.052	0.055	0.082	0.049	0.049	0.062
	(0.010)***	(0.011)***	(0.016)***	(0.009)***	(0.010)***	(0.015)***
55-64	0.078	0.081	0.114	0.080	0.078	0.100
	(0.012)***	(0.012)***	(0.021)***	(0.010)***	(0.011)***	(0.018)***
65+	0.107	0.111	0.123	0.089	0.086	0.102
	(0.013)***	(0.015)***	(0.027)***	(0.011)***	(0.012)***	(0.023)***
Education level:						
Elementary	-0.013	-0.007	-0.007	-0.001	-0.005	0.001
	(0.012)	(0.013)	(0.022)	(0.010)	(0.011)	(0.018)
Junior high	-0.020	-0.014	-0.018	0.002	-0.003	0.007
	(0.013)	(0.015)	(0.026)	(0.011)	(0.013)	(0.021)
Senior high/university	-0.070	-0.063	-0.052	-0.036	-0.043	-0.026
	(0.013)***	(0.015)***	(0.027)	(0.011)**	(0.013)**	(0.021)
Word recall z-score	-0.011	-0.009	-0.004	-0.009	-0.009	-0.008
	(0.004)**	(0.004)*	(0.006)	(0.003)**	(0.003)**	(0.005)
Muslim	0.012	0.026	-0.063	0.013	0.003	-0.030
	(0.012)	(0.016)	(0.074)	(0.011)	(0.015)	(0.062)
Log PCE	-0.023	-0.019		-0.020	-0.017	
	(0.004)***	(0.005)***		(0.003)***	(0.004)***	
Rural	-0.000	-0.006	-0.039	0.000	-0.019	-0.042
	(0.007)	(0.041)	(0.081)	(0.007)	(0.038)	(0.068)
Constant	0.866	0.596	0.141	1.294	1.026	0.065
	(0.334)**	(0.346)	(0.188)	(0.054)***	(0.251)***	(0.186)
Community FE	No	Yes	No	No	Yes	No
Household FE	No	No	Yes	No	No	Yes
Mean of dependent variable	0.710	0.710	0.710	0.810	0.810	0.810
Joint significance of (p-value):						
Age categories	0.000	0.000	0.000	0.000	0.000	0.000
Education levels	0.000	0.000	0.022	0.000	0.000	0.058
Interviewer dummies	0.000	0.000	0.000	0.000	0.000	0.000
Observations	27273	27273	27273	27591	27591	27591

Time = 1 for category 4 (most impatient) and 0 for categories 1-3 (less impatient). All regressions are OLS. Omitted category for age: 15-24, for education: no education. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table 6.C: OLS Estimates of Correlates of Gamble Aversion: Interviewer Fixed Effects

	(1) GA A	(2) GA A	(3) GA A	(4) GA B	(5) GA B	(6) GA B
Male	-0.059	-0.060	-0.069	0.017	0.017	0.015
	(0.006)***	(0.006)***	(0.008)***	(0.003)***	(0.004)***	(0.005)**
Age category (years):						
25-34	-0.009	-0.010	0.004	-0.000	0.001	-0.005
	(0.007)	(0.007)	(0.014)	(0.004)	(0.005)	(0.008)
35-44	-0.003	-0.003	0.020	0.005	0.006	0.005
	(0.008)	(0.009)	(0.015)	(0.005)	(0.005)	(0.009)
45-54	0.017	0.020	0.049	-0.003	-0.003	-0.005
	(0.010)	(0.011)	(0.017)**	(0.006)	(0.006)	(0.010)
55-64	0.017	0.024	0.062	-0.008	-0.012	-0.011
	(0.012)	(0.012)	(0.022)**	(0.007)	(0.007)	(0.013)
65+	0.062	0.075	0.093	-0.003	-0.006	-0.012
	(0.015)***	(0.016)***	(0.028)**	(0.008)	(0.009)	(0.016)
Education level:						
Elementary	-0.005	0.013	0.015	-0.003	-0.009	-0.006
	(0.013)	(0.014)	(0.024)	(0.008)	(0.009)	(0.015)
Junior high	-0.025	-0.004	0.012	-0.004	-0.012	-0.017
	(0.014)	(0.014)	(0.026)	(0.009)	(0.010)	(0.017)
Senior high/university	-0.090	-0.068	-0.042	-0.009	-0.016	-0.022
	(0.015)***	(0.015)***	(0.028)	(0.009)	(0.010)	(0.019)
Word recall z-score	-0.024	-0.024	-0.018	-0.006	-0.006	-0.002
	(0.003)***	(0.003)***	(0.006)**	(0.002)**	(0.002)*	(0.004)
Muslim	0.007	0.022	0.003	-0.002	-0.003	0.009
	(0.011)	(0.016)	(0.076)	(0.008)	(0.010)	(0.040)
Log PCE	-0.022	-0.022		-0.001	0.000	
	(0.004)***	(0.004)***		(0.002)	(0.003)	
Rural	-0.001	0.033	0.033	-0.004	-0.015	-0.005
	(0.008)	(0.042)	(0.075)	(0.005)	(0.018)	(0.041)
Constant	0.457	0.415	1.376	0.023	-0.046	0.065
	(0.057)***	(0.193)*	(0.228)***	(0.037)	(0.132)	(0.155)
Community FE	No	Yes	No	No	Yes	No
Household FE	No	No	Yes	No	No	Yes
Mean of dependent variable	0.410	0.410	0.410	0.080	0.080	0.080
Joint significance of (p-value):						
Age categories	0.000	0.000	0.003	0.537	0.227	0.794
Education levels	0.000	0.000	0.001	0.465	0.375	0.381
Interviewer dummies	0.000	0.000	0.000	0.000	0.000	0.000
Observations	27676	27676	27676	27683	27683	27683

GA = 1 if gamble averse, 0 otherwise. All regressions are OLS. Omitted category for age: 15-24, for education: no education. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table 6.D: OLS Estimates of Correlates of Negative Time Discounting: Interviewer Fixed Effects

	(1) NTD A	(2) NTD A	(3) NTD A	(4) NTD B	(5) NTD B	(6) NTD B
Male	0.005	0.005	0.006	0.003	0.003	0.002
	(0.002)**	(0.002)**	(0.003)*	(0.001)**	(0.001)**	(0.002)
Age category (years):						
25-34	-0.010	-0.010	-0.007	-0.003	-0.002	-0.003
	(0.002)***	(0.002)***	(0.004)	(0.001)	(0.002)	(0.003)
35-44	-0.012	-0.012	-0.015	-0.001	-0.001	-0.001
	(0.003)***	(0.003)***	(0.005)**	(0.002)	(0.002)	(0.003)
45-54	-0.014	-0.015	-0.020	-0.002	-0.003	-0.003
	(0.003)***	(0.003)***	(0.005)***	(0.002)	(0.002)	(0.003)
55-64	-0.018	-0.019	-0.020	-0.004	-0.004	-0.002
	(0.003)***	(0.004)***	(0.006)**	(0.002)	(0.002)	(0.004)
65+	-0.017	-0.018	-0.020	-0.003	-0.003	0.002
	(0.004)***	(0.005)***	(0.009)*	(0.003)	(0.003)	(0.006)
Education level:						
Elementary	-0.003	-0.005	-0.011	-0.004	-0.005	-0.002
	(0.004)	(0.005)	(0.009)	(0.003)	(0.003)	(0.006)
Junior high	-0.007	-0.010	-0.015	-0.007	-0.007	-0.005
	(0.005)	(0.005)	(0.010)	(0.003)*	(0.004)	(0.006)
Senior high/university	-0.007	-0.008	-0.015	-0.007	-0.008	-0.004
	(0.005)	(0.005)	(0.010)	(0.003)*	(0.004)*	(0.007)
Word recall z-score	-0.003	-0.003	-0.001	-0.001	-0.001	-0.001
	(0.001)**	(0.001)**	(0.002)	(0.001)	(0.001)	(0.001)
Muslim	-0.003	0.006	0.027	-0.001	0.001	0.001
	(0.003)	(0.005)	(0.022)	(0.002)	(0.004)	(0.020)
Log PCE	-0.000	-0.000		-0.000	-0.000	
	(0.001)	(0.001)		(0.001)	(0.001)	
Rural	-0.000	0.002	0.006	-0.000	-0.002	0.001
	(0.002)	(0.006)	(0.018)	(0.001)	(0.003)	(0.002)
Constant	0.026	0.114	0.032	0.013	-0.003	0.002
	(0.018)	(0.086)	(0.047)	(0.011)	(0.017)	(0.033)
Community FE	No	Yes	No	No	Yes	No
Household FE	No	No	Yes	No	No	Yes
Mean of dependent variable	0.020	0.020	0.020	0.010	0.010	0.010
Joint significance of (p-value):						
Age categories	0.000	0.000	0.002	0.308	0.485	0.796
Education levels	0.214	0.195	0.454	0.141	0.206	0.826
Interviewer dummies	0.000	0.000	0.000	0.000	0.000	0.000
Observations	27786	27786	27786	27785	27785	27785

NTD = 1 if negative time discounting, 0 otherwise. All regressions are OLS. Omitted category for age: 15-24, for education: no education. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table 7.A: OLS Estimates of Correlates of Risk Preference: Interviewer Characteristics

	(1) Risk A	(2) Risk A	(3) Risk A	(4) Risk B	(5) Risk B	(6) Risk B
Male	-0.075	-0.077	-0.082	-0.059	-0.061	-0.064
	(0.009)***	(0.009)***	(0.018)***	(0.005)***	(0.006)***	(0.009)***
Age category (years):						
25-34	-0.060	-0.040	-0.056	-0.025	-0.017	-0.000
	(0.019)**	(0.019)*	(0.045)	(0.014)	(0.013)	(0.022)
35-44	-0.072	-0.053	-0.069	-0.027	-0.019	0.006
	(0.023)**	(0.024)*	(0.054)	(0.016)	(0.015)	(0.026)
45-54	-0.056	-0.025	-0.010	-0.016	-0.001	0.018
	(0.024)*	(0.025)	(0.056)	(0.016)	(0.015)	(0.027)
55-64	-0.041	-0.012	0.014	-0.003	0.012	0.043
	(0.027)	(0.028)	(0.066)	(0.017)	(0.015)	(0.030)
65+	-0.044	-0.014	0.036	0.007	0.026	0.049
	(0.031)	(0.030)	(0.076)	(0.018)	(0.017)	(0.034)
Education level:						
Elementary	-0.033	-0.033	-0.051	0.024	0.019	-0.000
	(0.029)	(0.024)	(0.060)	(0.014)	(0.012)	(0.023)
Junior high	-0.032	-0.009	0.005	0.006	0.004	-0.008
	(0.032)	(0.027)	(0.064)	(0.015)	(0.013)	(0.027)
Senior high/university	-0.034	-0.011	-0.009	-0.012	-0.010	-0.024
	(0.033)	(0.028)	(0.066)	(0.016)	(0.014)	(0.029)
Word recall z-score	-0.007	-0.012	0.003	-0.004	-0.001	0.000
	(0.006)	(0.006)	(0.012)	(0.004)	(0.004)	(0.006)
Muslim	-0.016	0.013	0.084	-0.020	0.004	-0.050
	(0.022)	(0.030)	(0.162)	(0.012)	(0.016)	(0.050)
Log PCE	-0.023	-0.035		-0.017	-0.023	
	(0.009)**	(0.008)***		(0.005)***	(0.004)***	
Rural	-0.051	-0.032	-0.111	-0.022	-0.019	-0.006
	(0.021)*	(0.061)	(0.153)	(0.012)	(0.042)	(0.082)
Interviewer characteristics:						
Past interview experience	-0.049	0.003	-0.004	-0.002	0.041	0.048
	(0.019)*	(0.020)	(0.047)	(0.011)	(0.012)***	(0.019)*
Plan to continue studies	-0.007	0.063	0.046	-0.025	0.020	0.035
	(0.015)	(0.017)***	(0.040)	(0.008)**	(0.010)*	(0.018)
Has bachelor's degree	0.079	0.122	0.098	0.006	0.028	0.017
	(0.023)***	(0.032)***	(0.079)	(0.014)	(0.017)	(0.030)
Log income in last job (monthly)	0.002	-0.001	-0.001	0.002	0.001	-0.003
	(0.001)	(0.002)	(0.003)	(0.001)	(0.001)	(0.002)
Interviewer older than respondent	-0.060	-0.030	-0.052	-0.034	-0.016	-0.002
	(0.021)**	(0.020)	(0.046)	(0.014)*	(0.013)	(0.022)
Interviewer same sex as respondent	-0.016	-0.001	0.014	-0.005	0.003	0.008
	(0.009)	(0.009)	(0.020)	(0.005)	(0.005)	(0.009)
Constant	0.938	0.903	0.479	1.119	1.078	0.869
	(0.117)***	(0.108)***	(0.202)*	(0.066)***	(0.068)***	(0.074)***
Community FE	No	Yes	No	No	Yes	No
Household FE	No	No	Yes	No	No	Yes
Mean of dependent variable	0.510	0.510	0.510	0.840	0.840	0.840
Joint significance of (p-value):						
Age categories	0.027	0.044	0.143	0.083	0.008	0.278
Education levels	0.739	0.154	0.236	0.001	0.002	0.477
Interviewer characteristics	0.000	0.001	0.626	0.023	0.000	0.062
Observations	14031	14031	14031	21641	21641	21641

Risk = 1 for category 4 (most risk averse), and 0 for categories 1-3 (less risk averse). All regressions are OLS. Omitted category for age: 15-24, for education: no education. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table 7.B: OLS Estimates of Correlates of Time Preference: Interviewer Characteristics

	(1) Time A	(2) Time A	(3) Time A	(4) Time B	(5) Time B	(6) Time B
Male	-0.007	-0.012	-0.007	-0.005	-0.009	-0.009
	(0.006)	(0.006)	(0.010)	(0.005)	(0.006)	(0.008)
Age category (years):						
25-34	0.043	0.038	0.025	0.046	0.039	0.029
	(0.014)**	(0.013)**	(0.025)	(0.011)***	(0.011)***	(0.019)
35-44	0.041	0.043	0.055	0.065	0.059	0.067
	(0.017)*	(0.017)*	(0.028)*	(0.014)***	(0.014)***	(0.023)**
45-54	0.036	0.040	0.053	0.068	0.066	0.071
	(0.018)*	(0.018)*	(0.031)	(0.015)***	(0.015)***	(0.024)**
55-64	0.061	0.074	0.094	0.097	0.098	0.117
	(0.018)***	(0.019)***	(0.033)**	(0.016)***	(0.016)***	(0.028)***
65+	0.081	0.097	0.095	0.098	0.102	0.108
	(0.021)***	(0.022)***	(0.039)*	(0.016)***	(0.017)***	(0.032)***
Education level:						
Elementary	-0.011	-0.013	-0.026	0.003	-0.006	-0.006
	(0.014)	(0.016)	(0.028)	(0.011)	(0.013)	(0.021)
Junior high	-0.018	-0.016	-0.036	0.004	0.002	0.004
	(0.016)	(0.019)	(0.033)	(0.014)	(0.015)	(0.024)
Senior high/university	-0.076	-0.071	-0.079	-0.045	-0.050	-0.046
	(0.017)***	(0.019)***	(0.033)*	(0.014)**	(0.016)**	(0.025)
Word recall z-score	-0.018	-0.011	-0.004	-0.012	-0.009	-0.005
	(0.004)***	(0.004)*	(0.007)	(0.004)***	(0.004)*	(0.006)
Muslim	-0.019	0.019	0.003	-0.004	-0.003	0.012
	(0.019)	(0.019)	(0.084)	(0.014)	(0.016)	(0.071)
Log PCE	-0.020	-0.020		-0.016	-0.016	
	(0.005)***	(0.006)***		(0.004)***	(0.004)***	
Rural	0.014	0.017	-0.005	0.007	-0.008	-0.003
	(0.012)	(0.046)	(0.102)	(0.010)	(0.042)	(0.085)
Interviewer characteristics:						
Past interview experience	-0.059	-0.023	-0.015	-0.027	0.004	0.008
	(0.013)***	(0.014)	(0.024)	(0.010)**	(0.012)	(0.020)
Plan to continue studies	-0.018	-0.030	-0.023	-0.004	-0.004	-0.004
	(0.010)	(0.010)**	(0.019)	(0.008)	(0.009)	(0.017)
Has bachelor's degree	-0.039	-0.025	0.011	-0.016	0.002	0.027
	(0.013)**	(0.015)	(0.028)	(0.013)	(0.013)	(0.025)
Log income in last job (monthly)	0.000	-0.001	0.000	0.001	-0.000	0.001
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)
Interviewer older than respondent	-0.002	-0.011	-0.021	0.028	0.020	0.016
	(0.015)	(0.014)	(0.025)	(0.012)*	(0.012)	(0.020)
Interviewer same sex as respondent	-0.008	-0.000	-0.005	-0.006	0.000	-0.006
	(0.006)	(0.007)	(0.011)	(0.005)	(0.006)	(0.009)
Constant	1.080	1.025	0.744	1.009	0.999	0.741
	(0.069)***	(0.083)***	(0.108)***	(0.056)***	(0.064)***	(0.093)***
Community FE	No	Yes	No	No	Yes	No
Household FE	No	No	Yes	No	No	Yes
Mean of dependent variable	0.710	0.710	0.710	0.810	0.810	0.810
Joint significance of (p-value):						
Age categories	0.001	0.000	0.063	0.000	0.000	0.001
Education levels	0.000	0.000	0.012	0.000	0.000	0.005
Interviewer characteristics	0.000	0.007	0.813	0.003	0.743	0.784
Observations	23117	23117	23117	23367	23367	23367

Time = 1 for category 4 (most impatient) and 0 for categories 1-3 (less impatient). All regressions are OLS. Omitted category for age: 15-24, for education: no education. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table 7.C: OLS Estimates of Correlates of Gamble Aversion: Interviewer Characteristics

	(1) GA A	(2) GA A	(3) GA A	(4) GA B	(5) GA B	(6) GA B
Male	-0.067	-0.072	-0.075	0.011	0.013	0.008
	(0.007)***	(0.008)***	(0.011)***	(0.004)**	(0.004)**	(0.006)
Age category (years):						
25-34	-0.033	-0.027	-0.023	0.006	0.005	0.001
	(0.015)*	(0.014)	(0.025)	(0.007)	(0.008)	(0.014)
35-44	-0.038	-0.021	-0.005	0.010	0.007	0.003
	(0.018)*	(0.017)	(0.030)	(0.009)	(0.010)	(0.017)
45-54	-0.021	0.001	0.009	0.003	-0.002	-0.000
	(0.019)	(0.018)	(0.031)	(0.010)	(0.010)	(0.017)
55-64	-0.040	-0.006	0.017	-0.005	-0.012	-0.011
	(0.020)	(0.020)	(0.035)	(0.010)	(0.011)	(0.020)
65+	0.006	0.058	0.066	-0.005	-0.010	-0.016
	(0.024)	(0.024)*	(0.042)	(0.012)	(0.013)	(0.023)
Education level:						
Elementary	0.030	0.030	0.024	-0.000	-0.007	0.000
	(0.018)	(0.017)	(0.030)	(0.011)	(0.010)	(0.018)
Junior high	0.010	0.008	0.014	-0.002	-0.015	-0.018
	(0.020)	(0.019)	(0.034)	(0.011)	(0.011)	(0.021)
Senior high/university	-0.056	-0.054	-0.037	-0.006	-0.016	-0.017
	(0.022)**	(0.020)**	(0.038)	(0.012)	(0.012)	(0.023)
Word recall z-score	-0.035	-0.019	-0.010	-0.011	-0.009	-0.004
	(0.005)***	(0.005)***	(0.007)	(0.002)***	(0.003)***	(0.004)
Muslim	-0.057	0.012	-0.024	-0.015	-0.008	0.018
	(0.014)***	(0.022)	(0.087)	(0.010)	(0.011)	(0.045)
Log PCE	-0.005	-0.019		-0.002	0.002	
	(0.006)	(0.005)***		(0.003)	(0.003)	
Rural	0.014	0.028	0.061	0.008	-0.010	-0.015
	(0.015)	(0.049)	(0.094)	(0.007)	(0.024)	(0.052)
Interviewer characteristics:						
Past interview experience	-0.064	-0.012	0.029	0.019	0.011	0.000
	(0.017)***	(0.019)	(0.035)	(0.007)**	(0.007)	(0.013)
Plan to continue studies	-0.058	-0.060	-0.027	0.013	0.005	0.001
	(0.013)***	(0.017)***	(0.029)	(0.006)*	(0.009)	(0.015)
Has bachelor's degree	0.058	0.044	0.024	0.043	0.036	0.041
	(0.021)**	(0.026)	(0.042)	(0.007)***	(0.008)***	(0.015)**
Log income in last job (monthly)	0.007	0.006	0.005	0.000	0.001	0.002
	(0.001)***	(0.001)***	(0.002)	(0.000)	(0.000)	(0.001)*
Interviewer older than respondent	-0.026	-0.019	-0.035	0.015	0.007	0.010
	(0.015)	(0.015)	(0.025)	(0.008)	(0.009)	(0.015)
Interviewer same sex as respondent	-0.001	0.005	0.010	0.004	-0.001	0.000
	(0.007)	(0.007)	(0.010)	(0.004)	(0.004)	(0.006)
Constant	0.528	0.595	0.352	0.038	0.014	0.001
	(0.085)***	(0.083)***	(0.113)**	(0.046)	(0.049)	(0.059)
Community FE	No	Yes	No	No	Yes	No
Household FE	No	No	Yes	No	No	Yes
Mean of dependent variable	0.400	0.400	0.400	0.080	0.080	0.080
Joint significance of (p-value):						
Age categories	0.020	0.000	0.106	0.347	0.167	0.902
Education levels	0.000	0.000	0.003	0.747	0.342	0.322
Interviewer characteristics	0.000	0.000	0.196	0.000	0.000	0.021
Observations	23425	23425	23425	23433	23433	23433

GA = 1 if gamble averse, 0 otherwise. All regressions are OLS. Omitted category for age: 15-24, for education: no education. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table 7.D: OLS Estimates of Correlates of Negative Time Discounting: Interviewer Characteristics

	(1) NTD A	(2) NTD A	(3) NTD A	(4) NTD B	(5) NTD B	(6) NTD B
Male	0.004	0.005	0.005	0.003	0.003	0.001
	(0.002)*	(0.002)**	(0.003)	(0.001)**	(0.001)*	(0.002)
Age category (years):						
25-34	-0.010	-0.006	-0.003	-0.005	-0.002	-0.003
	(0.004)**	(0.004)	(0.006)	(0.002)**	(0.002)	(0.004)
35-44	-0.011	-0.007	-0.010	-0.003	-0.000	-0.002
	(0.004)**	(0.004)	(0.008)	(0.003)	(0.003)	(0.005)
45-54	-0.013	-0.011	-0.012	-0.005	-0.002	-0.001
	(0.004)**	(0.004)*	(0.008)	(0.003)	(0.003)	(0.005)
55-64	-0.017	-0.014	-0.012	-0.006	-0.004	-0.001
	(0.005)***	(0.005)**	(0.008)	(0.003)*	(0.003)	(0.006)
65+	-0.016	-0.013	-0.014	-0.004	-0.001	0.003
	(0.006)**	(0.006)*	(0.011)	(0.004)	(0.004)	(0.008)
Education level:						
Elementary	0.004	0.000	-0.004	0.001	-0.000	0.002
	(0.004)	(0.004)	(0.007)	(0.003)	(0.003)	(0.004)
Junior high	0.002	-0.004	-0.008	0.001	-0.001	0.002
	(0.004)	(0.005)	(0.008)	(0.003)	(0.003)	(0.005)
Senior high/university	0.003	-0.001	-0.010	0.002	-0.000	0.002
	(0.004)	(0.005)	(0.009)	(0.003)	(0.003)	(0.006)
Word recall z-score	-0.005	-0.004	-0.001	-0.002	-0.002	-0.001
	(0.001)***	(0.001)***	(0.002)	(0.001)**	(0.001)*	(0.001)
Muslim	-0.011	-0.001	0.040	-0.005	-0.003	0.012
	(0.004)**	(0.006)	(0.027)	(0.003)	(0.003)	(0.022)
Log PCE	0.000	-0.001		-0.000	-0.001	
	(0.001)	(0.001)		(0.001)	(0.001)	
Rural	-0.004	-0.001	0.001	-0.000	-0.003	0.001
	(0.002)	(0.004)	(0.002)	(0.001)	(0.003)	(0.001)
Interviewer characteristics:						
Past interview experience	0.002	0.002	0.002	0.002	0.005	0.005
	(0.002)	(0.003)	(0.007)	(0.002)	(0.002)*	(0.004)
Plan to continue studies	-0.002	-0.000	0.001	0.001	0.000	-0.002
	(0.002)	(0.003)	(0.005)	(0.001)	(0.002)	(0.002)
Has bachelor's degree	0.004	0.007	0.001	0.001	0.002	0.000
	(0.003)	(0.004)	(0.007)	(0.002)	(0.003)	(0.005)
Log income in last job (monthly)	0.000	0.000	0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Interviewer older than respondent	0.001	0.005	0.008	-0.002	0.000	0.001
	(0.003)	(0.003)	(0.006)	(0.002)	(0.002)	(0.004)
Interviewer same sex as respondent	-0.002	-0.001	-0.002	-0.002	-0.002	-0.002
	(0.002)	(0.002)	(0.003)	(0.001)	(0.001)	(0.002)
Constant	0.027	0.026	-0.020	0.018	0.015	-0.011
	(0.018)	(0.020)	(0.030)	(0.011)	(0.012)	(0.022)
Community FE	No	Yes	No	No	Yes	No
Household FE	No	No	Yes	No	No	Yes
Mean of dependent variable	0.020	0.020	0.020	0.010	0.010	0.010
Joint significance of (p-value):						
Age categories	0.011	0.049	0.527	0.070	0.552	0.856
Education levels	0.516	0.401	0.662	0.905	0.986	0.946
Interviewer characteristics	0.292	0.036	0.815	0.310	0.163	0.807
Observations	23517	23517	23517	23516	23516	23516

NTD = 1 if negative time discounting, 0 otherwise. All regressions are OLS. Omitted category for age: 15-24, for education: no education. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table 8.A: Do Interviewers Influence Change in Answer to Risk Filter Question?

	(1) Change A	(2) Change A	(3) Change B	(4) Change B
Word recall z-score	0.008	0.003	0.003	0.002
	(0.003)*	(0.004)	(0.010)	(0.013)
Interviewer characteristics:				
Past interview experience	-0.005	-0.008	-0.035	-0.030
	(0.011)	(0.015)	(0.030)	(0.046)
Plan to continue studies	0.033	0.030	-0.020	-0.016
	(0.007)***	(0.010)**	(0.022)	(0.035)
Has bachelor's degree	-0.030	-0.043	-0.161	-0.157
	(0.017)	(0.022)	(0.051)**	(0.100)
Log income in last job	-0.003	-0.002	-0.004	0.001
	(0.001)*	(0.002)	(0.002)*	(0.003)
Interviewer older than respondent	-0.002	0.003	-0.054	-0.037
	(0.012)	(0.012)	(0.030)	(0.041)
Interviewer same sex as respondent	-0.002	0.002	-0.008	-0.008
	(0.005)	(0.006)	(0.017)	(0.023)
Community FE	No	Yes	No	Yes
Household FE	No	No	No	No
Mean of dependent variable	0.080	0.080	0.170	0.170
Joint significance of (p-value):				
Age categories	0.714	0.031	0.028	0.350
Education levels	0.216	0.159	0.179	0.428
Interviewer characteristics	0.000	0.017	0.003	0.753
Observations	10202	10202	2152	2152

Dependent variable Change A(B) = 1 if respondent changed answer to Risk A (B) filter question from dominated payoff to dominating payoff, 0 if respondent stayed with dominated payoff. All regressions are OLS. Not shown: male, age categories, education levels, Muslim, log PCE, rural, constant term. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table 8.B: Do Interviewers Influence Change in Answer to Time Filter Question?

	(1) Change A	(2) Change A	(3) Change B	(4) Change B
Word recall z-score	0.003	0.015	-0.021	0.006
	(0.021)	(0.044)	(0.029)	(0.112)
Interviewer characteristics:				
Past interview experience	0.005	-0.026	0.067	0.465
	(0.047)	(0.105)	(0.064)	(0.298)
Plan to continue studies	0.048	-0.013	0.051	-0.334
	(0.032)	(0.115)	(0.062)	(0.293)
Has bachelor's degree	0.080	0.067	0.150	0.228
	(0.049)	(0.128)	(0.061)*	(0.350)
Log income in last job	-0.003	-0.004	0.006	0.006
	(0.004)	(0.012)	(0.003)*	(0.017)
Interviewer older than respondent	-0.038	0.015	0.139	-0.091
	(0.039)	(0.118)	(0.112)	(0.483)
Interviewer same sex as respondent	0.012	0.020	0.041	0.067
	(0.029)	(0.072)	(0.039)	(0.184)
Community FE	No	Yes	No	Yes
Household FE	No	No	No	No
Mean of dependent variable	0.140	0.140	0.110	0.110
Joint significance of (p-value):				
Age categories	0.367	0.927	0.198	0.694
Education levels	0.482	0.337	0.310	0.650
Interviewer characteristics	0.354	0.987	0.018	0.415
Observations	463	463	168	168

Dependent variable Change A(B) = 1 if respondent changed answer to Time A(B) filter question from dominated payoff to dominating payoff, 0 if respondent stayed with dominated payoff. All regressions are OLS. Not shown: male, age categories, education levels, Muslim, log PCE, rural, constant term. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table A.1: Logit Estimates: Base Specification

	Risk A	Risk B	Time A	Time B	GA A	GA B	NTD A	NTD B
Male (d)	-0.082	-0.057	-0.012	-0.010	-0.078	0.009	0.004	0.002
	(0.009)***	(0.005)***	(0.006)*	(0.005)	(0.007)***	(0.004)*	(0.002)*	(0.001)*
Age category (years):								
25-34 (d)	-0.011	-0.001	0.049	0.027	-0.002	0.002	-0.008	-0.002
	(0.012)	(0.007)	(0.007)***	(0.006)***	(0.009)	(0.005)	(0.002)***	(0.001)
35-44 (d)	-0.015	0.005	0.046	0.034	0.007	0.004	-0.008	-0.001
	(0.013)	(0.008)	(0.008)***	(0.007)***	(0.010)	(0.006)	(0.002)***	(0.001)
45-54 (d)	0.007	0.019	0.050	0.042	0.031	0.000	-0.009	-0.001
	(0.016)	(0.009)*	(0.010)***	(0.008)***	(0.012)**	(0.007)	(0.002)***	(0.001)
55-64 (d)	0.015	0.035	0.080	0.075	0.022	-0.005	-0.012	-0.003
	(0.020)	(0.010)***	(0.011)***	(0.009)***	(0.014)	(0.008)	(0.002)***	(0.002)
65+ (d)	0.030	0.049	0.105	0.085	0.090	0.005	-0.011	-0.003
	(0.025)	(0.011)***	(0.012)***	(0.010)***	(0.018)***	(0.009)	(0.002)***	(0.002)
Education level:								
Elementary (d)	-0.034	0.017	-0.030	-0.017	-0.002	-0.002	-0.004	-0.003
	(0.028)	(0.014)	(0.018)	(0.015)	(0.016)	(0.009)	(0.004)	(0.002)
Junior high (d)	-0.031	-0.001	-0.044	-0.024	-0.031	-0.003	-0.009	-0.005
	(0.031)	(0.016)	(0.020)*	(0.017)	(0.018)	(0.010)	(0.004)*	(0.001)***
Senior high/university (d)	-0.036	-0.023	-0.095	-0.060	-0.117	-0.009	-0.008	-0.005
	(0.032)	(0.016)	(0.021)***	(0.018)***	(0.019)***	(0.011)	(0.004)*	(0.002)**
Muslim (d)	-0.012	-0.007	0.002	0.021	-0.045	-0.020	-0.014	-0.007
	(0.022)	(0.011)	(0.022)	(0.019)	(0.014)**	(0.009)*	(0.004)***	(0.002)**
Log PCE	-0.024	-0.011	-0.017	-0.016	-0.008	-0.000	0.001	-0.000
	(0.009)**	(0.005)*	(0.005)***	(0.003)***	(0.006)	(0.003)	(0.001)	(0.001)
Rural (d)	-0.047	-0.019	0.015	0.007	0.022	0.011	-0.003	-0.001
	(0.021)*	(0.011)	(0.012)	(0.010)	(0.015)	(0.007)	(0.002)	(0.001)
Community FE	No	No	No	No	No	No	No	No
Household FE	No	No	No	No	No	No	No	No
Interviewer Team FE								
Mean of dependent variable	0.510	0.840	0.720	0.810	0.420	0.080	0.020	0.010
Joint significance of (p-value):								
Age categories	0.233	0.000	0.000	0.000	0.000	0.840	0.000	0.444
Education levels	0.664	0.000	0.000	0.000	0.000	0.636	0.023	0.037
Observations	14980	23662	25467	25770	25820	25822	25955	25954

All regressions are logit. Marginal effects reported. (d) indicates dummy variable. Omitted category for age: 15-24, for education: no education. Constant term not reported. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table A.2: Logit Estimates of Correlates with Word Recall Effects

	Risk A	Risk B	Time A	Time B	GA A	GA B	NTD A	NTD B
Word recall z-score	-0.006	-0.005	-0.017	-0.012	-0.034	-0.009	-0.004	-0.002
	(0.006)	(0.003)	(0.004)***	(0.003)***	(0.004)***	(0.002)***	(0.001)***	(0.001)**
Male (d)	-0.083	-0.060	-0.011	-0.011	-0.079	0.011	0.003	0.002
	(0.008)***	(0.005)***	(0.006)*	(0.005)*	(0.007)***	(0.004)**	(0.002)*	(0.001)*
Age categories (years):								
25-34 (d)	-0.009	0.001	0.044	0.024	-0.011	-0.003	-0.008	-0.003
	(0.012)	(0.007)	(0.007)***	(0.006)***	(0.009)	(0.005)	(0.002)***	(0.001)**
35-44 (d)	-0.016	0.005	0.042	0.034	-0.009	-0.001	-0.009	-0.002
	(0.013)	(0.008)	(0.008)***	(0.007)***	(0.009)	(0.005)	(0.002)***	(0.001)
45-54 (d)	0.002	0.015	0.042	0.041	0.007	-0.006	-0.010	-0.003
	(0.016)	(0.009)	(0.010)***	(0.008)***	(0.012)	(0.006)	(0.001)***	(0.001)*
55-64 (d)	0.016	0.031	0.067	0.071	-0.004	-0.011	-0.012	-0.004
	(0.021)	(0.010)**	(0.011)***	(0.009)***	(0.014)	(0.007)	(0.002)***	(0.001)**
65+ (d)	0.018	0.041	0.094	0.078	0.042	-0.005	-0.011	-0.003
	(0.026)	(0.012)***	(0.013)***	(0.011)***	(0.019)*	(0.009)	(0.002)***	(0.001)*
Education level:								
Elementary (d)	-0.038	0.024	-0.013	-0.006	0.022	0.002	-0.000	-0.001
	(0.028)	(0.014)	(0.018)	(0.015)	(0.017)	(0.009)	(0.004)	(0.002)
Junior high (d)	-0.030	0.010	-0.018	-0.005	0.005	0.003	-0.004	-0.003
	(0.032)	(0.015)	(0.019)	(0.017)	(0.019)	(0.010)	(0.004)	(0.002)
Senior high/university (d)	-0.030	-0.011	-0.068	-0.039	-0.070	0.001	-0.003	-0.003
	(0.032)	(0.017)	(0.020)***	(0.018)*	(0.020)***	(0.011)	(0.005)	(0.002)
Muslim (d)	-0.002	-0.005	0.007	0.024	-0.040	-0.015	-0.012	-0.006
	(0.020)	(0.011)	(0.021)	(0.018)	(0.013)**	(0.008)	(0.003)***	(0.002)**
Log PCE	-0.028	-0.015	-0.020	-0.018	-0.009	0.001	0.001	0.000
	(0.008)***	(0.004)***	(0.005)***	(0.003)***	(0.006)	(0.003)	(0.001)	(0.001)
Rural (d)	-0.053	-0.025	0.012	0.005	0.017	0.008	-0.003	-0.001
	(0.020)**	(0.010)*	(0.011)	(0.010)	(0.014)	(0.007)	(0.002)	(0.001)
Community FE	No	No	No	No	No	No	No	No
Household FE	No	No	No	No	No	No	No	No
Mean of dependent variable	0.500	0.840	0.710	0.810	0.410	0.080	0.020	0.010
Joint significance of (p-value):								
Age categories	0.425	0.021	0.000	0.000	0.022	0.688	0.000	0.049
Education levels	0.533	0.000	0.000	0.000	0.000	0.977	0.270	0.340
Observations	16201	25397	27274	27592	27677	27684	27787	27786

All regressions are logit. Marginal effects reported. (d) indicates dummy variable. Omitted category for age: 15-24, for education: no education. Constant term not reported. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table A.3: Logit Estimates with Interviewer Fixed Effects

	Risk A	Risk B	Time A	Time B	GA A	GA B	NTD A	NTD B
Word recall z-score	-0.001	-0.002	-0.012	-0.009	-0.031	-0.004	-0.003	-0.001
	(0.006)	(0.003)	(0.004)**	(0.003)**	(0.004)***	(0.002)**	(0.001)**	(0.001)
Male (d)	-0.112	-0.055	0.000	-0.006	-0.077	0.012	0.004	0.004
	(0.009)***	(0.004)***	(0.006)	(0.005)	(0.007)***	(0.002)***	(0.002)**	(0.002)**
Age category (years):								
25-34 (d)	-0.015	0.004	0.046	0.022	-0.009	-0.000	-0.008	-0.003
	(0.013)	(0.005)	(0.007)***	(0.006)***	(0.009)	(0.003)	(0.002)***	(0.002)*
35-44 (d)	-0.035	0.002	0.044	0.030	-0.003	0.004	-0.008	-0.001
	(0.014)*	(0.007)	(0.008)***	(0.006)***	(0.011)	(0.004)	(0.002)***	(0.002)
45-54 (d)	-0.005	0.017	0.050	0.042	0.022	-0.002	-0.010	-0.003
	(0.018)	(0.007)*	(0.010)***	(0.007)***	(0.013)	(0.004)	(0.002)***	(0.002)
55-64 (d)	0.010	0.029	0.075	0.069	0.022	-0.005	-0.011	-0.004
	(0.021)	(0.008)***	(0.011)***	(0.008)***	(0.015)	(0.005)	(0.002)***	(0.002)*
65+ (d)	0.024	0.038	0.105	0.077	0.083	-0.002	-0.010	-0.003
	(0.027)	(0.009)***	(0.012)***	(0.009)***	(0.021)***	(0.005)	(0.002)***	(0.003)
Education level:								
Elementary (d)	-0.056	0.009	-0.023	-0.008	-0.012	-0.002	-0.003	-0.005
	(0.029)	(0.011)	(0.016)	(0.013)	(0.017)	(0.006)	(0.004)	(0.003)*
Junior high (d)	-0.037	-0.001	-0.034	-0.009	-0.037	-0.003	-0.006	-0.007
	(0.032)	(0.012)	(0.018)	(0.014)	(0.018)*	(0.006)	(0.004)	(0.002)**
Senior high/university (d)	-0.030	-0.018	-0.084	-0.043	-0.122	-0.007	-0.006	-0.009
	(0.033)	(0.013)	(0.018)***	(0.014)**	(0.018)***	(0.006)	(0.004)	(0.004)*
Muslim (d)	0.041	0.006	0.012	0.012	0.009	-0.001	-0.003	-0.002
	(0.018)*	(0.008)	(0.013)	(0.011)	(0.013)	(0.005)	(0.003)	(0.003)
Log PCE	-0.037	-0.017	-0.024	-0.019	-0.030	-0.000	-0.001	-0.001
	(0.007)***	(0.003)***	(0.004)***	(0.003)***	(0.005)***	(0.002)	(0.001)	(0.001)
Rural (d)	0.016	-0.008	-0.001	0.000	0.001	-0.003	-0.000	-0.000
	(0.013)	(0.006)	(0.008)	(0.007)	(0.011)	(0.004)	(0.002)	(0.002)
Community FE	No	No	No	No	No	No	No	No
Household FE	No	No	No	No	No	No	No	No
Mean of dependent variable	0.500	0.840	0.710	0.800	0.420	0.090	0.030	0.020
Joint significance of (p-value):								
Age categories	0.040	0.000	0.000	0.000	0.000	0.536	0.000	0.320
Education levels	0.057	0.000	0.000	0.000	0.000	0.456	0.237	0.071
Interviewer dummies	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	16169	25065	27008	27098	27602	25864	19505	11535

All regressions are logit. Marginal effects reported. (d) indicates dummy variable. Omitted category for age: 15-24, for education: no education. Constant term not reported. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.

Table A.4: Logit Estimates with Interviewer Characteristics

	Risk A	Risk B	Time A	Time B	GA A	GA B	NTD A	NTD B
Word recall z-score	-0.007	-0.005	-0.019	-0.012	-0.035	-0.010	-0.004	-0.002
	(0.006)	(0.004)	(0.004)***	(0.004)***	(0.005)***	(0.002)***	(0.001)***	(0.001)**
Male (d)	-0.079	-0.058	-0.009	-0.007	-0.069	0.012	0.004	0.002
	(0.009)***	(0.005)***	(0.006)	(0.005)	(0.007)***	(0.004)**	(0.002)*	(0.001)*
Age category (years):								
25-34 (d)	-0.017	-0.001	0.041	0.022	-0.015	-0.005	-0.008	-0.003
	(0.013)	(0.007)	(0.008)***	(0.006)***	(0.009)	(0.005)	(0.002)***	(0.001)***
35-44 (d)	-0.019	0.003	0.038	0.033	-0.015	-0.003	-0.009	-0.001
	(0.014)	(0.009)	(0.009)***	(0.007)***	(0.010)	(0.005)	(0.002)***	(0.001)
45-54 (d)	-0.004	0.014	0.033	0.037	0.003	-0.009	-0.010	-0.002
	(0.018)	(0.010)	(0.011)**	(0.009)***	(0.013)	(0.006)	(0.002)***	(0.001)
55-64 (d)	0.013	0.028	0.059	0.066	-0.015	-0.015	-0.011	-0.003
	(0.023)	(0.012)*	(0.012)***	(0.010)***	(0.015)	(0.007)*	(0.002)***	(0.001)*
65+ (d)	0.009	0.037	0.084	0.070	0.030	-0.016	-0.010	-0.002
	(0.028)	(0.014)**	(0.015)***	(0.012)***	(0.020)	(0.008)*	(0.002)***	(0.002)
Education level:								
Elementary (d)	-0.036	0.025	-0.021	-0.004	0.030	0.001	0.005	0.001
	(0.030)	(0.015)	(0.019)	(0.015)	(0.018)	(0.009)	(0.005)	(0.002)
Junior high (d)	-0.036	0.005	-0.030	-0.004	0.011	-0.000	0.002	0.001
	(0.033)	(0.017)	(0.021)	(0.018)	(0.021)	(0.010)	(0.005)	(0.003)
Senior high/university (d)	-0.039	-0.011	-0.086	-0.050	-0.060	-0.005	0.003	0.001
	(0.034)	(0.018)	(0.021)***	(0.018)**	(0.022)**	(0.011)	(0.005)	(0.003)
Muslim (d)	-0.017	-0.019	-0.018	-0.003	-0.059	-0.015	-0.010	-0.005
	(0.022)	(0.011)	(0.018)	(0.014)	(0.015)***	(0.010)	(0.004)**	(0.003)
Log PCE	-0.024	-0.017	-0.021	-0.016	-0.005	-0.002	0.000	-0.000
	(0.009)**	(0.005)***	(0.005)***	(0.004)***	(0.006)	(0.003)	(0.001)	(0.001)
Rural (d)	-0.057	-0.027	0.014	0.006	0.014	0.008	-0.003	-0.000
	(0.022)**	(0.012)*	(0.012)	(0.010)	(0.015)	(0.007)	(0.002)	(0.001)
Interviewer characteristics:								
Past interview experience (d)	-0.054	-0.003	-0.060	-0.026	-0.067	0.020	0.002	0.002
	(0.020)**	(0.010)	(0.013)***	(0.010)*	(0.017)***	(0.007)**	(0.002)	(0.001)
Plan to continue studies (d)	-0.005	-0.022	-0.018	-0.006	-0.058	0.011	-0.002	0.001
	(0.016)	(0.008)**	(0.010)	(0.008)	(0.013)***	(0.006)	(0.002)	(0.001)
Log income in last job	0.002	0.002	0.000	0.001	0.008	0.000	0.000	-0.000
	(0.001)	(0.001)*	(0.001)	(0.001)	(0.001)***	(0.000)	(0.000)	(0.000)
Has bachelor's degree (d)	0.074	0.003	-0.041	-0.014	0.061	0.044	0.005	0.001
	(0.023)**	(0.013)	(0.014)**	(0.013)	(0.022)**	(0.006)***	(0.003)	(0.002)
Community FE	No	No	No	No	No	No	No	No
Household FE	No	No	No	No	No	No	No	No
Mean of dependent variable	0.510	0.840	0.710	0.810	0.400	0.080	0.020	0.010
Joint significance of (p-value):								
Age categories	0.324	0.102	0.000	0.000	0.031	0.296	0.000	0.055
Education levels	0.684	0.000	0.000	0.000	0.000	0.729	0.530	0.910
Interviewer characteristics	0.001	0.062	0.000	0.127	0.000	0.000	0.354	0.470
Observations	14123	21785	23277	23532	23590	23598	23682	23681

All regressions are logit. Marginal effects reported. (d) indicates dummy variable. Omitted category for age: 15-24, for education: no education. Constant term not reported. Standard errors in parentheses clustered by community ID. *p<0.10 **p<0.05 ***p<0.01.