Thailand Vietnam Socio Economic Panel

Health shocks and risk aversion: Panel and experimental evidence from Vietnam

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Health shocks and risk aversion: Panel and experimental evidence from Vietnam

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Abstract

This paper looks at individual risk behavior and disability in Vietnam, where many households live with a disabled family member. Due to the Vietnam war, disability is a common phenomenon and shapes individuals' daily life and decision making. Using longitudinal data of 2200 households in Vietnam and an instrumental variable strategy, we show that individuals who live with a disabled family member are more risk averse than others. In addition we employ field experiments and psychological primes to elicit risk and loss behavior of individuals living in the Vietnam province Ha-Thinh. The experimental results, underpin our panel results. We show in addition that a negative recollection of health issues, leads to a lower risk attitude of individuals who do not live with a disabled family member and that individuals who live with a disabled family member are less loss averse. Our findings are causal and contribute to existing studies showing that households who are characterized by higher backward risks are more risk averse than others.

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1 Introduction

Although poverty has decreased remarkably over the past years, vulnerability to poverty is still an issue and even more severe for certain groups of society in developing countries (Klasen et al., 2015; Gloede et al., 2015). Risk aversion can hold individuals back from opportunities with which they could generate higher income. High risk aversion thus can lead to foregone income and lower economic outcomes in general for those who are already worse off. However, with vulnerable living conditions people can hardly afford to take higher risks since adverse outcomes would endanger their survival (Gloede et al., 2015). Prospect theory suggests that risk aversion decreases with increasing wealth. In turn, individuals who are more risk-seeking will further generate higher incomes (Kahneman and Tversky, 1979), compared to those who are not. Living in circumstances where individuals are already more vulnerable to risks, thus making economic decisions with *"background risks"*, is known to increase risk aversion (Eeckhoudt et al., 2006; Harrison et al., 2007).

Especially in developing countries many individuals live with higher background risks due to different circumstances. For instance, they live in regions where they are frequently affected by weather shocks, income shocks, or other types of negative events. So far, little attention has been payed on decision behavior of people who are affected by health shocks and became disabled or live with a disabled family member. People living with a disability themselves or those who live with a disabled family member are facing much more difficult living conditions than others and thus live with a high backward risks as well. Therefore disability has become a relevant policy issue with an increasing body of evidence (WHO, 2011). Around 15 percent of the world population lives with a disability and most of them live in developing countries (WHO, 2011). Studies show that these individuals live more often in poverty than others, as they are not only facing higher costs of living, e.g. due to higher medical expenses, but are often economically excluded as well (WHO, 2011).

So far no knowledge exists on whether households in developing countries who live with a disabled family member differ in economic decision making. This is mainly because data is not easily available and stigma problems prevent individuals from reporting relevant information. Only few studies look at disability and most of them investigate the relationship between disability and poverty (Mont and Cuong, 2011; Mitra et al., 2013; Palmer, 2011). Mont and Cuong (2011), for instance analyze the economic effects for children when having a disabled parental part. The authors show that having a disabled parent reduces a child's probability of attending school by 16 percent and lowers the expected number of grades completed. Mont and Cuong (2011) further investigate the extra cost of living with a disability in Vietnam and show that there are extra costs associated with lower educational attainment. This implies in turn that people with a disability are more prone to poverty than others. Mitra et al. (2013) look at people

with a disability and multidimensional poverty. They find that disability is associated with higher multidimensional poverty. Moreover, Tanaka et al. (2010) also investigate risk behavior of individuals in Vietnam and find that mean village income is related to risk and time preferences. People living in poor villages are not necessarily afraid of uncertainty, in the sense of income variation, instead, they are averse to loss.

This paper investigates risk and loss behavior as well as investment decisions under risk of individuals living with a disability or with a disabled family member in Vietnam. Vietnam is characterized by the Indochina war (also called "The American War") between 1961 until 1971. During this period US bombing and toxic spraying was heavily affecting the population in Vietnam and led to long lasting health issues among those who directly participated as well as those who were indirectly affected.

Between 1961 and 1971, 19.5 million gallons of chemical herbicides for tactical defoliation and crop destruction were used (Stellman et al., 2003). The government of Vietnam says that 4 million of its citizens were exposed to toxic chemicals such as Agent Orange, and as many as 3 million have suffered illnesses because of it. These numbers include their children who were exposed indirectly and were born with birth defects. This toxic exposure has led to many disabled children and its negative effects are long lasting through DNA changes and can be observed even in further generations until today. The Red Cross of Vietnam estimates that up to 1 million people are disabled or have health problems due to this fact (Miguel and Roland, 2011). In order to target this severe issue, the government has run many awareness campaigns through the radio or TV. Individuals who were exposed knowingly or unknowingly trace health issues and disabilities back to this historical event. Stigma problems of disability are thus relatively low as compared to other countries. People who were affected, were also motivated to report their disability in order to receive special health support.

We combine two data sources for our empirical analyses. First, we make use of Panel Data from 2008 to 2017 of 2200 households in Vietnam, which captures disability and general risk behavior, as well as investment behavior. The data set also includes information on whether a health shock happened expectedly or unexpectedly. In order to explore the causal relationship of disability on risk behavior, we use an instrumental variable approach for our panel data analyses, with the share of subdistrict disability or health shocks as instruments.

Second, we employed a field experiment in the Vietnam province Ha-Thinh to elicit risk and loss behavior. Subjects for the experiment were randomly chosen after a listing of certain characteristics comprising individuals with disabilities and those who live with a disabled family member. We played a simple risk game similar to Dave et al. (2010), and a game to elicit loss behavior as in Gachter et al. (2010), with real financially incentives. we visited our subjects in their homes. Around half of our 804 subjects are those who live with a disabled family member or are disabled themselves. In order to investigate the change in behavior when

a positive or negative health event happens, we used a recollection technique of positive, negative and neutral events similar to (Callen et al., 2014). The type of prime was distributed randomly among our subjects. In both sources disability is measured identically, namely by the same questions as suggested by the UN Washington Group on Disability Statistics, asking about the degree of difficulty in seeing, hearing, walking, climbing steps, self-care and communicating, of the disabled person. This measure has been employed by several studies in a developing country context (Mont and Cuong, 2011; Mitra et al., 2013).

Our results show that individuals who live with a disabled family member are more risk averse than others and both panel results as well as experimental results show similar effects. Controlling for a variety of other characteristics, an individual, who lives with a disabled family member has a 14 percentage points lower probability of being risk seeking. Those subjects in our experiment who do not live with a disabled family member and had to recollect a negative health event (negative priming) became more risk averse after the priming, while we do not find any significant effects when those who live with a disabled family member received a positive priming. We moreover find that individuals who live with a disabled family member are also less likely to make investment decisions under risk. However, those individuals who live with a disabled family member have a 19 percentage points higher probability of not being loss averse in comparison to others. This indicates that gains and losses in experimental games with real money are weighted differently, as also reported by Gachter et al. (2010). Thus, losses do not seem to affect those who live with a disabled family member, as much as those who do not. All in all, our results show that differences in risk and loss aversion exist between those who live with a disabled family member and those who do not. As individuals in Vietnam are open towards the topic of disability, we argue that our measure of disability, as well as the behavior we are eliciting are not affected by much noise. As the share of people living with a disability or with a disabled family member in Vietnam is relatively high, due to the negative outcomes of the war in 1964, and people are not stigmatized when they are disabled, our analyses reflect representative results for behavioral differences in risk and loss behavior for people living with a disabled family member and those who do not.

2 Disability and risk aversion: Panel data evidence

2.1 Data

The Thailand Vietnam Socio Economic Panel (TVSEP) originates from the research project Impact of shocks on vulnerability to poverty: Consequences for the development of emerging South East Asian economies, funded by the Ger-

man Research Foundation (FOR 756). In Vietnam, the data was collected in three provinces Ha Tinh, Thua Thien Hue, and Dak Lak. The selection of households follows a three-stage stratified sampling strategy where provinces constitute strata and and primary sampling units are sub-districts (Gloede et al., 2015). Urban areas around the provincial capital city were excluded, as the focus lies on rural areas. Population density weights are employed in order to ensure representativity of the data at the sub-district level. Within each sub-district, two villages were chosen at random where approximately 10 households were interviewed. The total number of households in Vietnam comprises around 2000 households from 220 villages. The survey was firstly conducted in the year 2007 with follow-ups in 2008, 2010, 2013 and 2016. This paper uses the survey information from the years 2008 2010, 2013, 2016 and 2017, due to the lack of certain survey questions in 2007. In the survey round 2017 a rigorous section of questions on disability was included in the survey, including standard questions about disability also employed by the Word Bank. One question that ask "since when is the person disabled" allows us to trace the person back to the previous survey rounds. The survey itself is a typical household survey that comprises relevant information about socio-demographic characteristics of the respondent, economic information, and captures behavioral factors such as risk behavior. It allows us further to consider a large number of other variables that could affect risk behavior of individuals. Risk behavior is measured as using a question asking people about their willingness to take risks "in general". The respondent is asked "How willing are you to take risks, in general?"[1] Respondents rate their willingness on a scale from 0 to 10. Although risk attitude is often hard to capture, Dohmen et al. (2011a) find that responses to the general risk question are a reliable predictor of actual risky behavior.

2.2 Descriptive evidence

Table 1 shows descriptive statistics of our variables of interest *Risk Aversion* and *Investment Behavior* among those who are non-disabled (group A), disabled (group B) or live with someone in the household who has a disability (group C) in *Panel A*. There are no significant differences among individuals who are not disabled and those who are disabled in risk attitude. The mean value of risk attitude is 5.18 for those who live with a disability and 5.09 for those without (AvsB). Group differences are significant between those who are not disabled and those who are not disabled but live with a disabled family member (AvsC). The latter are slightly more risk seeking. Comparing those who are disabled and those who are not but live with someone who has a disability, the latter are also slightly more risk seeking (BvsC).

[1]There are also questions about risk behavior in specific circumstances, such as in traffic situations.

[insert Table 1]

Panel B shows our covariates employed in the empirical analysis for the three groups. In Group B 60 percent of the respondents who are disabled are in a household where the household head has a disability, whereas in group C 49 percent of those who are non-disabled living in a household where a member has a disability, the household head has a disability. In all three groups around 50 percent are female respondents. Age is highest in group B (52 years), whereas it is merely 30 years for respondents in group A and 34 years in group C. The educational status is lowest for group B and it is slightly higher for individuals in group A and C. Also household expenditures differ significantly among the three groups. They are highest for individuals in group C - those who are not disabled but live with a disabled family member, and individuals in group B - those who are disabled. Interestingly also household income is highest for these two groups. Also some of the respondents experienced a shock. 17 percent in group A in form of a natural disaster, 20 percent of subjects in group B and 21 percent of those in group C. An illness shock experienced 11 percent of subjects in group A, 20 percent in group B and 17 percent in group C. A financial shock experienced merely 4 percent in group A, 7 percent in group B and also 7 percent in group C.

2.3 Identification and causal evidence

In order to analyze whether differences in risk attitudes between households who live with a disabled family member and those who do not persist even after controlling for observable characteristics, such as the level of education, income, and other demographic characteristics, we first estimate a Linear Probability Model for the determinants of risk attitudes. The reduced form regression can be written as:

$$RiskAttitude_{it} = \alpha + \beta Disability_{ht} + \gamma_1 X_{1,it} + \gamma_2 X_{2,ht} + \gamma_3 X_{3,vt} + \epsilon \quad (1)$$

where the subscripts denote individual i, household h, village v and year t. *RiskAttitude* is measured as the respondents self-reported willingness to take risks on a scale from 0 to 10. X_1 is a vector of individual characteristics, X_2 of household characteristics and X_3 captures village level control variables. *Disability* is an indicator of whether the respondent lives with a household member who has an impairment in seeing, hearing, walking or a mental impairment. This variable takes on the value one if the respondent lives with a disabled family member and is zero otherwise. We use only unexpected disabilities, in order to dismiss any adjustment effects.

To capture the average causal effect of living with a disabled family member on the individual's risk attitude we make use of two different instruments. The first is

using the number of households in a sub-district living with a household member who has a disability. As households in similar locations experience similar shocks, this instrument captures any shocks that are not endogenous to the household itself. The second instrument uses a self reported illness shock to instrument for unexpected disability. Disabilities are likely to stem from sudden changes to individuals' health conditions. The exclusion restriction here is that individuals cannot influence health shocks either prenatal or resulting from an unexpected event such as an accident. We argue that it does not affect our outcome variable risk attitude directly, but only through the instruments.

Thus in the first stage we regress household level disability on our two potential IV variables (1) sub-district disability, and (2) whether the household experiences an illness shock, and vectors of covariates X_j as defined above

$$Disability_{ht} = \alpha + \beta Subdistr Disability_{st} + \gamma_1 X_{1,it} + \gamma_2 X_{2,ht} + \gamma_3 X_{3,vt} + \epsilon, \quad (2)$$

$$Disability_{ht} = \alpha + \beta HealthShock_{ht} + \gamma_1 X_{1,it} + \gamma_2 X_{2,ht} + \gamma_3 X_{3,vt} + \epsilon, \quad (3)$$

where subscript s denotes the sub-district. In the second-stage, we estimate the reduced form equation that incorporates ϵ reflecting the constant, ζ which is the estimator of our instrument for disability, which should be significantly different from zero

$$RiskAttitude_{it} = \epsilon + \zeta \widehat{Disability}_{ht} + \gamma_1 X_{1,it} + \gamma_2 X_{2,ht} + \gamma_3 X_{3,vt} + \epsilon. \quad (4)$$

The exclusion restriction states that a valid instrument may not have any effect on the dependent variable Risk Attitude other than through the endogenous regressor Disability. We argue that our potential IV variables fulfill this requirement as explained above. First, a high share of subdistrict disability might result for instance, from prior exogeneous shocks at the subdistrict level, such as a higher intensity of bombing or spraying during the Vietnamese war, which led to more affected individuals than in other districts. As birth- defects resulting from intoxication can be carried over to the next generations, a high level of subdistrict disability remains in certain districts of Vietnam, especially those near the North-South border. Second, disability might result not only from post war affections, but also from unexpected health shocks.

Table 2 shows descriptive statistics of our IV variables. The table shows that sub-district disability is much smaller for those who do not live with a disabled family member, the number of experienced health shocks is also smaller than for those who live with a disabled family member, and group differences are significant.

[insert Table 2]

2.4 Estimation Results

Table 3 shows the pooled OLS results over all available time periods. Questions about the disability status of individuals were only added in 2017 in the TVSEP data. These however included a retrospective question asking about the year the respective disability began. Using this information, a yearly disability variable is constructed. The first 5 columns of table 3 display the OLS results with risk attitude as an outcome variable. Our results show that individuals are more risk averse when a household member becomes disabled, and this effect is significant at the 5 percent level, when controlling for individual and household characteristics as well as for year an village fixed effects. The significance vanishes when controlling for household and individual fixed effects. The table shows moreover that those who are older are more likely to take risks, those who are married are on average less likely to take risks and individuals with a higher education as well as those with a higher income are also more likely to take risks.

[insert Table 3]

In addition, we look at investment behavior of individuals, as this might be linked to risk behavior as well. Individuals who are more risk seeking might be more willing to invest a higher sum than those who are risk averse. The variable is measured as the amount an individual would invest if she would receive 60 mio. VND. The higher the amount an individual is willing to invest, the higher we rate his / her investment behavior. Although the signs of the coefficients are not significant, the table shows a negative correlation between an unexpected health shock of a household member and investment behavior.

Table 4 shows our IV specification, using the panel structure of the data. The first three columns show the first-stage regressions. Our instruments are positive and significant at the one percent level. For the illness shock instrument, village fixed effects are included in column 3. The second stage regression results indicate that those individuals who live with someone who became disabled over the years have a higher probability of being risk averse (negative coefficients indicate a left shift of our risk scale towards risk averse).

With respect to investment behavior, both instruments are significant, indicating that those subjects who live with someone who became disabled over the years are less likely to invest a larger amount in an investment than others. However, including village fixed effects turns the coefficient insignificant. Our control variables show moreover, that those who are older are more likely to make a higher investment, and females as well as those who are married are less likely to make a larger investment. In households where the household head is disabled, respondents are more likely to invest a larger amount.

[insert Table 4]

In addition we estimate our IV specification as a pooled cross-section, including individuals who are respondents at least in two waves between 2008 and 2017 (see Table A.1 in the Appendix). The outcome and treatment variables are taken from the last panel wave 2017, and individual and household controls from the first period of observation. The first two columns show the first-stage regressions. Our instruments are positive and significant. The second stage regression results lead to similar results as in Table 4.

In order to underpin the causal relationship between risk behavior and health shocks we make use of a field experiment in Vietnam, in one province which is also captured by the TVSEP Data but does not include the same villages and respondents.

3 Health Shocks and risk aversion: Experimental evidence

3.1 Experiment

In this section we describe our research design exploring risk behavior of households who live with a family member who became disabled. First, we describe our methods of risk elicitation, taking also into account loss aversion of individuals. Second, we describe our psychological primes of the recollection of anxiety about a family member (including sickness or disability). Third, we describe our research design and implementation.

Risk elicitation

Risk behavior and its elicitation has been analyzed by different studies so far in developed as well as in developing countries (Binswanger, 1981; Dohmen et al., 2011a; Holt and Laury, 2002; J.Cardenas and Carpenter, 2013; Gloede et al., 2015). One common survey method to reveal risk attitude is the question about the willingness to take risks in general, where the respondents can rate their willingness on a scale between 0 and 10. This question has also been applied in different country contexts, and has been proven to be a reliable predictor of risk behavior (Gloede et al., 2015; Hardeweg et al., 2013; Dohmen et al., 2011b). Using this survey question Gloede et al. (2015) for instance find a robust relation between adverse shocks and higher risk aversion among individuals in Thailand as well as in Vietnam, pointing to individuals with higher background risks being more risk averse than others.

Other studies elicit risk attitudes using choices between or among lotteries (Binswanger, 1981; Holt and Laury, 2002; Eckel and Grossmann, 2008). Binswanger (1981) uses a lottery set of eight choices with respectively 0.5 probability pairs of gambles and real pay-offs to elicit risk attitude among individuals

in rural India. Gains (expected value) can only increase with increase in risk attitude. They find that around 80 percent of the respondents can be described as intermediate and moderate risk averse. Eckel and Grossmann (2008) employ a gambling structure with 6 choices and increasing payoffs with increasing risk, and 0.5 probabilities. Holt and Laury (2002) also use a gambling lottery, involving ten decisions between two gambles A and B with probabilities ranging from 0.1 to 0.9, and allowing a categorization of decision makers into 10 categories and individuals can decide to switch from gambling series A to B. Callen et al. (2014) employ a similar method in Afghanistan, where individuals decide between a relative risky and a relatively safe option, with varying probabilities, and individuals can switch at one point from playing one game from the A to the B series. Also, Tanaka et al. (2010) investigate risk attitudes among individuals in Vietnam employing a similar method using choices between two binary lotteries A and B, allowing subjects to switch from A to B, with a total of 35 choices.

Thus, risk eliciting gambling tasks vary a lot in their complexity and the main difficulty is to identify the utility values of individuals. Furthermore, greater complexity in gambling tasks lead to a finer categorization of risk and a higher predictive accuracy than a simpler measure. On the other hand, more complex tasks require a good understanding of the procedure among individuals, otherwise results will suffer from more noisy behavior (Dave et al., 2010). Dave et al. (2010) for instance show that the simpler measure appears to be superior for subjects with low math skills as it generates smaller noise and equal predictive accuracy as compared to the complex measure. Thus it is relevant to select the correct type of measure depending on the context and education status of individuals.

We employ a relatively simple risk measure, as we are investigating risk attitudes among poorer individuals in rural Vietnam. Perhaps much more relevant, we are considering a sub-group, namely those who are disabled or live with a disabled family member, among which education is likely to be an issue (Mont and Cuong, 2011). As suggested by Eckel and Grossmann (2008) as well as Dave et al. (2010), individuals receive a gamble choice task and receive 6 different gambles each having a 50 percent chance of each of two possible outcomes. Table 5 lists the six gambles and payoffs with its corresponding outcome, the probabilities of the outcomes occurring, expected payoffs and level of risk. In contrast to Eckel and Grossmann (2008), we use one additional gamble choice gamble 6, which only increases in variance with the same expected return as in gamble 5, and only risk- seeking individuals would choose gamble 6 (see Figure **??** Appendix). Risk-averse subjects would choose lower risk-lower return gambles and risk taking subjects would choose gamble 5 or 6. Table 5 shows that 32,6 percent of our subjects choose option one and two. They prefer the safer option with lower risk of loosing the amount invested. 51,5 percent choose the intermediate options three and four, with an increased level of risk, and 15,9 percent prefer a risk loving

option[2].

[insert Table 5]

Loss-Aversion

The outcome of risk elicitation methods can be biased however, when individuals have a tendency for certainty which could yield to conflicting risk attitudes for losses and gains (Kahneman et al., 1991; Abdellaoui et al., 2008; Gachter et al., 2010). People are loss averse (the loss associated with giving up a good is greater than the utility associated with Behavioral Economics and Poverty obtaining it), which yields to the so called *endowment effect* and a reluctance to depart from the status quo (Kahneman et al., 1991). The discrepancy comes from understating one's true willingness to pay (WTP) and overstating the minimum acceptable price at which one would sell (willingness to accept or WTA) (Kahneman et al., 1991). Although one could assume that this effect could be stronger among the poor and disadvantaged, studies argue that psychological carriers of value appear to be gains and losses rather than final wealth (Bertrand et al., 2004). Nevertheless, we take potential deviations in account, as it could be that some individuals who are or perceive themselves as particularly deprived, have a higher tendency either to keep the status quo or not. Studies show that social identities and inequalities can affect individual gaming behavior to a large extend (Hoff and Pandey, 2006). Therefore, we consider it as relevant to account for loss aversion in risky choices among those who live with a disabled family member and those who do not as well.

In order to measure loss aversion, we adapt a simple lottery choice task (Gachter et al., 2010; Goette et al., 2004) which is easily applicable in a developing country context, where individuals might have difficulties to understand more complex tasks. The task consist of six lotteries, and subjects decide for each lottery whether they want to accept (playing it) or reject it (and receive nothing). We ask the subjects to flip a coin, and when the coin turns up heads, they loose the amount, if the coin turns up tails they win the respective amount. Thus, we use 50 percent probabilities of winning or loosing. While the winning amount remains the same in all six choice sets (120.000 VND equivalent to 4,60 EURO), the amount the subjects could loose increases from 40.000 VND equivalent to

[2]We acknowledge that risk behavior can also follow a concave relationship, when we assume that subjects indeed have a present bias as frequently reported in monetary decision making, see for instance Andreoni and Sprenger (2012b). Nevertheless, for the seek of simplicity and to avoid potential noisy responses in our context, we employ the aforementioned risk elicitation method. Although Andreoni and Sprenger (2012a) for instance, reject linearity they find that around 35 percent of the subjects to whom the risk experiment was targeted show linear preferences. Other studies also show that a present bias is rather about utility than real money, what is also the case in our experiments (ODonoghue and Rabin, 1999).

1,50 EURO in the first choice set up to 140.000 VND (15,50 EURO) in the last choice set (see Figure 2 in the Appendix). Table 6 shows that 25.6 percent of our subjects reject all lotteries thus are loss averse and 16,67 percent accept all lotteries indicating no loss aversion. 15,17 percent accept lottery one and reject the remaining, 16,67 percent accept lottery 1 and 2 and reject the remaining, and 13,43 percent accept lottery 1 - 3 and reject the remaining, which can be considered as moderate loss averse.

[insert Table 6]

Psychological Primes

In psychology the recollection of events in sort of primes has been frequently used to investigate a certain emotional state of a person (Lerner et al., 2004; Lerner and Keitner., 2001). Callen et al. (2014), for instance, employs such psychological primes to investigate violence and risk preferences of individuals that were affected by violence in Afghanistan. They find that individuals exposed to violence, when primed to recall fear, exhibit an increased preference for certainty compared to individuals that were primed differently.

Similar to Callen et al. (2014), we developed psychological primes, but focusing on family circumstances. Prior to the risk elicitation task, one third of individuals were randomly asked: "We are interested in understanding your daily experiences that make you fearful or anxious about your family. This could be anything that refers to other family members. For example, if someone gets sick, experiences violence, losses the job, etc. Could you describe an event in the past year that caused you fear or anxiety about another family member?" This prime should create a *NEGATIVE* recollection or association.

Another randomly selected third of our respondents were asked :"We are interested in understanding your daily experiences that make you happy or joyous with respect to your family. This could be anything. For example, birth of a child of a family member, marriage of a relative, or success in the job of family members. Could you describe an event in the past that caused you such happiness?" This prime should create a *POSITIVE* recollection or association.

The last randomly selected third were asked: "We are interested in understanding your general daily experiences. This could be anything. Could you describe some event from the past. This prime should be associated with anything *NEUTRAL*. Table 7 shows descriptive statistics of our outcome and control variables with respect to our primings. The table shows that around 60 percent of subjects are female in each priming category (Neutral, Negative and Positive). The average age in each category is about 51 years, 85 percent of our subjects are married, and around 70 percent are the household head. The average household

size in each category is about 3.8 household members. Also in terms of life satisfaction, and the subjective welfare level individuals do not differ much among the three categories.

[insert Table 7]

3.2 Sample

In 2018 our field team randomly selected 804 households in the Vietnam province of Ha Thinh in 83 villages. Ha Thinh is a district located relatively near to the North-South border of Vietnam and the share of households who live with a disabled family member is relatively high. Moreover, the province is also captured by the TVSEP data. We do not target the same respondents as in the TVSEP sample in order to avoid biases due to prior survey and gaming experiences of the households. Prior to the random selection, we did a rigorous listing in order to find enough households who live with a disabled family member. The randomly selected 804 households were formally invited to participate in this study. At the same time pre-tests of our experiments were undertaken in neighboring villages.

Before we started with our questionnaire and the choice sets, we randomly varied the decision sets, by letting the respondent throwing a dice. Was a 4, 5 or 6 thrown "Set B" was played firs and otherwise decision set A. In decision set A we started with the risk elicitation task, and then played the choice set to elicit loss aversion. The order in decision set B was the other way round. We started with the choice set to elicit loss- aversion followed by the risk elicitation task. Our questionnaire starts with questions about socio-demographic characteristics of the subjects such as age, marital status, education, occupation, and type and severity of disability, followed by some questions on risk behavior. We asked for instance *" If you think about yourself carefully, are you generally a person who is fully prepared to take risks or do you try to avoid taking risk"* where the respondent could choose on a scale between 0 (unwilling to take risks) and 10 (fully prepared to take risks). Moreover, we asked the same risk scale on the respondents willingness to take risks in different other situations, for instance while driving motor cycle, occupation, taking loans, etc. The survey furthermore captures questions about time preferences, patience and personality traits. The respondents were asked for instance *... do you agree that you are someone who likes to spend time with others? Please provide an answer to the following similar questions using the following scale - 1. Disagree strongly, 2. Disagree a little, 3. Neither agree nor disagree, 4. Agree a little, 5. Agree strongly*". We additionally asked about the respondents' patience, sociability, laziness etc. The survey furthermore captures questions on health, subjective well- being, and whether the respondent receives social assistance. Our questions on disability are the same as employed by the Word Bank to measure disability. At the end of the survey,

we asked the subjects the same risk questions as at the beginning of the survey (called post experiment risk measure).

As we are focusing on the differences between those who live with a disabled family member and those who do not, we look in particular at group differences between these two groups. Table 8 shows summary statistics for our explanatory variables. Among those who live with a disabled family member 61 percent are female, the average age is 53, 78 percent of our subjects are household head. Interestingly there are no significant group differences in education between both groups. Only 20 percent of subjects in both groups completed senior high school. The household size is with 3.8. persons similar as well. We find significant group differences merely in subjective well being. Those who live with a disabled family member rate their subjective level of well-being lower as others.

[insert Table 8]

Identification and causal evidence

Risk Attitude

Table 9 shows the results of Probit regressions and displays the marginal effects. The dependent variable takes on the value one if the respondent opts for the third, fourth, fifth and sixth option (risk loving) and is zero for option 1 an 2 which indicates risk aversion. Subjects who live with a disabled family member have a lower probability of being risk loving. Controlling for a number of relevant factors and sub-district fixed effects (column 8), these individuals have a 14.1 percentage points lower probability of being risk seeking and the coefficient is significant at the 5 percent level. We obtain similar results varying covariates and controlling for district fixed effects (see column 1-4). In addition we estimate risk with three potential outcomes (risk seeking, risk neutral and risk averse) as an ordered Probit model. Results are similar, indicating that individuals who live with someone else who is disabled have a lower probability of being risk seeking (see Table A.6 in the Appendix). Thus, we assume that our results with respect to risk attitude are robust.

[insert Table 9]

Table 9 shows furthermore, that our primes have also an effect on risk behavior. While the effects for those subjects who live with a disabled family member and received a positive priming do not show significant effects, subjects who do not live with a disabled family member and received a negative priming became more risk averse. These subjects are, after receiving the priming 18.5 percentage points less likely to be risk seeking. Thus, a negative priming, as a recollection of

a potential health shock of a family member, affects risk behavior 4 percentage points more for those who do not live with a disabled family member, than the pure effect of living with a disabled family member without priming.

Table A.11 in the Appendix shows OLS results with *risk attitude* as dependent variable. The table reports some first correlations. For instance, subjects who live with a disabled family member are less likely to be risk seeking. Although the coefficients are not significant they point to a consistent negative relationship, when controlling for other variables, as well as for sub-district fixed effects.

Loss Aversion

Table 10 shows the regression results for *loss aversion*. The dependent variable takes the value one if the respondent can be characterized as not loss averse, and is zero when the respondent is loss averse. Interestingly, results are positive and significant for subjects living with a disabled family member, indicating that they are less loss averse than others. The table shows the marginal effects on the outcome loss aversion with different controls. Controlling for instance for sub-district fixed effects, and a substantial number of control variables column 8 of Table 10 indicates that subjects who live with a disabled family member have a 18.9 higher probability of not being loss averse. Priming either positive or negative for those who live with a disabled family member lowers the positive effect on loss aversion. This in turn indicates that those who do not live with a disabled family member and received a negative or positive recollection became less loss averse. Thus the effect of priming with respect to loss aversion is not straight forward, as both types of primings have the same effect.

[insert Table 10]

We estimate in addition a Tobit model, with λ as loss aversion parameter boundaries with the same set of explanatory variables as in Table 10.[3] We obtain very similar results. λ equal to 3 is the value of the upper bound and λ equal to 0.87 is the value for the lower bound of our Tobit model. The value 3 indicates a higher loss aversion and value 0.87 a lower loss aversion choice. Column 8 of Table 10 in the Appendix shows that those subjects who live with a disabled family member are less likely to be loss averse than others. Thus the main effects point into the same direction. Similarly, the interaction term for the negative priming shows that individuals who do not live with a disabled family member become less loss averse after the priming.

[3]We apply the same λ calculations as Gachter et al. (2010) where $v(x)$ denotes the utility of the outcome $x \in \{G, L\}, \lambda^{risky}$. Where G denotes Gains and L Losses. λ^{risky} denotes the coefficient of loss aversion in the risky choice task. The probability weights are $w^{+}(0.5) and w^{-}$ as the 0.5 chance to gain G or L loose, respectively. The ratio $v(G)/v(L) = \lambda^{risky}$ defines an individual loss aversion. Thus the measure of loss aversion is $\lambda^{risky} = G/L$ assuming linearity.

Extensions

In addition to the above, we estimate the probability for investment behavior with our self-collected sample as our questionnaire contains the same question for investment behavior as the TVSEP questionnaire. As investment behavior can be linked to risk behavior as well, and our panel regression results indeed show that indiviuals who live with a disabled family member are less likely to invest a larger amount in an optional investment, it is relevant to investigate this in our self-collected sample as well. Table 11 shows the OLS results. Although our variable of interest is not significant in all specifications, the coefficients are all negative. Column (1) and (5) show significant results at the 5 percent level, indicating that those who live with a disabled family member are less likely to invest a larger amount in an optional investment. With respect to risk, we asked our subjects after the experiment about their general risk behavior in other aspects, e.g. when riding the bicycle, or when taking a loan. Table A.14 in the Appendix shows that these particular post experimental risk specifications do not show significant results, either when using OLS regressions or a Probit Model.

[insert Table 11]

4 Discussion and Conclusion

Disability has become a relevant topic among policy makers in developed and in developing countries. The number of individuals living with a disability has increased over the past years and is largest in least developed countries. Still, war and conflicts world wide, natural disasters, or different types of accidental events lead to severe health shocks among the population especially among the poor. As these subjects are already worse off, not only related to health but also economically, behavioral traits might keep them away from potential opportunities they could probably take to improve their situation. Not only individuals with a disability are affected but also those who live with a disabled family member. Due to care taking, higher expenditures for health, and also mental stress they might behave very different from others with respect to economic and financial decisions.

This paper provides new empirical evidence for risk attitudes among the very disadvantaged, namely those who live with a disabled family member or are disabled themselves in Vietnam. We do not only elicit risk behavior among subjects, but also loss aversion. We combine panel data comprising 9 years and 5 waves between 2008 and 2017, and a field experiment and use Vietnam as setting. Vietnam experienced strong toxic military interventions during the Vietnamese war in the 1960s. Many individuals faced severe health issues and genetic disorders.

Thus not only individuals who got intoxicated, but also children and grandchildren were born with severe genetic disorders. The number of people who live with a disability is therefore, relatively high in Vietnam and highest near the North-South border where most of the toxic spraying took place. In contrast to other developing countries, disability in Vietnam is not facing a stigma problem, rather it reminds people of the war and its outcomes. Therefore, people are willing to report about health issues and also participated in our experiments without difficulties. We measure disability similar to the UN Washington Group on Disability Statistics, asking about the degree of difficulty in seeing, hearing, walking, climbing steps, self-care and communicating, of the disabled person. This measure has been employed by several studies in a developing country context (Mont and Cuong, 2011; Mitra et al., 2013). As disability and poverty are intricately interlinked (Mont, 2007), we employ *first*, an instrumental variable approach using sub-district disability as instrument for disability in our panel data regressions. In doing so we take into account that individuals might have become disabled unexpectedly or by an accident, and we also consider the Vietnamese war as some sort of exogenous event that caused disability. In sub-districts where people were stronger affected by bombing or toxic spraying the share of individuals with a disability might be higher than in other sub-districts where subjects were less affected. Our panel results show that individuals who live with a disabled family member in Vietnam indeed differ from others with respect to risk and investment behavior. Using a general risk measure, our results show that individuals where a family member became disabled over the observation period are less likely to be risk seeking. Similarly, these individuals are less likely to invest a higher amount of VND in a business if they won 60 Mio VND in a hypothetical lottery.

In order to explore the causal relationship of disability on risk attitude more precisely, we conduct *secondly*, a field experiment to elicit risk and loss behavior in the Vietnamese Province Ha-Thinh. Using a lottery choice set of six choices with respectively 0.5 probability pairs of gambles and real pay-offs, the results of our experiment point into the same direction as those of our panel data analyses. Subjects who live with a disabled family member have a 13.8 percentage points lower probability of being risk seeking, with the results being significant at the 5 percent level, controlling for a variety of variables as well as for district fixed effects or sub-district fixed effects. These subjects are also less likely to invest a larger amount in a hypothetical investment. To portray the negative effects of a health shock within the family on risk behavior, we employ the recollection of such a negative event and measure risk attitude directly afterwards again. Individuals who do not live with a disabled family member and received a negative priming were more risk averse than individuals with a different priming. These results show that health shocks within the family affect risk attitude in a negative way and this effect is causal.

Interestingly, results for loss aversion are vice-versa. Individuals who live with a disabled family member are less likely to be loss averse than others. They have

a 13.2 percentage points higher probability of not being loss averse. This results is in line with studies showing similar results, arguing that gains are weighted differently among subjects than losses (Kahneman et al., 1991). One could argue for instance, that those individuals who are already worse off, and have potentially less to loose than others are less loss averse. Gains won through a lottery, on the other hand, for those who are in a more disadvantaged situation, are weighted much stronger, and therefore individuals might try to keep what they have and choose a lower risk return gamble. One could also conclude that subjects who live with a disabled family member have a higher tendency to keep their "status quo". Our results contribute to existing studies, showing that individuals with higher backward risks, are more risk averse than others (Gloede et al., 2015). Being more risk averse is associated with neglecting potential opportunities which could improve individual well being.

In some developing countries policies for those who are disabled exist. They consist of health cards, or very small amounts of money for the household, the so called disability benefits. Also inclusion policies are more frequently being implemented. Our results show that existing policies could be complemented by shaping personality traits such as risk behavior as well. Inclusion policies for instance could work more efficiently if individuals perceive options not as very risky, which could hold them back from taking them up.

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Tables

Table 1: Balance Table: Outcome and Control Variables

	Mean values (standard errors)			Differences (p-values)		
	Non-Disability (A)	Disability (B)	Non-Disability in Dis. HH (C)	AvsB	AvsC	BvsC
Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A: Outcomes					
Risk Taking	5.09	5.21	5.32	0.12	0.23**	-0.11*
	(2.88)	(2.88)	(2.86)	(0.17)	(0.01)	(0.06)
Investment of 60 Mio	13343.83	19277.22	18902.82	5933.39***	5558.98***	374.41
	(16554.65)	(19968.05)	(19862.85)	(0.00)	(0.00)	(0.33)
	Panel B: Covariates					
Head Dis.	0.00	0.60	0.49	0.60***	0.49***	0.11***
	(0.00)	(0.49)	(0.50)	(0.00)	(0.00)	(0.00)
Female	0.50	0.51	0.51	0.00	0.01	-0.00
	(0.50)	(0.50)	(0.50)	(0.86)	(0.47)	(0.90)
Age (Years)	30.67	52.29	33.97	21.62***	3.29***	18.33***
	(20.00)	(20.92)	(22.38)	(0.00)	(0.00)	(0.00)
Married	0.53	0.59	0.51	0.06**	-0.01	0.08***
	(0.50)	(0.49)	(0.50)	(0.01)	(0.20)	(0.00)
HH Size	5.59	4.61	5.72	-0.98***	0.13	-1.11***
	(1.88)	(2.00)	(2.09)	(0.00)	(0.22)	(0.00)
Highest Educ	3.90	1.66	3.64	-2.23***	-0.26	-1.98***
	(14.86)	(6.27)	(13.79)	(0.00)	(0.40)	(0.00)
(Log) HH Expenditure	10.01	10.23	10.35	0.22***	0.34***	-0.12**
	(1.83)	(1.90)	(1.89)	(0.00)	(0.00)	(0.02)
(Log) HH Income	9.50	10.10	10.17	0.60***	0.67***	-0.07
	(3.22)	(3.11)	(3.15)	(0.00)	(0.00)	(0.38)
Shock Natural Disaster	0.17	0.20	0.21	0.03**	0.04***	-0.01
	(0.38)	(0.40)	(0.41)	(0.02)	(0.00)	(0.56)
Shock Illness	0.11	0.20	0.17	0.08***	0.06***	0.02**
	(0.31)	(0.40)	(0.38)	(0.00)	(0.00)	(0.03)
Shock Financial	0.04	0.07	0.07	0.03***	0.03***	-0.00
	(0.19)	(0.25)	(0.25)	(0.00)	(0.00)	(0.81)

Notes: This table provides descriptive statistics according to the disability status of individuals. The first column refers to non-disabled individuals, the second column to individuals with an unexpected disability and the third column to non-disabled individuals that live in a household with at least one person that has a serious disability. The outcome variable "Risk Taking" is a measure between 0-10, where 0 is complete risk aversion. "Investment of 60 mio." is the amount an individual would invest, if she would receive 60 mio. VND. Highest Education ranges from 0 (no education) to 4 (Tertiary Education). For each variable the mean and the standard error in brackets are presented. In columns 4-6, standard errors are clustered on the village level.

Table 2: Balance table: Instrumental variables

	Mean values (standard errors)		Difference (p-value)
	Non-Disability	Disability	
	(1)	(2)	(3)
Variable			
Sub-District Disability	25.98	33.44	7.53***
	(15.08)	(14.56)	(0.00)
HH Illness Shock	0.44	0.60	0.16***
	(0.50)	(0.49)	(0.00)

Notes: This table provides descriptive statistics about the different instruments used. The level of observation is households.

Table 3: OLS Results: Unexpected Disability and Risk

	Outcome: Risk Taking					Outcome: Investment				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Unexpected Dis. HH	-0.194**	-0.181*	0.297	0.201	0.341	-759.2	-576.1	-685.1	-1044.4	-363.1
	(0.0914)	(0.0949)	(0.190)	(0.219)	(0.246)	(472.5)	(468.4)	(1034.0)	(1178.5)	(1254.8)
Female	0.0682***	0.0442**	0.0111			-144.3	-42.99	-23.44		
	(0.0228)	(0.0205)	(0.0128)			(91.15)	(85.27)	(57.68)		
Age (Years)	0.0130***	0.00411**	-0.00234*			-12.75*	-5.499	13.35**		
	(0.00183)	(0.00174)	(0.00141)			(7.711)	(6.870)	(5.830)		
2 - Married	-0.0604	0.0631	0.0233			893.1***	581.6***	-296.6		
	(0.0575)	(0.0542)	(0.0439)			(218.6)	(202.3)	(194.5)		
3 - Widow	-0.654***	-0.475***	-0.0915			-313.3	-492.8	-658.5		
	(0.125)	(0.119)	(0.109)			(555.2)	(535.4)	(430.7)		
4 - Divorced/separated	-0.855***	-0.585***	-0.170			-423.1	-1417.2**	-926.1		
	(0.208)	(0.208)	(0.181)			(683.8)	(704.4)	(674.9)		
HH Size	0.00438	0.0334*	0.0479	0.0567	0.0565	212.7***	271.6***	560.1***	536.9***	535.8***
	(0.0203)	(0.0196)	(0.0338)	(0.0383)	(0.0382)	(57.15)	(61.23)	(151.6)	(171.3)	(171.3)
Primary	0.699***	0.383***	0.0971*	0.219	0.212	598.0*	236.0	93.42	604.7	570.7
	(0.0943)	(0.0800)	(0.0524)	(0.172)	(0.172)	(318.0)	(289.0)	(197.4)	(673.4)	(675.5)
Secondary	1.213***	0.654***	0.0595	0.170	0.162	1586.3***	932.6***	46.46	664.5	627.5
	(0.101)	(0.0776)	(0.0554)	(0.241)	(0.241)	(317.2)	(265.8)	(204.9)	(770.1)	(772.0)
Professional	1.299***	0.632***	-0.219**	-0.204	-0.206	1919.3***	1067.5**	422.7	1398.7	1387.2
	(0.128)	(0.121)	(0.103)	(0.282)	(0.282)	(598.4)	(534.2)	(423.0)	(994.5)	(995.6)
Tertiary	1.651***	0.979***	-0.0858	-0.0166	-0.0207	2184.8***	1287.5***	163.4	1467.4	1448.4
	(0.129)	(0.116)	(0.0828)	(0.265)	(0.265)	(528.1)	(464.4)	(348.0)	(941.1)	(943.3)
(Log) HH Income	0.0291**	0.0159	-0.0117	-0.0156	-0.0157	42.13	77.47**	57.58	74.56	73.98
	(0.0125)	(0.0121)	(0.0122)	(0.0140)	(0.0140)	(37.17)	(36.93)	(45.03)	(51.98)	(51.92)
Head Dis.					-0.323					-1564.3
					(0.248)					(1125.4)
Constant	3.457***	4.152***	5.090***	4.929***	4.949***	11933.3***	11733.7***	10859.4***	10459.6***	10554.6***
	(0.184)	(0.181)	(0.239)	(0.347)	(0.346)	(578.0)	(528.2)	(935.9)	(1192.3)	(1200.4)
Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Village FE		✓					✓			
Household FE			✓					✓		
Inidividual FE				✓	✓				✓	✓
HH Head Disability					✓					✓
Observations	33138	33138	33130	32254	32254	33131	33131	33123	32246	32246

Note: This table presents OLS results of estimating estimating risk measures on being in an household with a person who experienced an unexpected disability. Individuals that have a disability themselves are excluded. All individuals in the sample aged 16-65 are included in the sample. The outcome in the first 4 columns is the Risk Taking index (between 0-10, where 0 is complete risk aversion). In columns 6-10 the outcome is the amount an individual would invest, if she would receive 60 mio. VND. Columns 5 and 10 add a dummy that indicates whether the household head has a disability. Standard errors, clustered on the village level, are presented in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: IV Results: Unexpected Disability and Risk

	First Stage			Second Stage: Risk Taking			Second Stage: Investment		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Sub-District Disability	0.00357***								
	(0.000426)								
HH Illness Shock		0.0436***	0.0385***						
		(0.0121)	(0.0122)						
Unexpected Dis. HH				-0.331	-8.120***	-9.312***	-8625.1***	-12295.6*	-10380.6
				(0.884)	(2.850)	(3.522)	(3205.9)	(6300.6)	(6788.1)
Female	-0.00399	-0.00102	-0.00164	0.0679***	0.0533	0.0222	-157.3	-163.3	-65.32
	(0.00483)	(0.00486)	(0.00487)	(0.0229)	(0.0455)	(0.0504)	(103.6)	(113.0)	(103.2)
Age (Years)	-0.000261	-0.0000761	-0.000102	0.0130***	0.0122***	0.00302	-13.46*	-13.80*	-6.655
	(0.000311)	(0.000318)	(0.000318)	(0.00183)	(0.00297)	(0.00327)	(7.673)	(7.991)	(7.264)
2 - Married	-0.0350***	-0.0368***	-0.0310***	-0.0656	-0.360***	-0.228	592.6**	452.4	267.8
	(0.00913)	(0.00943)	(0.00927)	(0.0633)	(0.133)	(0.139)	(271.5)	(335.6)	(295.3)
3 - Widow	-0.0352*	-0.0405**	-0.0371*	-0.659***	-0.961***	-0.807***	-621.1	-764.7	-852.2
	(0.0201)	(0.0203)	(0.0202)	(0.129)	(0.227)	(0.251)	(573.4)	(632.8)	(575.0)
4 - Divorced/separated	-0.0302	-0.0383	-0.0208	-0.860***	-1.154***	-0.773**	-723.1	-863.0	-1620.6**
	(0.0246)	(0.0240)	(0.0233)	(0.213)	(0.308)	(0.321)	(746.5)	(811.1)	(806.4)
HH Size	0.00434*	0.00358	0.00196	0.00496	0.0380	0.0566*	246.4***	262.2***	296.9***
	(0.00261)	(0.00267)	(0.00295)	(0.0204)	(0.0283)	(0.0326)	(61.77)	(70.04)	(66.99)
Primary	-0.00709	-0.00656	0.00941	0.698***	0.627***	0.452***	529.1	497.0	313.4
	(0.0126)	(0.0135)	(0.0121)	(0.0934)	(0.137)	(0.142)	(338.8)	(366.9)	(338.6)
Secondary	-0.0132	0.00120	0.00967	1.212***	1.190***	0.710***	1567.3***	1558.4***	993.4***
	(0.0148)	(0.0159)	(0.0160)	(0.101)	(0.160)	(0.183)	(347.2)	(374.4)	(353.3)
Professional	-0.00326	0.0168	0.0280	1.300***	1.389***	0.843***	2012.5***	2056.0***	1298.8**
	(0.0216)	(0.0223)	(0.0219)	(0.129)	(0.225)	(0.278)	(633.9)	(668.1)	(626.9)
Tertiary	-0.0348*	-0.0140	-0.00765	1.648***	1.487***	0.861***	2024.4***	1949.5***	1160.8**
	(0.0198)	(0.0212)	(0.0209)	(0.129)	(0.216)	(0.236)	(556.6)	(597.9)	(540.4)
(Log) HH Income	-0.000220	0.000163	0.0000991	0.0291**	0.0279*	0.0145	40.82	40.21	75.86*
	(0.00103)	(0.00107)	(0.00101)	(0.0125)	(0.0150)	(0.0153)	(38.80)	(40.13)	(39.33)
Constant	0.0299	0.0864***	0.0869***						
	(0.0284)	(0.0279)	(0.0309)						
Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Village FE			✓			✓			✓
Observations	33199	33199	33199	33138	33138	33138	33131	33131	33131

Note: This table presents IV results of estimating estimating risk measures on being in an household with a person who experienced an unexpected disability. Individuals that have a disability themselves are excluded. Individuals aged 16-65 are included in the sample. The first 3 columns present the first stage results. Column 1 uses sub-district level disability and columns 2 and 3 illness shocks as an instrument. The outcome in columns 4-6 is the Risk Taking index (between 0-10, where 0 is complete risk aversion). In columns 7-9 the outcome is the amount an individual would invest, if she would receive 60 mio. VND. Standard errors, clustered on the village level, are presented in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Experimental risk measure

Choice Set	Low Payoff	High Payoff	Expected Return	Implied CRRA Range	Fraction of Subjects
1	130.000	130.000	130.000	3.46<r	12.8
2	115.000	155.000	135.000	1.16<r<3.46	19.8
3	100.000	180.000	140.000	0.71<r<1.16	31.7
4	85.000	205.000	145.000	0.50<r<0.71	19.8
5	70.000	230.000	150.000	0<r<0.50	10.6
6	20.000	280.000	150.000	r<0	5.3

Notes: Summary statistics are based on the sample of 804 households.

Table 6: Experimental loss measure

Acceptance Behavior (lottery choice category)	Fraction of Subjects (%)	Implied Acceptable Loss	Implied λ^{risky} if v(x)=x
7) Reject all lotteries	25.6	<40000	<3
6) Acceptance #1, reject #2-#6	15.17	40.000	3
5) Acceptance #1-#2, reject #3-#6	16.67	60.000	2
4) Acceptance #1-#3, reject #4-#6	13.43	80.000	1,5
3) Acceptance #1-#4, reject #5-#6	6.34	100.000	1,2
2) Acceptance #1-#5, reject #6	6.09	120.000	1
1) Accept all lotteries	16.67	>140000	<0,86

Notes: Summary Statistics are based on the sample of 804 households

Table 7: Balance table: Risk and control variables

	Mean values (standard errors)			Differences (p-values)		
	Neutral (A)	Negative (B)	Positive (C)	AvsB	AvsC	BvsC
	(1)	(2)	(3)	(4)	(5)	(6)
Variable						
Risk (overall) qx	5.88	5.94	6.03	0.05	0.15	-0.10
	(2.70)	(2.70)	(2.63)	(0.81)	(0.52)	(0.69)
Risk (Fait in others) qx	5.79	5.31	5.29	-0.48**	-0.50**	0.02
	(2.60)	(2.60)	(2.57)	(0.02)	(0.02)	(0.91)
Risk (Financial matters) qx	5.10	5.18	4.95	0.08	-0.15	0.22
	(2.92)	(2.77)	(2.72)	(0.77)	(0.50)	(0.38)
Risk (Loans) qx	5.21	5.25	4.90	0.04	-0.30	0.35
	(3.04)	(2.98)	(3.04)	(0.86)	(0.28)	(0.19)
Risk (Own health) qx	5.84	5.66	5.73	-0.18	-0.11	-0.06
	(2.85)	(2.89)	(2.87)	(0.42)	(0.64)	(0.78)
Share investing in lottery (qx)	0.57	0.58	0.57	0.02	0.01	0.01
	(0.30)	(0.28)	(0.29)	(0.50)	(0.79)	(0.69)
Time preferences of person (qx)	2.43	2.57	2.45	0.13	0.02	0.12
	(1.56)	(1.51)	(1.50)	(0.26)	(0.90)	(0.30)
Patience	6.31	6.23	6.20	-0.09	-0.12	0.03
	(2.70)	(2.73)	(2.85)	(0.67)	(0.66)	(0.92)
Start with game A	0.55	0.51	0.48	-0.04	-0.07	0.03
	(0.50)	(0.50)	(0.50)	(0.32)	(0.10)	(0.41)
Person is risk loving (experiment)	3.16	3.10	3.08	-0.06	-0.08	0.02
	(1.37)	(1.29)	(1.36)	(0.53)	(0.49)	(0.85)
Respondent is female	0.57	0.59	0.59	0.02	0.02	0.00
	(0.50)	(0.49)	(0.49)	(0.63)	(0.71)	(0.98)
Age of respondent	51.92	51.52	50.98	-0.41	-0.95	0.54
	(11.56)	(12.05)	(11.39)	(0.72)	(0.27)	(0.59)
Respondent is married	0.85	0.84	0.85	-0.01	-0.00	-0.01
	(0.36)	(0.37)	(0.36)	(0.69)	(0.98)	(0.65)
Respondent is household head	0.73	0.68	0.71	-0.05	-0.03	-0.03
	(0.44)	(0.47)	(0.46)	(0.20)	(0.47)	(0.49)
Compl. primary or less	0.22	0.19	0.20	-0.03	-0.02	-0.01
	(0.42)	(0.39)	(0.40)	(0.32)	(0.53)	(0.79)
Compl. junior secondary	0.54	0.63	0.58	0.09**	0.04	0.05
	(0.50)	(0.48)	(0.49)	(0.02)	(0.32)	(0.28)
Compl. senior highschool or more	0.23	0.17	0.21	-0.06**	-0.02	-0.04
	(0.42)	(0.38)	(0.41)	(0.05)	(0.51)	(0.23)
HH size	3.89	3.94	3.78	0.05	-0.10	0.16
	(1.52)	(1.67)	(1.42)	(0.72)	(0.38)	(0.26)
Subjective welfare level	2.53	2.48	2.57	-0.04	0.04	-0.09
	(1.10)	(1.00)	(1.15)	(0.62)	(0.67)	(0.36)
Open to experience (Big 5)	0.50	0.48	0.40	-0.03	-0.11	0.08
	(2.35)	(2.30)	(2.34)	(0.89)	(0.56)	(0.69)
Conscientousness(Big 5)	-1.72	-2.04	-1.87	-0.32***	-0.15	-0.17
	(1.49)	(1.62)	(1.51)	(0.01)	(0.24)	(0.26)
Extraversion (Big 5)	-2.54	-2.41	-2.36	0.13	0.19	-0.05
	(1.36)	(1.45)	(1.34)	(0.25)	(0.11)	(0.62)
Agreeableness (Big 5)	-4.21	-4.05	-4.10	0.16	0.10	0.05
	(1.88)	(1.71)	(1.87)	(0.30)	(0.52)	(0.72)
Neuroticism (Big 5)	0.07	-0.11	-0.01	-0.18	-0.09	-0.09
	(1.59)	(1.63)	(1.72)	(0.22)	(0.55)	(0.56)
Household is disablity sample	0.49	0.49	0.52	-0.00	0.02	-0.02
	(0.50)	(0.50)	(0.50)	(0.92)	(0.64)	(0.58)

Notes: Table is based on sample of 804 households. Stardard errors are clustered at the village level.

Table 8: Balance table: Background variables

	Mean values (standard errors)		Difference (p-value)
	No disability	Disability	
	(1)	(2)	(3)
Variable			
Respondent is female	0.55	0.61	0.06*
	(0.50)	(0.49)	(0.08)
Age of respondent	50.10	52.86	2.76***
	(11.26)	(11.90)	(0.00)
Respondent is married	0.82	0.87	0.05**
	(0.38)	(0.34)	(0.04)
Respondent is household head	0.63	0.78	0.15***
	(0.48)	(0.41)	(0.00)
Compl. primary or less	0.20	0.21	0.01
	(0.40)	(0.41)	(0.71)
Compl. junior secondary	0.59	0.58	-0.01
	(0.49)	(0.49)	(0.72)
Compl. senior highschool or more	0.21	0.21	0.00
	(0.41)	(0.41)	(0.94)
HH size	3.88	3.86	-0.02
	(1.53)	(1.54)	(0.81)
# children	3.12	3.20	0.08
	(1.41)	(1.55)	(0.43)
How satisfied are u with your life	2.19	2.56	0.37***
	(0.93)	(1.00)	(0.00)
Subjective welfare level	2.85	2.20	-0.65***
	(1.07)	(0.99)	(0.00)
Open to experience (Big 5)	0.51	0.42	-0.09
	(2.33)	(2.33)	(0.55)
Conscientousness(Big 5)	-2.01	-1.74	0.27**
	(1.51)	(1.56)	(0.02)
Extraversion (Big 5)	-2.41	-2.47	-0.05
	(1.42)	(1.35)	(0.63)
Agreeableness (Big 5)	-4.12	-4.12	-0.00
	(1.79)	(1.85)	(0.99)
Neuroticism (Big 5)	0.06	-0.09	-0.15
	(1.67)	(1.62)	(0.24)
Household is disablity sample	0.00	1.00	1.00
	(0.00)	(0.00)	()

Notes: Table is based on sample of 804 households. Stardard errors are clustered at the village level.

Table 9: Experimental risk aversion measure: Priming and Disability interactions (Probit-Margins)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Disabled	-0.138	-0.146	-0.143	-0.140	-0.141	-0.149	-0.143	-0.141
	(0.059)**	(0.062)**	(0.062)**	(0.062)**	(0.059)**	(0.063)**	(0.062)**	(0.063)**
Positive	-0.123	-0.124	-0.120	-0.110	-0.122	-0.119	-0.113	-0.103
	(0.053)**	(0.053)**	(0.054)**	(0.055)**	(0.055)**	(0.055)**	(0.056)**	(0.057)*
Negative	-0.107	-0.106	-0.097	-0.108	-0.099	-0.095	-0.087	-0.099
	(0.067)	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)	(0.069)
Disabled x Positive	0.159	0.155	0.145	0.154	0.170	0.159	0.149	0.157
	(0.096)*	(0.098)	(0.098)	(0.099)	(0.095)*	(0.097)	(0.096)	(0.099)
Disabled x Negative	0.201	0.204	0.198	0.191	0.203	0.201	0.189	0.185
	(0.085)**	(0.085)**	(0.085)**	(0.088)**	(0.088)**	(0.088)**	(0.088)**	(0.091)**
Observations	804	804	803	781	791	791	790	768
r2								
District FE	Yes	Yes	Yes	Yes	No	No	No	No
Subdistrict FE	No	No	No	No	Yes	Yes	Yes	Yes
Basic Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Big 5	No	No	Yes	Yes	No	No	Yes	Yes
Extended Controls	No	No	No	Yes	No	No	No	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels. Outcome is 0 if respondent chooses gambles 1 or 2, and 1 otherwise.

Table 10: Experimental loss aversion measure: Priming and Disability interactions (Probit-Margins)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Disabled	0.132	0.152	0.159	0.179	0.142	0.162	0.172	0.189
	(0.058)**	(0.063)**	(0.063)**	(0.065)***	(0.057)**	(0.062)***	(0.062)***	(0.064)***
Positive	-0.023	-0.024	-0.030	-0.014	-0.011	-0.008	-0.013	0.004
	(0.060)	(0.059)	(0.058)	(0.060)	(0.059)	(0.058)	(0.056)	(0.059)
Negative	0.051	0.054	0.051	0.066	0.068	0.071	0.073	0.088
	(0.059)	(0.059)	(0.057)	(0.057)	(0.060)	(0.058)	(0.057)	(0.057)
Disabled x Positive	-0.117	-0.140	-0.143	-0.157	-0.134	-0.156	-0.165	-0.177
	(0.078)	(0.077)*	(0.077)*	(0.078)**	(0.082)*	(0.081)*	(0.081)**	(0.082)**
Disabled x Negative	-0.165	-0.173	-0.166	-0.177	-0.180	-0.191	-0.187	-0.198
	(0.082)**	(0.084)**	(0.082)**	(0.084)**	(0.080)**	(0.081)**	(0.080)**	(0.081)**
Observations	804	804	803	781	804	804	803	781
r2								
District FE	Yes	Yes	Yes	Yes	No	No	No	No
Subdistrict FE	No	No	No	No	Yes	Yes	Yes	Yes
Basic Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Big 5	No	No	Yes	Yes	No	No	Yes	Yes
Extended Controls	No	No	No	Yes	No	No	No	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels. Outcome is 0 if respondent rejects all lotteries or accepts first lottery, and 1 otherwise.

Table 11: Investment measure

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Disabled	-0.047	-0.017	-0.013	-0.006	-0.047	-0.019	-0.015	-0.008
	(0.022)**	(0.025)	(0.025)	(0.025)	(0.023)**	(0.025)	(0.025)	(0.026)
Observations	804	804	803	781	804	804	803	781
r2	0.0243	0.0818	0.0930	0.1223	0.0464	0.0972	0.1087	0.1374
District FE	Yes	Yes	Yes	Yes	No	No	No	No
Subdistrict FE	No	No	No	No	Yes	Yes	Yes	Yes
Basic Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Big 5	No	No	Yes	Yes	No	No	Yes	Yes
Extended Controls	No	No	No	Yes	No	No	No	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels.

Table 12: Post-experimental risk measures: Priming and Disability interactions

	Overall	Bike	Occup	Faith	Finance	Loan	Busine	Health1	Health2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Disabled	0.290	0.325	0.297	-0.105	0.011	0.111	0.443	0.446	0.569
	(0.345)	(0.379)	(0.372)	(0.281)	(0.319)	(0.351)	(0.313)	(0.354)	(0.373)
Positive	0.282	-0.392	-0.185	-0.286	0.171	-0.573	-0.461	0.307	0.454
	(0.249)	(0.358)	(0.331)	(0.337)	(0.283)	(0.349)	(0.345)	(0.287)	(0.318)
Negative	0.226	0.167	-0.026	-0.107	0.030	-0.182	-0.211	0.267	0.095
	(0.282)	(0.369)	(0.295)	(0.298)	(0.333)	(0.337)	(0.282)	(0.359)	(0.364)
Disabled x Positive	-0.095	-0.750	-0.189	-0.197	-0.237	-0.166	-0.577	-0.621	-0.315
	(0.446)	(0.558)	(0.444)	(0.426)	(0.491)	(0.500)	(0.375)	(0.501)	(0.520)
Disabled x Negative	-0.398	0.196	-0.067	-0.077	-0.191	0.645	-0.295	-0.945	-0.790
	(0.441)	(0.561)	(0.512)	(0.471)	(0.374)	(0.435)	(0.422)	(0.481)*	(0.499)
Observations	803	802	803	803	803	803	802	803	803
r2	0.1174	0.0863	0.1110	0.1125	0.0964	0.1023	0.1456	0.1135	0.1197
Subdistrict FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Basic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Big 5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels.

A Appendix: Additional Tables

Figure 1: Risk-Aversion Gamble Choices

Cross the Choice Set that the participant selected below:

Table A.2			
Data Entry: k3c			
Choice Set	**Low Payoff**	**High Payoff**	**Set Selection**
1	130.000	130.000	◯
2	115.000	155.000	◯
3	100.000	180.000	◯
4	85.000	205.000	◯
5	70.000	230.000	◯
6	20.000	280.000	◯

Figure 2: Loss-Aversion Gamble Choices

Cross which Choice Sets the participant accepted and rejected below:

Table B.2		
Data Entry: k4d		
Choice Set	**Accept (=1)**	**Reject (=2)**
Participant receives a bonus of 120.000 VND		
1. If the dice shows 1, 2 or 3, you lose 40.000 VND; if the dice shows 4, 5 or 6, you win 120.000 VND	○	○
2. If the dice shows 1, 2 or 3, you lose 60.000 VND; if the dice shows 4, 5 or 6, you win 120.000 VND	○	○
3. If the dice shows 1, 2 or 3, you lose 80.000 VND; if the dice shows 4, 5 or 6, you win 120.000 VND	○	○
4. If the dice shows 1, 2 or 3, you lose 100.000 VND; if the dice shows 4, 5 or 6, you win 120.000 VND	○	○
5. If the dice shows 1, 2 or 3, you lose 120.000 VND; if the dice shows 4, 5 or 6, you win 120.000 VND	○	○
6. If the dice shows 1, 2 or 3, you lose 140.000 VND; if the dice shows 4, 5 or 6, you win 120.000 VND	○	○

Table A.1: IV Results: Unexpected Disability and Risk (Pooled Cross-Section)

	First Stage		Second Stage: Risk Taking		Second Stage: Investment	
	Illness Shock	SD-Disability	Illness Shock	SD-Disability	Illness Shock	SD-Disability
HH Illness Shock		0.0312***				
		(0.0119)				
Sub-District Disability	0.00204***					
	(0.000517)					
Unexpected Dis. HH			-2.782	-10.74**	-34855.2**	-37579.8
			(1.850)	(5.139)	(14984.2)	(24892.4)
Head Dis.	0.512***	0.526***	1.264	5.482*	20688.2***	22133.4*
	(0.0335)	(0.0329)	(0.983)	(2.800)	(8000.0)	(13334.3)
Female	-0.0160***	-0.0151***	-0.107*	-0.228**	-2415.5***	-2457.9***
	(0.00478)	(0.00480)	(0.0553)	(0.100)	(476.5)	(546.3)
Base Age	-0.000597	-0.000539	-0.0232***	-0.0272***	-429.8***	-430.8***
	(0.000577)	(0.000574)	(0.00561)	(0.00852)	(41.33)	(41.02)
Base Marit. Status=2	-0.00984	-0.0126	0.364	0.325	3397.6	3355.2
	(0.0647)	(0.0625)	(0.460)	(0.837)	(3239.7)	(3330.2)
Base Marit. Status=3	-0.0241	-0.0251	-0.0809	-0.256	1831.4	1745.8
	(0.0703)	(0.0682)	(0.523)	(0.940)	(3706.5)	(3883.0)
Base Marit. Status=4	-0.0419	-0.0467	-0.274	-0.596	429.4	295.6
	(0.0701)	(0.0683)	(0.544)	(0.949)	(4005.1)	(4210.5)
Base Education=1	0.105	0.0945	0.375	1.095	6567.1	6822.6
	(0.0690)	(0.0684)	(0.913)	(1.168)	(4932.9)	(5084.1)
Base Education=2	0.117***	0.114***	0.558	1.522	11276.3***	11587.5**
	(0.0382)	(0.0368)	(0.944)	(1.093)	(4312.8)	(4621.5)
Base Education=3	0.133***	0.133***	0.591	1.726	9564.3**	9923.6**
	(0.0485)	(0.0475)	(0.973)	(1.203)	(4464.4)	(4983.5)
Base Education=4	0.0985**	0.0991**	1.145	1.971*	12699.4***	12961.8***
	(0.0436)	(0.0420)	(0.956)	(1.094)	(4273.9)	(4407.7)
Base Income	-0.0000709	-0.00115	0.0986***	0.116**	270.3	266.4
	(0.00288)	(0.00281)	(0.0311)	(0.0464)	(236.4)	(241.7)
Base Lvl Risk			0.191***	0.150***		
			(0.0229)	(0.0406)		
Base Investment					0.282***	0.282***
					(0.0274)	(0.0284)
Constant	-0.0464	0.00653	3.920***	3.941***	23502.2***	23544.4***
	(0.0714)	(0.0663)	(1.002)	(1.207)	(5108.3)	(5165.6)
Observations	9302	9302	9285	9285	9276	9276

Note: This table presents IV results of estimating estimating risk measures on being in an household with a person who experienced an unexpected disability. Individuals that have a disability themselves are excluded. The estimation is done for the last sample year (2017), with baseline year control variables (2008). Households that had a disabled member in 2008 and 2017 are excluded. Individuals aged 16-65 are included in the sample. The first 2 columns present the first stage results. Column 1 uses sub-district level disability and column 2 illness shocks as an instrument. The outcome in columns 3-4 is the Risk Taking index (between 0-10, where 0 is complete risk aversion). In columns 5-6 the outcome is the amount an individual would invest, if she would receive 60 mio. VND. Standard errors, clustered on the village level, are presented in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.2: Balance table: Risk and time preference variables

	Mean values (standard errors)		Difference (p-value)
	No disability	Disability	
	(1)	(2)	(3)
Variable			
Risk (overall) qx	5.87	6.03	0.16
	(2.59)	(2.76)	(0.44)
Risk (Motor bike) qx	4.68	4.73	0.05
	(3.00)	(3.05)	(0.78)
Risk (Job) qx	5.81	5.62	-0.19
	(2.74)	(2.84)	(0.31)
Risk (Fait in others) qx	5.50	5.44	-0.06
	(2.51)	(2.68)	(0.74)
Risk (Financial matters) qx	5.21	4.94	-0.27
	(2.78)	(2.82)	(0.19)
Risk (Loans) qx	4.97	5.28	0.32
	(3.09)	(2.95)	(0.18)
Risk (New business) qx	5.45	5.52	0.06
	(2.82)	(2.83)	(0.74)
Risk (Own health) qx	5.74	5.75	0.01
	(2.78)	(2.96)	(0.94)
Risk (Health family) qx	5.36	5.56	0.19
	(2.94)	(3.12)	(0.40)
Share investing in lottery (qx)	0.60	0.55	-0.05**
	(0.28)	(0.29)	(0.04)
Time preferences of person (qx)	2.49	2.48	-0.00
	(1.53)	(1.52)	(0.96)
Patience	6.21	6.28	0.07
	(2.71)	(2.81)	(0.70)
Start with game A	0.50	0.53	0.04
	(0.50)	(0.50)	(0.30)
Person is risk loving (experiment)	3.13	3.10	-0.02
	(1.34)	(1.34)	(0.78)

Notes: Table is based on sample of 804 households. Stardard errors are clustered at the village level.

Table A.3: Summary statistics (background variables)

Variable	Mean	Median	SD	Min.	Max.	Obs.
	(1)	(2)	(3)	(4)	(5)	(6)
Risk (overall) qx	5.95	6.00	2.68	0.00	10.00	804
Risk (Fait in others) qx	5.47	5.00	2.60	0.00	10.00	804
Risk (Financial matters) qx	5.08	5.00	2.81	0.00	10.00	804
Risk (Loans) qx	5.12	5.00	3.02	0.00	10.00	804
Risk (Own health) qx	5.75	6.00	2.87	0.00	10.00	804
Share investing in lottery (qx)	0.57	0.50	0.29	0.00	1.00	804
Time preferences of person (qx)	2.48	3.00	1.52	0.00	4.00	804
Patience	6.25	6.00	2.76	0.00	10.00	804
Start with game A	0.52	1.00	0.50	0.00	1.00	804
Person is risk loving (experiment)	3.12	3.00	1.34	1.00	6.00	804
Respondent is female	0.58	1.00	0.49	0.00	1.00	804
Age of respondent	51.48	52.00	11.66	18.00	105.00	804
Respondent is married	0.85	1.00	0.36	0.00	1.00	804
Respondent is household head	0.71	1.00	0.46	0.00	1.00	804
Compl. primary or less	0.21	0.00	0.41	0.00	1.00	804
Compl. junior secondary	0.59	1.00	0.49	0.00	1.00	804
Compl. senior highschool or more	0.21	0.00	0.41	0.00	1.00	804
HH size	3.87	4.00	1.54	1.00	10.00	783
Subjective welfare level	2.53	2.00	1.08	1.00	6.00	804
Open to experience (Big 5)	0.46	0.68	2.33	-6.32	5.68	804
Conscientousness(Big 5)	-1.88	-2.08	1.54	-9.08	0.92	804
Extraversion (Big 5)	-2.44	-1.85	1.39	-6.85	0.15	804
Agreeableness (Big 5)	-4.12	-4.34	1.82	-9.34	1.66	803
Neuroticism (Big 5)	-0.01	0.16	1.65	-5.84	6.16	804
Household is disablity sample	0.50	0.50	0.50	0.00	1.00	804

Notes: Summary statistics are based on the sample of 804 households.

Table A.4: Summary statistics (background variables)

Variable	Mean	Median	SD	Min.	Max.	Obs.
	(1)	(2)	(3)	(4)	(5)	(6)
Risk (overall) qx	5.95	6.00	2.68	0.00	10.00	804
Risk (Motor bike) qx	4.71	5.00	3.02	0.00	10.00	804
Risk (Job) qx	5.72	6.00	2.79	0.00	10.00	804
Risk (Fait in others) qx	5.47	5.00	2.60	0.00	10.00	804
Risk (Financial matters) qx	5.08	5.00	2.81	0.00	10.00	804
Risk (Loans) qx	5.12	5.00	3.02	0.00	10.00	804
Risk (New business) qx	5.49	5.00	2.83	0.00	10.00	804
Risk (Own health) qx	5.75	6.00	2.87	0.00	10.00	804
Risk (Health family) qx	5.46	5.00	3.03	0.00	10.00	804
Share investing in lottery (qx)	0.57	0.50	0.29	0.00	1.00	804
Time preferences of person (qx)	2.48	3.00	1.52	0.00	4.00	804
Patience	6.25	6.00	2.76	0.00	10.00	804
Start with game A	0.52	1.00	0.50	0.00	1.00	804
Person is risk loving (experiment)	3.12	3.00	1.34	1.00	6.00	804

Notes: Summary statistics are based on the sample of 804 households.

Table A.5: Experimental risk measure: Robustness by standard error treatment

	Village	Subdist	Robust
	(1)	(2)	(3)
Disabled	-0.204	-0.204	-0.204
	(0.186)	(0.190)	(0.177)
Positive	-0.226	-0.226	-0.226
	(0.139)	(0.133)*	(0.164)
Negative	-0.191	-0.191	-0.191
	(0.173)	(0.187)	(0.166)
Disabled x Positive	0.211	0.211	0.211
	(0.279)	(0.285)	(0.238)
Disabled x Negative	0.341	0.341	0.341
	(0.237)	(0.255)	(0.230)
Observations	804	804	804
r2	0.0223	0.0223	0.0223
Subdistrict FE	Yes	Yes	Yes
Basic Controls	Yes	Yes	Yes
Big 5	Yes	Yes	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels.

Table A.6: Experimental risk measure: Priming and Disability interactions (oprobit)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Disabled	-0.272	-0.276	-0.255	-0.273	-0.285	-0.298	-0.276	-0.309
	(0.144)*	(0.157)*	(0.156)	(0.159)*	(0.150)*	(0.165)*	(0.164)*	(0.168)*
Positive	-0.254	-0.258	-0.259	-0.253	-0.257	-0.254	-0.256	-0.255
	(0.116)**	(0.116)**	(0.121)**	(0.125)**	(0.124)**	(0.124)**	(0.129)**	(0.134)*
Negative	-0.229	-0.226	-0.208	-0.228	-0.227	-0.221	-0.207	-0.222
	(0.142)	(0.144)	(0.146)	(0.149)	(0.144)	(0.146)	(0.147)	(0.150)
Disabled x Positive	0.344	0.330	0.299	0.316	0.396	0.372	0.344	0.359
	(0.229)	(0.234)	(0.233)	(0.238)	(0.238)*	(0.243)	(0.241)	(0.247)
Disabled x Negative	0.327	0.344	0.332	0.330	0.337	0.339	0.323	0.333
	(0.199)	(0.202)*	(0.204)	(0.209)	(0.212)	(0.216)	(0.217)	(0.222)
Observations	804	804	803	781	804	804	803	781
r2								
District FE	Yes	Yes	Yes	Yes	No	No	No	No
Subdistrict FE	No	No	No	No	Yes	Yes	Yes	Yes
Basic Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Big 5	No	No	Yes	Yes	No	No	Yes	Yes
Extended Controls	No	No	No	Yes	No	No	No	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels. Respondents are divided into 3 groups.

Table A.7: Experimental risk aversion measure: Priming and Disability interactions (Probit)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Disabled	-0.390	-0.416	-0.408	-0.402	-0.408	-0.434	-0.418	-0.415
	(0.168)**	(0.176)**	(0.177)**	(0.181)**	(0.173)**	(0.185)**	(0.184)**	(0.188)**
Positive	-0.349	-0.353	-0.342	-0.316	-0.352	-0.347	-0.332	-0.304
	(0.152)**	(0.153)**	(0.156)**	(0.159)**	(0.162)**	(0.163)**	(0.166)**	(0.168)*
Negative	-0.302	-0.302	-0.278	-0.311	-0.288	-0.278	-0.256	-0.289
	(0.190)	(0.193)	(0.194)	(0.196)	(0.196)	(0.200)	(0.200)	(0.202)
Disabled x Positive	0.451	0.441	0.415	0.441	0.494	0.463	0.436	0.461
	(0.272)*	(0.277)	(0.278)	(0.285)	(0.277)*	(0.283)	(0.283)	(0.291)
Disabled x Negative	0.568	0.581	0.565	0.548	0.589	0.585	0.555	0.544
	(0.242)**	(0.244)**	(0.246)**	(0.255)**	(0.259)**	(0.262)**	(0.261)**	(0.271)**
Observations	804	804	803	781	791	791	790	768
r2								
District FE	Yes	Yes	Yes	Yes	No	No	No	No
Subdistrict FE	No	No	No	No	Yes	Yes	Yes	Yes
Basic Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Big 5	No	No	Yes	Yes	No	No	Yes	Yes
Extended Controls	No	No	No	Yes	No	No	No	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels. Outcome is 0 if respondent chooses gambles 1 or 2, and 1 otherwise.

Table A.8: Experimental risk measure: Priming and Disability interactions (OLS)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Disabled	-0.208	-0.204	-0.179	-0.212	-0.224	-0.226	-0.202	-0.249
	(0.172)	(0.186)	(0.187)	(0.197)	(0.176)	(0.193)	(0.193)	(0.206)
Positive	-0.222	-0.226	-0.225	-0.234	-0.225	-0.223	-0.223	-0.235
	(0.141)	(0.139)	(0.144)	(0.149)	(0.150)	(0.148)	(0.153)	(0.161)
Negative	-0.199	-0.191	-0.168	-0.180	-0.185	-0.172	-0.156	-0.158
	(0.168)	(0.173)	(0.175)	(0.181)	(0.169)	(0.172)	(0.174)	(0.181)
Disabled x Positive	0.236	0.211	0.172	0.188	0.275	0.240	0.208	0.216
	(0.272)	(0.279)	(0.279)	(0.289)	(0.282)	(0.290)	(0.289)	(0.300)
Disabled x Negative	0.326	0.341	0.323	0.357	0.349	0.348	0.327	0.373
	(0.235)	(0.237)	(0.239)	(0.245)	(0.246)	(0.249)	(0.249)	(0.257)
Observations	804	804	803	781	804	804	803	781
r2	0.0115	0.0223	0.0296	0.0371	0.0532	0.0642	0.0701	0.0778
District FE	Yes	Yes	Yes	Yes	No	No	No	No
Subdistrict FE	No	No	No	No	Yes	Yes	Yes	Yes
Basic Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Big 5	No	No	Yes	Yes	No	No	Yes	Yes
Extended Controls	No	No	No	Yes	No	No	No	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels.

Table A.9: Experimental loss aversion measure: Priming and Disability interactions (oprobit)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Disabled	0.149	0.173	0.176	0.255	0.162	0.186	0.196	0.268
	(0.131)	(0.139)	(0.141)	(0.150)*	(0.129)	(0.139)	(0.140)	(0.150)*
Positive	-0.102	-0.112	-0.126	-0.093	-0.093	-0.090	-0.101	-0.067
	(0.142)	(0.142)	(0.138)	(0.145)	(0.145)	(0.146)	(0.141)	(0.148)
Negative	0.062	0.074	0.072	0.100	0.079	0.095	0.101	0.135
	(0.139)	(0.139)	(0.137)	(0.141)	(0.146)	(0.144)	(0.142)	(0.147)
Disabled x Positive	-0.142	-0.208	-0.215	-0.259	-0.160	-0.226	-0.239	-0.286
	(0.175)	(0.179)	(0.182)	(0.189)	(0.188)	(0.193)	(0.196)	(0.204)
Disabled x Negative	-0.313	-0.317	-0.298	-0.324	-0.324	-0.340	-0.328	-0.356
	(0.180)*	(0.183)*	(0.178)*	(0.185)*	(0.182)*	(0.186)*	(0.182)*	(0.188)*
Observations	804	804	803	781	804	804	803	781
r2								
District FE	Yes	Yes	Yes	Yes	No	No	No	No
Subdistrict FE	No	No	No	No	Yes	Yes	Yes	Yes
Basic Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Big 5	No	No	Yes	Yes	No	No	Yes	Yes
Extended Controls	No	No	No	Yes	No	No	No	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels. Respondents are divided into 4 groups.

Table A.10: Experimental loss aversion measure: Priming and Disability interactions (Probit)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Disabled	0.348	0.408	0.430	0.487	0.387	0.451	0.483	0.534
	(0.153)**	(0.171)**	(0.173)**	(0.180)***	(0.155)**	(0.176)**	(0.178)***	(0.186)***
Positive	-0.060	-0.065	-0.082	-0.037	-0.029	-0.023	-0.037	0.010
	(0.157)	(0.160)	(0.157)	(0.164)	(0.160)	(0.162)	(0.158)	(0.166)
Negative	0.133	0.144	0.139	0.180	0.185	0.199	0.206	0.249
	(0.156)	(0.157)	(0.154)	(0.154)	(0.162)	(0.162)	(0.159)	(0.161)
Disabled x Positive	-0.306	-0.376	-0.389	-0.426	-0.365	-0.433	-0.463	-0.498
	(0.205)	(0.209)*	(0.209)*	(0.214)**	(0.222)	(0.226)*	(0.228)**	(0.234)**
Disabled x Negative	-0.434	-0.465	-0.451	-0.480	-0.490	-0.530	-0.526	-0.558
	(0.218)**	(0.228)**	(0.226)**	(0.231)**	(0.218)**	(0.228)**	(0.226)**	(0.230)**
Observations	804	804	803	781	804	804	803	781
r2								
District FE	Yes	Yes	Yes	Yes	No	No	No	No
Subdistrict FE	No	No	No	No	Yes	Yes	Yes	Yes
Basic Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Big 5	No	No	Yes	Yes	No	No	Yes	Yes
Extended Controls	No	No	No	Yes	No	No	No	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels. Outcome is 0 if respondent rejects all lotteries or accepts first lottery, and 1 otherwise.

Table A.11: Experimental risk measure: General relationships

	(1)	(2)	(3)	(4)
Disabled	-0.024	-0.020	-0.014	-0.026
	(0.082)	(0.096)	(0.100)	(0.104)
Positive	-0.061	-0.055	-0.060	-0.051
	(0.096)	(0.094)	(0.095)	(0.097)
Negative	-0.082	-0.079	-0.074	-0.078
	(0.118)	(0.120)	(0.119)	(0.122)
Respondent is female		-0.019	0.022	0.039
		(0.112)	(0.117)	(0.121)
Age of respondent		0.004	0.003	0.004
		(0.004)	(0.004)	(0.005)
Respondent is married		0.051	0.041	0.062
		(0.146)	(0.150)	(0.164)
Respondent is household head		0.056	0.052	0.055
		(0.132)	(0.134)	(0.142)
Respondent's disability status		-0.092	-0.108	-0.130
		(0.181)	(0.180)	(0.181)
Open to experience (Big 5)			0.058	0.058
			(0.019)***	(0.020)***
Conscientousness(Big 5)			-0.008	-0.003
			(0.034)	(0.034)
Extraversion (Big 5)			-0.000	0.001
			(0.034)	(0.035)
Agreeableness (Big 5)			-0.004	-0.002
			(0.030)	(0.030)
Neuroticism (Big 5)			-0.008	-0.009
			(0.027)	(0.028)
Compl. junior secondary				0.076
				(0.129)
Compl. senior highschool or more				0.302
				(0.174)*
HH size				-0.010
				(0.040)
How satisfied are u with your life				-0.050
				(0.050)
Subjective welfare level				-0.074
				(0.049)
Observations	804	804	803	781
r2	0.0088	0.0114	0.0206	0.0285
Subdistrict FE	Yes	Yes	Yes	Yes
Basic Controls	Yes	Yes	Yes	Yes
Big 5	Yes	Yes	Yes	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels.

Table A.12: Experimental loss aversion measure: Priming and Disability interactions (OLS)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Disabled	0.165	0.211	0.218	0.383	0.168	0.212	0.230	0.375
	(0.259)	(0.264)	(0.264)	(0.276)	(0.254)	(0.261)	(0.260)	(0.272)
Positive	-0.244	-0.261	-0.277	-0.193	-0.219	-0.216	-0.228	-0.148
	(0.249)	(0.244)	(0.236)	(0.247)	(0.254)	(0.250)	(0.241)	(0.253)
Negative	0.065	0.078	0.074	0.127	0.088	0.105	0.111	0.169
	(0.254)	(0.253)	(0.247)	(0.252)	(0.261)	(0.256)	(0.251)	(0.257)
Disabled x Positive	-0.123	-0.244	-0.253	-0.329	-0.127	-0.239	-0.259	-0.340
	(0.331)	(0.329)	(0.330)	(0.341)	(0.349)	(0.349)	(0.352)	(0.363)
Disabled x Negative	-0.450	-0.439	-0.406	-0.484	-0.465	-0.474	-0.454	-0.526
	(0.347)	(0.343)	(0.333)	(0.343)	(0.352)	(0.349)	(0.342)	(0.351)
Observations	804	804	803	781	804	804	803	781
r2	0.0225	0.0671	0.0783	0.0899	0.0624	0.1049	0.1150	0.1250
District FE	Yes	Yes	Yes	Yes	No	No	No	No
Subdistrict FE	No	No	No	No	Yes	Yes	Yes	Yes
Basic Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Big 5	No	No	Yes	Yes	No	No	Yes	Yes
Extended Controls	No	No	No	Yes	No	No	No	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels.

Table A.13: Experimental loss aversion measure: Priming and Disability interactions (Tobit)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Disabled	-0.146	-0.165	-0.170	-0.229	-0.153	-0.175	-0.185	-0.235
	(0.099)	(0.103)	(0.103)*	(0.108)**	(0.096)	(0.101)*	(0.100)*	(0.105)**
Positive	0.062	0.068	0.075	0.039	0.049	0.047	0.052	0.017
	(0.105)	(0.103)	(0.100)	(0.104)	(0.104)	(0.102)	(0.098)	(0.102)
Negative	-0.073	-0.079	-0.078	-0.105	-0.086	-0.094	-0.097	-0.126
	(0.106)	(0.105)	(0.102)	(0.103)	(0.106)	(0.104)	(0.101)	(0.102)
Disabled x Positive	0.122	0.171	0.175	0.207	0.130	0.176	0.186	0.220
	(0.134)	(0.133)	(0.133)	(0.136)	(0.140)	(0.139)	(0.139)	(0.142)
Disabled x Negative	0.247	0.247	0.234	0.262	0.262	0.269	0.262	0.289
	(0.141)*	(0.141)*	(0.137)*	(0.140)*	(0.140)*	(0.140)*	(0.136)*	(0.139)**
Observations	804	804	803	781	804	804	803	781
r2								
District FE	Yes	Yes	Yes	Yes	No	No	No	No
Subdistrict FE	No	No	No	No	Yes	Yes	Yes	Yes
Basic Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Big 5	No	No	Yes	Yes	No	No	Yes	Yes
Extended Controls	No	No	No	Yes	No	No	No	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels. Implied λ values from Gchter et al. (2007) are used, where 3 is the upper and 0.87 is the lower limit.

Table A.14: Post-experimental risk measures: Priming and Disability interactions (Ordered Probit)

	Overall	Bike	Occup	Faith	Finance	Loan	Busine	Health1	Health2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
main									
Disabled	0.122	0.125	0.122	-0.039	-0.009	0.033	0.175	0.175	0.241
	(0.139)	(0.131)	(0.143)	(0.113)	(0.124)	(0.132)	(0.125)	(0.130)	(0.132)*
Positive	0.113	-0.122	-0.059	-0.114	0.073	-0.209	-0.189	0.098	0.180
	(0.098)	(0.120)	(0.124)	(0.136)	(0.104)	(0.126)*	(0.134)	(0.102)	(0.110)
Negative	0.094	0.063	-0.007	-0.048	-0.004	-0.073	-0.074	0.096	0.025
	(0.112)	(0.125)	(0.113)	(0.124)	(0.125)	(0.125)	(0.112)	(0.131)	(0.126)
Disabled x Positive	-0.049	-0.265	-0.087	-0.093	-0.062	-0.040	-0.247	-0.229	-0.131
	(0.181)	(0.193)	(0.170)	(0.176)	(0.188)	(0.183)	(0.147)*	(0.183)	(0.183)
Disabled x Negative	-0.167	0.043	-0.048	-0.034	-0.081	0.231	-0.106	-0.357	-0.339
	(0.178)	(0.197)	(0.197)	(0.194)	(0.144)	(0.161)	(0.165)	(0.176)**	(0.178)*
Observations	803	802	803	803	803	803	802	803	803
r2									
Subdistrict FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Basic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Big 5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors clustered at the village level. */**/*** denotes significant at the 10/5/1 percent significance levels.