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CAN DEBIASING PROVIDED OVER THE INTERNET IMPROVE CONSUMER FINANCIAL DECISIONS? EVIDENCE FROM EXPERIMENTS ON LIFE INSURANCE DECISIONS FROM INDIA AND THE U.S.

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CAN DEBIASING PROVIDED OVER THE INTERNET IMPROVE CONSUMER FINANCIAL DECISIONS? EVIDENCE FROM EXPERIMENTS ON LIFE INSURANCE DECISIONS FROM INDIA AND THE U.S.

SANTOSH ANAGOL¹ SHAWN COLE² LAURA LITVINE³

ABSTRACT

Over the last few decades, the Indian population has gained access to an increasing array of insurance and investment options. While financial markets promise to facilitate the higher average long-run return in equity markets make them an attractive avenue for wealth accumulation, limited understanding of complex financial markets often may causes people to save in sub-optimal instruments. In particular, the apparent safety, money-back features and tax-breaks associated with whole life insurance products have led a large fraction of Indians to save in these products. In fact, these consumers may be much better off buying term policies and investing the difference in premiums directly in financial markets. We identify several barriers to optimal financial decision-making and experimentally test whether barrier-specific financial advice messages can help consumers make better investment decisions. We conduct online experiments both in the U.S. and in India, and conclude that information alone is not sufficient; subtle de-biasing message have only limited and non-significant impacts on the India sample.

1. INTRODUCTION

Faced with an array of complex products and choices, consumers often make suboptimal financial decisions, which can lead to poor outcomes in the medium and long run both for the households themselves, and the economy as a whole. This may be even more true in emerging markets like India, where two decades of rapid economic growth, combined with a policy focus on financial inclusion, have made financial instruments available to tens of millions of people who previously were unable to participate. While this has the potential to dramatically increase household welfare, it also raises important concerns, especially for individuals and households with limited experience participating in financial markets, who may make costly mistakes. Financial regulators and policymakers are increasingly concerned about ensuring household savings are invested in stable financial products. Several policymakers, including former Indian Finance Minister Pranab Mukherjee, have emphasized financial education as a means to help households make betterinformed decisions that will help secure their present and future welfare⁴. In spite of this demand for effective consumer education, there is surprisingly little theoretical or real world evidence to inform policymaking or program formulation.

Our research focuses on life insurance, and specifically on the choice between term and whole life insurance products. India's Insurance Regulatory and Development Authority (IRDA) estimates that 20% of household savings in India are held in life insurance policies, which makes this research broadly relevant to financial regulators interested in improving access to and stewardship of savings, such as the Reserve Bank of India and the Ministry of Finance.

Insurance is a complex product, and even sophisticated consumers can easily make mistakes when deciding which type of product to purchase, since a thorough understanding of product features is necessary to make the optimal purchase decision. The choice between whole and term life insurance policies is a particularly useful area in which to identify and attempt to reduce sub-optimal financial decisionmaking.

Indeed, in the Indian market, irrespective of consumer's income or age, choosing a combination of a term life policy and savings product strictly dominates choosing a whole life policy for the consumer. Anagol, Cole, and Sarkar (2012) present a careful analysis of life insurance options in India, directly comparing several of the most popular insurance products from the perspective of a consumer. Term life insurance involves the purchase of a policy (the premium is typically paid annually, though it could be paid in a single lump sum, or over different frequencies) which provides a prespecified benefit if the policy holder dies during the term of coverage. If the policy-holder survives beyond the length of the policy, the policy expires and she will receive no payments from the insurance company. An alternative product, called "whole life insurance," requires much higher periodic payments (or a greater lump sum payment) for an equivalent level of coverage, but, will provide a payment whenever the policy holder dies, even if she has completed the schedule of premium payments. Some policies provide a lump-sum benefit when the policy reaches a certain

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⁴ Pranab Mukherjee for more thrust on micro insurance products,I All-India DNA Newspaper, 6/8/2010 (http://www.dnaindia.com/money/report_pranab-mukherjee-formore-thrust-on-micro-insurance- products 1393743)

age (e.g., 80), or provide periodic pension-like payments.

Whole policies promise the return of the entire nominal premiums (plus additional bonuses) with certainty, and as such may be particularly appealing to those who suffer from common behavioural biases, such as loss aversion, failure to appreciate the power of compound growth (exponential growth bias). In practice the promise future payments are of low value, as they are made in an environment with relatively high inflation (ca. 8%), and more importantly, grow only linearly, rather than compounded (e.g., the promised coverage might increase from Rs. 100,000 in year 1, to 104,000 in year 2, 108,000 in year 3, and 180,000 in year 20. This 4% non-compounded growth is much less than what 100,000 Rs would arow to at a compounded interest rate (100,000*1.08^2=466.095). Anagol et al. (2013) carefully evaluate the relative attractiveness of popular policies, and find that whole insurance is very expensive, relative to an alternative portfolio which purchases an equivalent level of coverage through term insurance, and places the money saved in an interest-bearing account. The magnitude of the difference may be striking, with the term policy and savings combination yielding as much as eight times as much wealth for a consumer living to age 80; nevertheless, a vast majority of insurance purchasers continue to purchase whole life insurance policies.

A large and growing body of literature tries to explain where bad financial decisions originate: hypotheses range from a lack of information, exposure to misinformation, or the presence of pre-existing cognitive or behavioural biases (Gabaix and Laibson, 2006; Carlin, 2009). Anagol, Cole, and Sarkar (2013) examined the supply-side of the life-insurance market in India by auditing commission-motivated life insurance agents to identify the type and quality of information that consumers were provided when making policy purchase decisions. The results indicated that commission motivated agents significantly misinform consumers and obstruct optimal decisionmaking, especially for less sophisticated consumers. In the present study we turn our attention to the demandside, to assess the effectiveness of consumer financial education in overcoming cognitive biases and misinformation. Using an online lab experiment, we examine how real customers respond to specially formulated financial education messages. After conducting similar interventions on Amazon Mechanical Turk users in India and the U.S., we find evidence that an informational gap exists, but that basic information alone does not seem to be sufficient to cause respondents to shift from the dominated (Whole Life Insurance) to the dominant (Term Life Insurance) option. Further, messages targeting specific biases only had a significant effect in the U.S. sample, while only a very strong and straightforward nudge

led Indian respondents to shift from Whole Life to Term Life.

The remainder of this paper is organized as follows: Section 2 provides background on the literature. Section 3 describes the experimental design of this study, while Section 4 presents its results. In Section 5, we discuss our results and the next research steps.

2. CONTRIBUTION TO LITERATURE

Many economics, finance and psychology studies have tried to investigate the determinants of financial decision-making, and to identify the potential reasons for widely observable sub-optimal decisions such as under-saving for retirement, or choosing a clearly dominated financial product. The literature investigates the following three explanatory channels for poor consumer financial decisions: (1) a lack of information that limits customer knowledge and familiarity to the most common product, (2) misinformation by agents who benefit from poor customer decisions, and (3) preexisting cognitive biases leading customers to prefer the bad product to the good one.

Many studies from the field of financial literacy and education have shown that customers around the world suffered from a knowledge gap when it came to making financial decisions. Lusardi and Mitchell (2006) in developed countries, and Cole et al. (2011) in developing countries, have for instance documented low levels of financial literacy as well as low awareness about banking products and practices. Further, a growing literature suggests the existence of a strong correlation between financial literacy and household welfare, including participation in saving, credit, investment (Lusardi and Mitchel, 2014, provide a recent and comprehensive overview), while a number of studies show that carefully chosen default options, which can be interpreted as a type of advice, are very effective at raising savings contributions (Madrian and Shea (2001), Choi et. al. (2003)). For example, Goda et. al. (2012) find that providing information on the growth path of savings changes employees savings decisions. Choi et. al. (2012) show that very small changes in cues can lead to changes in savings choices. Overall, these results suggest that information can have a positive impact on financial decisions. But while the potential benefits of financial literacy and advice are well documented in developed countries, the evidence of their impact on low-income populations is lacking.

A growing body of work in economics and finance suggests that the financial advice provided by private firms (and the agents they hire) is not necessarily in the interest of consumers, who therefore might end up being purposely misinformed. As mentioned above, Anagol, Cole and Sarkar (2012) find that life insurance salesmen in India recommend dominated

products and cater to consumer's pre-existing, incorrect, biases. Mullainathan et al. (2010) find that financial advisors in the U.S. recommend that individuals invest in sub-optimal portfolios. These results are puzzling in the context of standard models of markets for information, in which firms should have an incentive to provide consumers good financial advice as a way of winning business. New theoretical models, however, provide explanations for how bad financial advice can exist in equilibrium; Gabaix and Laibson (2006) and Heidhues et al. (2012) show that firms may not have an incentive to provide good advice because providing good advice does not necessarily win them more business. In these models, educating customers causes them to avail of low profit margin products as opposed to increasing demand for high profitability products⁵. Carlin (2009) presents a competitive equilibrium where firms have an incentive to make products more complex as a way of sustaining higher prices; his result suggests that firms will not have an incentive to provide easily understandable advice. This collection of empirical and theoretical work suggests that market mechanisms alone will not lead to consumers receiving reliable information on the quality of different financial products. This raises an important policy question: what are other effective methods of providing good financial information to consumers? Promising avenues include disseminating financial advice via information campaigns conducted directly either online, or at the workplace. This study investigates the first option, while a separate paper, where an experiment is conducted in partnership with a major Indian firm, will look into the second.

Finally, this study contributes to the substantial literature investigating the behavioural determinants of observed financial choices. A number of studies conducted in the lab or in the field have indeed showed that cognitive biases such as myopic loss aversion, which is a specific type of narrow framing where investors narrowly frame either short-term results or parts of their portfolio in isolation as opposed to considering the underlying long run return process of their portfolio as a whole (Thaler et. al (1997), Fellner and Sutter (2009), Barberis and Huang (2001), Anagol and Gamble (2012)), or exponential growth bias, that leads investors to linearize (and therefore underestimate) interest rates (Stango and Zinman (2009)), have a significant impact on financial decisions. Narrow framing and loss aversion have been extensively explored in the context of investment portfolios, while exponential growth has been studied in the context of loans, but to our knowledge, ours is the first paper to test their importance on consumer insurance purchase choices.

3. EXPERIMENTAL DESIGN: THE "MTURK" EXPERIMENTS

Following previous research on the subject, we hypothesize that customer bias towards Whole Life insurance policies can come from either (1) an information gap; (2) an exponential growth bias, customers underestimating the difference between the returns from simple and compound interest; (3) narrow framing of decisions, that together with loss aversion, lead customers to consider their decision in isolation from the rest of their portfolio and objectives or considering returns in isolation from costs, or (4) customers being misinformed and strongly influenced by the common assumption that one type of policy is better than the other.

We therefore designed treatment messages directly targeting the biases that we identified as potential determinants of suboptimal financial decision-making, and subsequently tested their relative impact through a series of experiments that we conducted in two waves, recruiting a first sample in India, and a second sample in the U.S.. This will allow us to assess the relative efficiency of the different messages in encouraging customers to choose the better product. All respondents to these pilot experiments were recruited via Amazon Mechanical Turk (Mturk), an internet-based crowd-sourcing marketplace that allows —requesters to post tasks online for—workers to complete for a certain pre-set wage. Workers can be selected according to education, location, or other criteria, and only get paid upon successful completion of the task. Even though considerable limitations exist in using this type of platform to conduct experiments, mostly due to the fact that we cannot monitor sessions like in a usual lab experiment, we however have no reasons to believe that this will hinder the validity of our results, as our program was designed as to filter any —fakell or automated answers by tracking inconsistent replies. Further, previous research has shown that online studies can yield valid results on par with lab and field experiments (Horson et al., 2010). We conducted the experiments in September 2012, and collected a total of 667 completed surveys in India and 712 in the U.S.

Both waves of experiments followed the same format and were conducted as self- administered computerized surveys. Each interested subject was first presented with a short case study introducing either Amit to Indian respondents, or John to US-based respondents, both young fathers considering the purchase of a life insurance policy. Participants were informed that they would have to help Amit or John make the right decision. Some pre-treatment questions were then asked, measuring basic demographics, ex-

⁵ For example, a bank that informed consumers that other banks charge high, hidden, fees may not win the business of consumers; instead, consumers might continue to stay with other banks and simply avoid the actions that cause the hidden fees.

ante basic financial knowledge, testing awareness of financial products, knowledge of interest rates, and understanding of life insurance concepts. Respondents were then also asked what type of insurance policy they would advise Amit or John to purchase. Following these first questions, respondents were shown a short video where an actor plays the role of a life insurance agent delivering a -neutrall sales pitch and presenting the basic concepts of life insurance and the differences between the main types of policies. Respondents were then randomly assigned to one of five groups, and subsequently presented, according to their treatment group, with different messages intended to address specific biases. Following these messages, participants were finally asked again what type of insurance policy they would purchase if they were in Amit's or John's position. The difference in propensity to choose Term Life Insurance over Whole Life insurance pre and post-treatment was be the main outcome variable considered during the analysis.

To ensure that respondents thought carefully of their answers, each —correctI answer to a knowledge question was awarded a small financial prize, while giving a —correctI answer to the final question about the type of policy chosen was awarded a bigger prize. Indian respondents earned an average of USD 0.85 and US respondents an average of USD 0.95.

The treatment groups were defined as follows (Messages provided to each treatment group are reproduced in the Appendix):

1. A control group was shown the short video and a neutral message repeating the case study. Pre-post difference in propensity to choose Term Life insurance of these respondents was used as a benchmark for the effect of the video alone. This could therefore be identified as the effect of bridging the information gap alone.

2. The "Exponential Growth" treatment group saw the short video plus a slide exposing the difference between linear and exponential returns. This treatment was conceived as an interactive illustration of the way different amounts invested annually would evolve over 35 years if placed on one hand in an account returning linear interests, or on the other hand in an account returning compound interests. Respondents could select the amount and see a graphical representation of the value taken by the respective accounts. This interactive feature was inspired by previous behavioral research that had demonstrated that people were more likely to remember information when they had had to actively participate than when the information was just delivered to them.

3. The "Narrow-framing" treatment group saw the short video plus a second animated video where two characters discuss the advantages and inconveniences of buying vs. renting a house. The script was written so as to highlight the fact that considering only returns without thinking about costs might lead to poor financial decisions. In order to make sure that respondents would make the link between the video and life insurance purchases, the following sentence was added at the end of the video: "When purchasing real estate, life insurance or other assets, rather than just thinking "If I don't get anything back in the end, I lose all the money I put in!" it might be useful to think about less obvious costs".

4. The Strong Nudge treatment group saw the short video plus a short text explaining that there are better alternatives to Whole Life insurance and revealing the value of the returns that Amit or John could get if they were to choose this alternative. A similar treatment was also added for the U.S. sample only where values were not revealed.

5. The Whole Life treatment group, to which only Indian respondents were assigned, included the video plus a short text highlighting the main advantage of Whole Life Policies (namely, that they provide returns even if the policyholder does not die). This treatment was added so as to investigate the hypothesis that maybe respondents might be trying to give the answer that they think the experimenter is expecting, rather than the answer that they believe to actually be the best choice. If this were true, we should observe a switch from Term life insurance to Whole life insurance between pre- treatment and post-treatment measurements.

Randomization was conducted at the individual level, such that approximately 15% of the sample would be assigned to control, and approximately 22% to each treatment group. Table 1 shows a summary of assignment to treatment, separately for the India and the U.S. samples. We present balance checks and the analysis results obtained in the next section.

4. RESULTS

Tables 2 and 3 report the demographics of the recruited subjects and check for balance in the randomization. Indian subjects were 40% female and 29 years old on average. They had 14 years of education, earned INR 25,000 (USD 450) per month, and were mostly from service sector industries such as the IT, financial services, and educational sectors. US subjects were 59% female and on average 34 years old. They had 14.5 years of education on average and made \$ 2,000 per month. U.S. subjects were not asked about their occupational backgrounds. The samples reflected the usual characteristics of workers on the Mechanical Turk platform, where most participants from India are young professionals and a good number of participants from the US tend to be stay-at-home mothers.

Table 1: Assignment to treatment

	India Sample	US Sample
Control	74	104
Exponential growth	148	201
Narrow Framing	144	207
Strong nudge: Combination of all three others	150	200
Whole Life	151	Not offered
"Saving the difference"	Not offered	208
Total	667	920

	Control	EG debiasing	WI nudge	Narrow	Combined
	Control	EG debiasing WL nudg		framing	nudge
	Mean	ITT	ITT	ITT	ITT
	(1)	(2)	(3)	(4)	(5)
Gender (female==1)	0.38	-0.04	-0.13*	0.02	-0.02
	(0.49)	(0.08)	(0.08)	(0.08)	(0.08)
Age	29.32	-1.08	-0.83	1.15	-0.46
	(9.67)	(1.39)	(1.42)	(1.61)	(1.52)
Education	14.41	0.35	1.17*	0.31	0.40
	(4.95)	(0.77)	(0.70)	(0.79)	(0.71)
Income (Rs. '000)	25.00	2.01	1.85	2.60	-1.08
	(27.57)	(4.29)	(4.35)	(4.54)	(4.33)
Industry: IT	0.38	0.00	0.00	-0.06	-0.04
	(0.49)	(0.08)	(0.08)	(0.08)	(0.08)
Industry: Financials	0.15	0.00	-0.08*	-0.02	-0.06
	(0.36)	(0.06)	(0.05)	(0.06)	(0.05)
Industry: Education & research	0.14	0.01	0.05	-0.04	0.04
	(0.34)	(0.06)	(0.06)	(0.05)	(0.06)
Industry: Trade and retail	0.08	-0.05	-0.02	-0.02	-0.04
	(0.27)	(0.04)	(0.04)	(0.04)	(0.04)
Loss averse	0.62	0.00	0.13*	0.03	0.01
	(0.49)	(0.08)	(0.07)	(0.08)	(0.08)
Compound int. > linear int.	0.71	-0.21**	-0.08	-0.16	-0.07
	(0.46)	(0.10)	(0.10)	(0.10)	(0.11)
N	74	148	151	144	150

Table 2: Balance check - India sample

Notes: Participants were randomized into five different groups, each of which received a different de-biasing message. Column (1) provides the mean and standard deviation of the control group that received the neutral message. The last four columns provide an Intention to Treat (ITT) estimate of the difference in means (and the robust standard error) between treatment groups and the control group. 'Difference' refers to simple differencing against the control group mean. *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 3: Balance check - U.S. sample

	Control Mean	EG de- biasing ITT	DF nudge ITT	Narrow framing ITT	Strong nudge ITT
	(1)	(2)	(3)	(4)	(5)
Gender (female==1)	0.59	-0.02	-0.11	0.03	-0.08
	(0.49)	(0.07)	(0.07)	(0.07)	(0.07)
Age	34.13	-0.39	-1.87	-1.15	-2.41
	(12.84)	(1.75)	(1.61)	(1.68)	(1.60)
Education	14.45	-0.30	0.42	-0.81*	0.17
	(2.78)	(0.47)	(0.40)	(0.49)	(0.39)
Income (\$ '000)	2.22	-0.01	-0.03	-0.09	0.22
	(1.60)	(0.22)	(0.22)	(0.22)	(0.24)
Loss averse	0.72	-0.07	-0.08	-0.05	0.08
	(0.45)	(0.06)	(0.06)	(0.06)	(0.06)
Compound int. > linear int.	0.39	0.03	-0.04	-0.09	-0.07
-	(0.49)	(0.07)	(0.07)	(0.07)	(0.07)
Ν	104	201	207	200	208

Notes: Participants were randomized into five different groups, each of which received a different debiasing message. Column (1) provides the mean and standard deviation of the control group that received the neutral message. The last four columns provide an Intention to Treat (ITT) estimate of the difference in means (and the robust standard error) between treatment groups and the control group. Difference' refers to simple differencing against the control group mean. *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

In the initial stage of the experiment, participants were asked a classical set of behavioural economics questions related to loss aversion, plus a financial literacy question asking whether, given the same stated interest rate, a compound interest account paid more in returns or a linear, non-compound interest account. For the first set of questions, about 62% of the subjects in the Indian sample and 72% in the U.S. sample displayed —loss aversion⁶. About 71% of the Indian subjects correctly answered the compound interest question, whereas about 39% of the U.S. sample answered correctly. In all, subject recruitment and randomization produced reasonably balanced, reasonably representative samples of the Indian and U.S. life insurance consumers⁷.

Tables 4 and 5 report the main results of the online experiments. First, the trends in the control groups confirm that not only do many fewer people choose whole life in the outset, but there is also a strong natural bias that guides more people to choose whole over term the more they are prompted to think about the life insurance choices. This is evident from looking at the control groups where the proportions of people choosing term drops from 32% to 23% in the Indian sample (15% switches from term to whole and 6% switches from whole to term, resulting in a net 9% drop), and decreases from 26% to 21% in the U.S. sample.

In the India sample, the only de-biasing that seemed to have led to a significant effect on the insurance choice of respondents was the strong nudge. On average, 6% of those who received the neutral message switched from choosing whole life insurance to choosing term. On the other hand, 21% of those who received the strong nudge switched from whole to term, and this difference was statistically significant at the 1% level. In addition, among those who received the strong nudge in the Indian sample, only 4% switched over from term to whole, compared to 15% in the control group, and the difference was statistically significant at the 5% level. The strong nudge thus appears to have persuaded people who would have chosen whole to switch over to term. It may also counteract the tendency of people who would have switched over from term to whole and leading them to stay with term. In sum, a fraction of participants who received the effectively condensed information contained in the strong nudge seemed to have acted in a manner consistent with an understanding of how the portfolio value of term life insurance far outweighs that of the whole. On the other hand, the educational message about exponential growth, the message about the perceived attractiveness of whole life insurance, or the illustrative video about the potential pitfalls of narrow framing did not have any effect on the way Indian participants make their recommendations on life insurance choices.

On the other hand, the difference nudge, the narrow framing nudge and the strong nudge all had statistically significant effects on the way U.S. life participants made their insurance recommendations for John. In the control group, 4% of participants switched from recommending whole to recommending term for John. Among those who were primed to focus on the difference in premiums, 12% switched, and this difference was statistically significant at the 5% level. Among those who saw the narrow-framing de-biasing video, 15% switched and the difference was statistically significant at the 1% level. Among those who were given the strong nudge, 39% switched and the difference was statistically significant at the 1% level.

In addition, the treatment groups generally performed better than the control group on the compound interest vs. linear interest question. Those who received the exponential growth educational message, those who received the difference nudge, those who saw the narrow- framing de-biasing video and those who received the strong nudge were 36% (significant at the 1% level), 13%, 15% and 27% (significant at the 5% level) more likely to give the correct answer the compound interest question, respectively.

The U.S. sample proved to be much more responsive to the de-biasing treatments. In the case of those who received the strong nudge, 55% of respondents ultimately recommended term life for John, compared to only 21% in the control group. Even more noteworthy was subjects' responsiveness to the subtler cues of the narrow-framing de-biasing video. Over 11% of people switched from recommending whole to recommending term after viewing the video, and this was the second biggest proportion of switch among the treatment groups. This performance was despite the fact that the video did not mention anything about compound interest or insurance premium.

⁶ Subjects were first asked to choose between Option A, — A sure gain of Rs.25,000 (\$2,500 for US subjects), and Option B, —A 25% chance of winning Rs.100,000 and a 75% chance of winning nothing. Afterwards, the subjects were asked to choose between —A sure loss of Rs. 75,000I and —A 75% chance of losing Rs. 100,000 and a 25% chance of losing nothing. 62% of the Indian subjects Option A in the beginning then switched in the next question.

⁷ A noteworthy and rather unfortunate fact was that in the Indian sample, 20% less among those who were sampled into receiving the educational treatment about exponential growth answered the initial question about compound interest correctly. This difference was significant at the 5% level.

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	Control	EG debiasing	WL nudge	Narrow framing	g Strong nudge
	Mean	ITT	ITT	ITT	ITT
	(1)	(2)	(3)	(4)	(5)
Chose Term before	0.32	-0.06	-0.14**	-0.10	-0.12*
	(0.47)	(0.07)	(0.07)	(0.07)	(0.07)
Chose Term after	0.23	-0.01	-0.05	-0.08	0.14*
	(0.42)	(0.07)	(0.06)	(0.06)	(0.07)
Switched from Whole to Term	0.06	-0.01	0.03	-0.01	0.15***
	(0.24)	(0.04)	(0.04)	(0.04)	(0.05)
Switched from Term to Whole	0.15	-0.06	-0.07	-0.03	-0.11**
	(0.36)	(0.05)	(0.05)	(0.05)	(0.04)
compound int. > linear int.	0.60	0.00	0.01	-0.01	0.10
	(0.49)	(0.08)	(0.08)	(0.08)	(0.08)
N	74	148	151	144	150

Notes: Participants were randomized into five different groups, each of which received a different debiasing message. Column (1) provides the mean and standard deviation of the control group that received the neutral message. The last four columns provide an Intention to Treat (ITT) estimate of the difference in means (and the robust standard error) between treatment groups and the control group. 'Difference' refers to simple differencing against the control group mean. *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

	Control	EG debiasing	DF nudge	Narrow framing	Strong nudge
	Mean	ITT	ITT	ITT	ITT
	(1)	(2)	(3)	(4)	(5)
Chose Term before	0.26	-0.03	-0.03	-0.08	-0.07
	(0.44)	(0.06)	(0.06)	(0.06)	(0.06)
Chose Term after	0.21	0.04	0.02	0.06	0.34***
	(0.41)	(0.06)	(0.06)	(0.06)	(0.06)
Switched from Whole to Term	0.04	0.04	0.08**	0.11***	0.35***
	(0.19)	(0.03)	(0.04)	(0.04)	(0.05)
Switched from Term to Whole	0.09	-0.03	0.04	-0.03	-0.06*
	(0.29)	(0.04)	(0.04)	(0.04)	(0.03)
compound int. > linear int.	0.55	0.20***	0.07	0.08	0.15**
	(0.50)	(0.07)	(0.07)	(0.07)	(0.07)
N	106	209	212	208	212

	Table 5): Trea	tments	effects	on insurc	ance choice	– U.S. sample
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Notes: Participants were randomized into five different groups, each of which received a different debiasing message. Column (1) provides the mean and standard deviation of the control group that received the neutral message. The last four columns provide an Intention to Treat (ITT) estimate of the difference in means (and the robust standard error) between treatment groups and the control group. 'Difference' refers to simple differencing against the control group mean. *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Note that the thrust of the message in the video was meant to be conveyed via a simple, indirect analogy between insurance choices and the choice of renting versus buying a house⁸. This suggests that, to the regular consumer, well-designed heuristic analogies can be much more effective in conveying the decisionrelevant informational structure for solving a given problem than can plainer, more literal illustrations of relevant concepts. Indeed, in a separate, unreported regression, we see a lack of correlation between a better sense of exponential growth and term choice. This seems to suggest that choices between complicated financial products, at least in the household context, depend more on choice heuristics than on better numerical approximations of the underlying value of the policies.

It is important at this point to consider the different results obtained in the U.S. and in India. One possible explanation might be the presence of localized comprehension barriers that may have made the nudges more difficult for the Indian participants to understand. The experiment was administered in English - which is only the second language of most Indians, and used some both technical financial terms and colloquial expressions that might have been harder to understand for young Indians than for U.S. residents more familiar with this vocabulary. For example, Americans are probably more familiar with the (incorrect) idea that renting a house is throwing money away relative to buying a house; young Indians typically live with their parents and do not have experience with purchasing a house. An alternative is that behavioural biases may be much stronger among the Indian population. A reviewer referred us to Platteau (1997) which argues that biases may be more present in societies in which reciprocity is more

⁸ We believe that the discussion between John and Vidya on the hidden costs to buying a house made the viewers ask themselves whether there are any hidden costs to purchasing the whole life insurance they have not considered.

common. Unfortunately, our experimental design does not allow us to test these hypotheses.

5. CONCLUSION

This series of experiments provides lessons we believe may inform practice when it comes to designing financial information campaigns and questioning the regulation of the market for financial products:

- An obvious information gap exists both in India and in the U.S., suggesting well- designed information campaigns may help. Yet, information alone, such as the short video shown, does not seem to be sufficient.
- Only very strong and direct nudges seem to work in the Indian context. This does not, however, seem to be driven by people catering to what they think the experimenter wants, as we saw no impact of the Whole Life treatment.
- More subtle messages seem to have had a significant impact on the U.S. sample, suggesting that the biases we had identified-exponential growth, loss aversion and narrow framing-may be important determinants of the pre-treatment choices.

These results suggest the following research questions: First, the media used by the different messages included video, text, or animations. The treatment effect may be confounded by a medium effect, which we are unfortunately not able to control for in this experiment. Second, our sample here was too small and homogenous for us to have enough power and variation to control for potential effects of education, financial history, age, or family situation. This prevented us from investigating any heterogeneous effects, and more importantly from disentangling the impact of education from the impact of a strong bias towards Whole Life policies when analysing the results of the Indian experiment. Finally, and perhaps most notably, the respondents of these experiments were recruited only based on their country of residence and desire to spend time and effort completing the survey, and were asked to give advice for someone else, rather than reveal what they, themselves, would do with their own finances. This therefore provides us with very useful information about the relative efficiency of the different messages, but this does not allow us to know whether the messages would have the same impact on people making real financial decisions. Further research projects should these experiments directly to the field and to real customers.

We believe that the results presented in this current paper provide useful guidance on how information campaigns can be structured to improve choices in a specific context where consumers seem to be making sub-optimal decisions. Given the low cost of giving individuals access to these types of videos, we believe video based financial advice has great potential to be a cost effective way to improve consumer decisionmaking.

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APPENDIX - TREATMENTS

1. Neutral treatment

Q7 Here is some information about financial decision making/financial products. There is no bonus associated with this slide, but please pay attention as this may help you later. This may be a repeat of information you have seen.

Your friend Amit, who is 30, loves his family. But he is worried that if he dies early, his wife and two kids will not be able to live comfortably or meet their financial obligations. He wants to cover this risk at an affordable cost. If possible, he wants to leave at minimum 30 lakh rupees for his family even if he passes away. He heard about different types of life insurance policies, and has come to you for advice.

2. Exponential Growth treatment

Q7 Here is some information about financial decision making/financial products. There is no bonus associated with this slide, but please pay attention as this may help you later.

Consider on one hand a fixed deposit account that pays out 8% interest compounded annually, and on the other hand a linear interest account, that accumulates 8% linear interest annually. The simulator below shows you how both accounts will grow if you deposit one of the given amounts in them every year for 35 years starting at age 30 and not withdraw any money. Pay attention to the difference between the two lines !

And remember, whole life insurance policies pay out linear interest rates, while many savings accounts pay out compounded interests.

Rs. 10,000	Rs. 20,000	Rs. 30,000	Rs. 40,000	Rs. 50,000	Rs. 60,000
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3. Narrow Framing Treatment



4. Strong Nudge Treatment

When comparing choices between term life and whole life policies, consider that **the difference in premiums between the two policies is Rs. 65,000**. If Amit buys a term life policy and saves this difference every year in a fixed deposit account that pays out 8% interest rate annually, he will have saved over 120 lakh rupees by the end of his 35 year term.

5. Whole Life Treatment

When comparing choices between term life and whole life policies, remember that under a whole life policy, the coverage balance accumulates on average by 3% bonus of the principle amount every year. If Amit survives after 35 years, he will have the option of withdrawing the coverage balance of about 70 lakh rupees or leaving it in the account for later withdrawal by his family.





Labour Office micro nsurance nnovation facility

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Housed at the International Labour Organization's Social Finance Programme, the Microinsurance Innovation Facility seeks to increase the availability of quality insurance for the developing world's low income families to help them guard against risk and overcome poverty. The Facility was launched in 2008 with generous support from the <u>Bill & Melinda Gates Foundation</u> to learn and promote how to extend better insurance to the working poor. Additional funding has gratefully been received from <u>several donors</u>, including the <u>Z Zurich Foundation</u> and AusAID.