

**Using Psychology to Encourage Household Savings**

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Savings can be defined as resources that are created in a given period of time that are not consumed immediately, but stored to be used at a later period of time. The neoclassic economics of savings decisions is unsurprisingly elegant. Individuals live for a fixed number of periods but their income profiles vary across time. They use capital markets to smooth their consumption over time by borrowing from the future and consuming from past savings (Ando & Modigliani, 1963; Modigliani & Brumberg 1954). The theory household savings – a relatively more complex problem – follows a similar basic paradigm (Deaton & Muellbauer, 1980).

A more relevant question for policymakers relates to methods by which the savings rate can be influenced. Traditional attempts work under the belief that economic incentives can make the act of savings relatively more attractive. For instance, individual retirement accounts (IRA's) - instruments offered by the government that allow households to make tax-deductible contributions, & then impose penalties for early withdrawal - can boost savings (Diamond & Hausman, 1984; Gale & Scholtz, 1994). Likewise, increasing the level of “match” in a 401(K) retirement program also increases the propensity to save (Thaler & Sunstein, 2008). However, a vast body of research has also shown that individuals are not necessarily rational and that they do not always act in their best interests, and sometimes get waylaid while trying to implement their best intentions (cf. Kahneman & Tversky, 2000).

Indeed, recent research has implicitly argued that efforts at solving social problems like poverty, education, hunger and public health; or at solving personal and household problems like savings rates, eating disorders and healthy lifestyles have focused excessively on developing solutions, and not as much on getting individuals to adopt those solutions (cf. Thaler & Sunstein, 2008; Mullainathan, 2009). Mullainathan (2009) refers to this as the “last mile problem,” a term borrowed from the field of telecommunications. The “last mile” refers to the final leg of delivering connectivity from a communications provider to a customer, and is often considered to be the weakest link because of the

complexities involved in physically reaching a vast and geographically dispersed body of end users.

Implementing programs to get households to save also presents an interesting last-mile problem. This is typically a problem of psychology – people are reluctant to adopt positive behaviours because of biased beliefs, choice complexities, self-control problems & perceptual errors (cf. Ratner et al., 2008, Soman, Xu & Cheema, 2010). In a recent demonstration in the consumer credit market, Bertrand & colleagues (2005) showed that that psychological variables played a significant role in decisions to take-up loan offers relative to more functional variables.

In this chapter, I present a snapshot of research that leverages insights from psychology to solve the last mile problem in the domain of household savings in rural India.

### The Psychology of the Last Mile

The best intentions do not translate into action because of several psychological considerations (Ainslie & Haslam, 1992; Elster, 1979; Schelling, 1984). The first is myopia and self-control. The dominant paradigm in this research is one of hyperbolic discounting. This paradigm suggests that when people make a choice between a sooner and smaller reward [SS] and a larger and later reward [LL] from a temporal distance, they are aware that the value of LL exceeds that of SS. However, when they move close to SS (either in time or physical distance), they fall into a “lapse zone” that temporarily blinds them to the attractiveness of LL. For instance, most people choose to receive \$120 in 53 weeks rather than \$100 in 52 weeks; however a significantly less proportion will accept \$120 in a week versus \$100 now. Note that SS and LL are metaphors of many choices we make – the choice between consuming a \$5 cappuchino today [SS] or padding the retirement fund with an extra amount [LL]; or the choice between eating an unhealthy dessert [SS] today versus a healthier life in old age [LL].

A second body of research that is relevant is work on distributed choice, situations in which many small decisions spread out over time aggregate to result in a consequence (cf. Herrnstein & Prelec, 1991). For instance, an individual cigarette [or unhealthy treat] will likely not cause any significant harm to one's health, but a lifetime of smoking [eating] will. Likewise, spending in moderation and on occasion is not harmful, but a habit of doing so can be disastrous.

What needs to be done in order to snap people out of a lapse zone and get them to think prudently about the decision at hand? Researchers have proposed numerous strategies including those that increase willpower and reduce temptation (Hoch & Loewenstein, 1991). More recently, Soman, Xu & Cheema (2010) propose that sophisticates (O'Donoghue & Rabin, 1999) - individuals who want to control consumption but are unable to - could be prompted into controlling their consumption by providing what they call decision points. They provide the example of two movie-goers who both buy an identical quantity of popcorn; except that one gets a large bucket of popcorn while the second gets the same quantity of popcorn in four separate bags. They suggest that the second person will eat less compared to the first. In a separate set of studies, Cheema & Soman (2009) show that partitioning various resources like food, international calling cards and gambling tokens allows the individual to curb consumption.

According to their account, consumers start off in a deliberative mode in which they actually think explicitly about the pros and cons of consumption. However, after they start consuming, they move quickly to an automatic mode and continued consumption becomes mindless and habitual. The provision of a decision point (e.g., when one bag of popcorn is finished) allows the individual to snap back to a deliberative mode – for a consumer who is trying to control consumption, this typically entails a call to vigilance. A decision point is any intervention that is designed to get an individual to “pause and think” and can be created in several ways. These include inserting transaction costs (which work on

the premise that requiring the individual to take a positive action makes them deliberate on the consumption decision), providing reminders (which work on the premise that drawing attention to a neglected activity can provide the impetus to get it done with) and by creating interruptions to the consumption activity (which work on the premise that the interruption allows the individual to pause and think).

### Decision Points in Rural India

The objective of a series of projects summarized here was to increase household savings rates of certain target populations in rural India. The studies are described in detail elsewhere (cf. Soman & Cheema, 2010; Soman & Zhao, 2010). We chose agricultural households as well as construction labourers as our target segment, and conducted our studies in parts of the country where there was no banking network, no formal access to consumer credit, with households who had the desire (but often not the will) to save more, and in which most transactions were conducted in cash.

In one set of studies, we examined savings behaviour for households who received cash incomes over short payment cycles (for instance, every three days), and in some cases when the timing and amounts of income was uncertain. Prior research suggests that budgeting and planning is easy in situations in which incomes are stable, and is earned over a frequency of time that is consistent with consumption cycles (Soman, 2010; Thaler, 1999). In one study with construction laborers, we worked in collaboration with a social work agency to change the manner in which cash salaries were disbursed. The group of 436 laborers lived across three villages and worked at an infrastructure development project in rural India, earning an average of Rs. 535 per job (1 rupee = US\$ 0.022). Recruitment of labor was done on a daily basis (see Jhabvala & Kanbur, 2002). Every morning, a call would go out for

laborers of various trades and some would get selected for the job. On an average, each labourer got a job every 3.26 days [range: 2 to 6 days]. A banker was recruited to help conduct the study, and their analysis suggested that although the wages were low, these households could potentially save about 6% of their incomes. A social worker was present when cash wages were disbursed to collect the cash and give it to the labourers. The social worker also visited each household every week to monitor actual spending & savings.

Over a period of six months, we monitored the incomes, expenses and savings of all households. In a three month tracking period, we found that the average savings rate for this group was about 2.5%. We also found evidence to suggest that each household adjusted their consumption cycle to match their income cycle. For instance, if a laborer knew that s/he would be getting the next job in three days, they would spend all their existing cash reserves and begin their financial life anew with the new income.

At the end of the three month tracking period, the social worker divided the cash roughly equally across four sealed envelopes in two of the villages (but there was no change in the third village). Results at the end of six months showed that the average savings rate in the two treatment [wage in envelope] conditions was 5% as compared to 2.5% in the control. The act of having to tear open an envelope to dig into the money clearly seemed to work as a decision point that seemed to temper spending.

A second experiment using sealed envelopes as decision-points was conducted with a group of 232 regular farm labourers who were paid Rs. 720 in cash every three days during the monsoon season. This group also lived their economic lives “three days at a time.” In one experimental treatment, some labourers received their cash wage divided equally in four sealed envelopes (with Rs. 180 in each). An inexpensive marketing campaign urged them to spend “one [envelope] a day, and keep the fourth away.” Data collected over four months show that households in the treatment conditions saved about 9% as compared to 2% in the control conditions (and 2% pre-intervention). A closer look at the data suggested

that a significant number of households had adjusted their consumption patterns in line with the “one a day” advice.

Interestingly, we were also able to study a group of households where the primary wage earners were new to the job. In particular, they did not have a well established pattern of consumption and they started off their farm jobs under the “four envelope” system. Consistent with the predictions of mental accounting (Thaler, 1999, Soman & Ahn, 2010), this group saved significantly more; about 16%.

### Earmarking and Decision Points

In the next set of studies, we set aside a certain amount of cash as target savings, and enclose that cash in a separate envelope. We studied construction labour households that met the following additional criteria; a) there was only one wage earner, b) each household had two children in the 5-10 age group, & c) the both the wage earner and their spouse agreed to participate in the study. Each household was interviewed by a banker, who studied their income and consumption streams extensively and made a recommendation as to what percent of their income the household should be able to save with a reasonable degree of prudence. The recommended savings rate for all households was about 6%, as compared to an actual savings rate of 2%.

This study used earmarking; the labeling of money for a specific use as a tactic to solve the last mile savings problem. Earmarking is conceptually similar to budgeting as described by Heath & Soll (1996) and others (Thaler, 1985; Shefrin & Thaler, 1988). For example, in interviews we conducted in North America to understand household money management practices, several respondents used the term “earmarking” for the practice of allocating money towards various purchase categories using a desktop computer application. However, earmarking often takes on a more specific form; one in which

the earmarked money is kept distinct from other monies either through physical segregation or other forms of categorization (e.g. a separate bank account). Prior research suggests that the act of earmarking makes the money more “sticky” towards the particular spending goal it was designated for.

Participating households in this study were given their cash salaries in two parts; a) their earmarked savings was separated out, and b) the rest of the wage. Our results showed that the act of earmarking significantly increased savings rate. We also found that this effect could be strengthened by putting a photograph of the children on the top of each earmarked envelope and sealing it. When the photographs were present (rather than a plain white envelope), the likelihood of opening the earmarked savings envelopes reduced dramatically. Like the rest of the research reviewed in this section, these results show that simple psychological interventions that get an individual to stop and think can greatly facilitate the conversion of savings intentions to actual savings.

### The Psychology of Adoption

A second, related problem has to do with the psychology of adoption of advice and new savings practices. In the domain of marketing new products, Gourville (2006) asks the question of why so many new products fail after millions of dollars have been invested in their development and testing. He proposes that the reason has to do with the fact that new products require a significant behavior change on the part of consumers, which they are reluctant to do. His research suggests that companies need to find ways of increasing commitment, and to incorporate into the product design features that minimize the behavioral changes that consumers need to make.

Getting people to sign up for savings problems is a very similar problem. Often times, a financial consultant will visit farmers in rural India and explain to them the advantages of budgeting & financial

planning for their future well being (e.g., retirement, bad harvest years, children's education, repairs and renovations). Farmers agree that it is important to do, and start to act on the advice of the consultant. However, they very quickly figure out that budgeting and planning needs a [relatively small but yet significantly annoying] set of changes in their daily routines. They need to keep track of expenses, manage paperwork, update files, and use data to make projections on an ongoing basis. Many quickly abandon their good intentions. What does psychology tell us that can be useful to address this problem?

We tested three specific ideas with a population of sugarcane farmers in rural India. These farmers face a large seasonality in income, with about 80% of their cash income coming in the 5 months surrounding the monsoon rains and the harvest. First, research in mental accounting and the evaluation of transactions suggest that individuals value products as a function of what they have paid for them (cf. Gourville & Soman, 1998). Likewise, research on self-perception (Bem, 1972) suggests that the degree to which one has invested in a particular project can signal their commitment to the project. Both lines of thinking suggest that paying for advice (rather than receiving it for free, as typically happens) is likely to make individuals more committed to that advice. Second, following Gourville's (2006) prescription and the idea that small transaction costs can trip up the best intentions, it appears that products that facilitate / allow the individual to perform the desired tasks with minimal transaction costs will increase the chance that they can execute on their plans. These products could be as simple as a piggy-bank, or as complex as an online planner. Soman, Xu & Cheema (2009) report that they use budgeting boards with colour coded zones to allow farmers to do the budgeting task better. Rather than thinking about their surplus income and what to do with it, they now simply follow the colour coding on the boards. Third, research on goal specificity shows that specific and concrete goals are more effective at triggering action than more diffuse, general goals. In one project, we (Soman & Zhao, 2010) show that giving people a single, vivid goal (e.g., save for your children's education) increases savings relative to a broader goal

that encompasses the single goal (e.g., save for future needs including health problems, children's education & retirement).

## Conclusion

Research reviewed in this chapter suggests that seemingly small interventions have a large role to play in translating savings intentions into actual behavior. In particular, we find five specific phenomena that are not consistent with a more standard economic model of savings. First, introducing a small transaction cost can reduce spending by providing an opportunity to pause & think. Second, simply earmarking money towards a savings fund decreases the likelihood of it being spent. Third, making the savings goal specific and using a single goal increases savings rates. Fourth, creating products that minimize the transaction costs associated with executing savings plans increase savings rate. And finally, charging a small price for financial advice increases the likelihood that the advice will be used.

While the research reported here represents one set of behavioural interventions, there are clearly many others that are germane to the problem of savings behavior. These include issues relating to choice complexity (Huberman, Iyengar & Jiang, 2007), precommitment (Ashraf et al., 2006), persuasion (Bertrand et al., 2005) and choice architecture (Thaler & Sunstein, 2008).

I conclude with the observation that most financial literacy programs have tended to focus on providing information about the need to save, and on financial instruments that are available. The work presented here suggests that programs need to go beyond simple literacy, and also introduce consumers to products, practices and programs that help them execute on their desire to save more.

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