



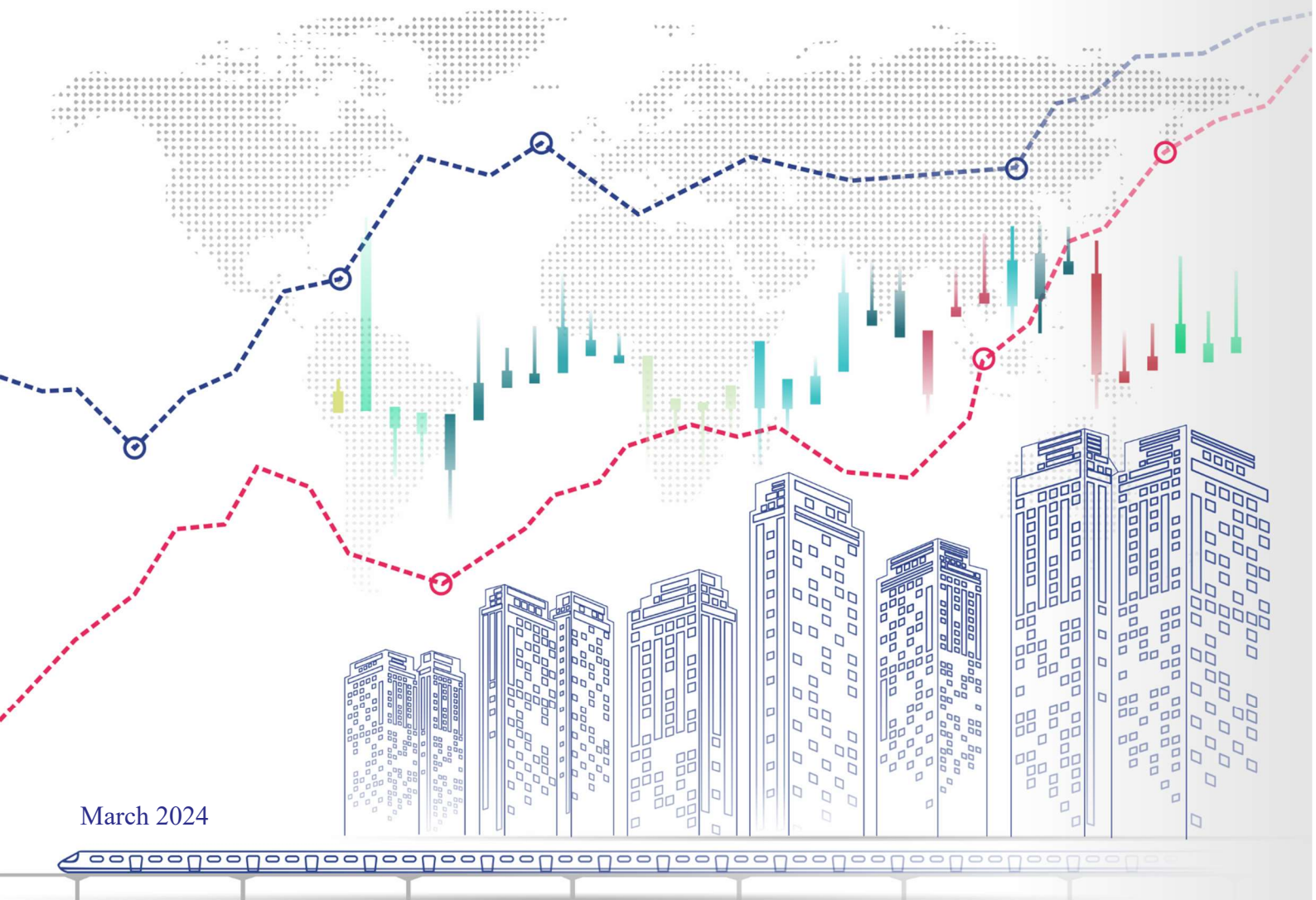
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Research and Policy Insights on Financial Markets and Economy

Behavioral Economics in Policy Making

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Behavioral Economics in Policy Making

» Overview «

In recent years, several countries have implemented the concepts of behavioral economics in their public policies to enhance effectiveness and promote higher rates of adoption. This note offers a comprehensive analysis of several policies implemented in India from a behavioral aspect, in addition to presenting a fundamental overview of the subject. After a brief summary, we analyze a few government initiatives that have been executed in India during the last decade. We specifically examine how efforts such as the Swachh Bharat Mission, Give It Up, and Aspirational District Program have effectively employed insights into human behavior to achieve their objectives. The note concludes with a concise analysis of behavioral biases in a financial setting.

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The Research and Policy Insights on Financial Markets and Economy series aims to provide operationally relevant perspectives from research in a concise and cohesive manner. These notes provide an overview of research on contemporary issues, highlight international or India-specific experiences, and explore policy implications and directions for the future.

1. Introduction

This note aims to consider a few recently implemented major public policies in India through the perspective of behavioral economics. India has recently incorporated a dedicated practice of formulating "nudge" policies which aim to mould human psychology to shift people towards better life choices (Biju et al., 2023), such as getting vaccinated on time (CSBC, Ashoka University, 2022). This note touches upon some of these policies and tries to identify how academic literature is put into practice by analyzing their outcomes, and discussing their implications.

Economic literature relies on the assumption of unbounded rationality (Teraji, 2018), which means that humans are always rational and make decisions that maximize their utility based on the knowledge available to them. However, this is not always true; for example, gamblers often risk more money after losing a game even though the odds remain the same irrespective of the outcome of past trials (Odean, 1998), which is commonly known as the gambler's fallacy (Shefrin and Belotti, 2007). In recent years, governments in many countries have started forming public policies that utilize quintessential human behavior to make smart choices (Reisch and Sunstein, 2016). These countries include Sweden (Oliver, 2013), Netherlands, France, Denmark (Van der Linden, 2012), USA, UK, Philippines, Peru, Bolivia, Madagascar, and several others. Such public policies have a significant impact on shaping desirable behavior among individuals (Leonard, 2008), whether it pertains to adhering to traffic regulations, preserving natural resources, or upholding human rights (Department of Economic Affairs, 2019).

The subsequent sections of this note are as follows: Section 2 provides an overview of the literature, introduces well-known concepts in behavioral economics, and discusses the numerous biases to which humans are susceptible; Section 3 aims to define 'nudge' interventions; Section 4 discusses select public policies introduced in India through the behavioral economics lens; Section 5 is a concise discussion on behavioral finance, and Section 6 concludes the brief.

2. Overview of Popular Concepts

Kahneman (2011) utilized a framework comprised of two systems; System 1 and System 2, in his book "Thinking Fast and Slow," to explicate how the human brain arrives at decisions and selections. The human brain must make numerous judgments within limited time frames, and certain decisions may have life-or-death consequences. Occasionally, humans need to make prompt decisions; leaving them with insufficient time for deliberate contemplation before taking action. Such actions fall under the functioning of System 1. These reflex actions are starkly different from a situation where humans deliberately ponder over a solution to the problem, such as solving a mathematical equation. Such deliberate thinking comes under the functioning of System 2.

2.1. Heuristics and Biases

Humans should employ accurate information processing to calculate the likelihood and utility of a decision (Teraji, 2018). However, if this were true; their daily productivity may be hindered

due to the laborious nature of these computations. Additionally, humans would be compelled to make decisions under time constraints. To overcome this problem, they used several mental shortcuts, called heuristics, which provide general rules of thumb for decision-making (Tversky and Kahneman, 1974).

Heuristics are cognitive shortcuts that assist in making prompt decisions (Lockton, 2012). However, these selections are not made solely based on a comprehensive cost-benefit analysis, there is a possibility that humans may make choices that are not the optimal solution from a mathematical standpoint. This gap between normative behavior and determined behavior is called a cognitive bias (Tversky and Kahneman, 1974).

Many cognitive biases are known so far. We discuss certain biases that are relevant here:

Anchoring Bias:

As described by Tversky and Kahneman (1974, as cited in Furnham and Boo, 2011), it is a disproportionate influence on decision-makers to make judgments that are biased toward an initial value; which relies on the first piece of information, regardless of its relevance to the present circumstances.

Availability (Recency) Bias:

This is cognitive bias, where individuals assess the likelihood of events depending on their ease of recall (Tversky and Kahneman, 1973). It leads us to assign greater significance to things that are readily available and easily recalled. For e.g., plane crashes have a lower statistical probability compared to automobile collisions. However, car accidents received less media attention than plane crashes, leading to the mistaken belief that plane crashes are more likely to occur than car accidents (Tversky and Kahneman, 1973).

Herd Mentality Bias/Groupthink:

It compels people to self-censor opposing opinions as they do not want to stand out to avoid social rejection. For example, professional managers will "follow the herd" if they are concerned about how others assess their ability to make judgments (Scharfstein and Stein, 1990).

3. Nudging in Public Policy

In recent years, using psychological insights to bring about desired changes has become a popular choice in framing public policies (Department of Economic Affairs, 2019). While state actions can range from not changing the status quo to imposing a mandate on the public, the policies we discuss focus on nudging people into making behavioral changes.

Nudge can take four forms based on the degree of intervention by the state (Department of Economic Affairs, 2019). *Laissez-faire* refers to a governmental approach characterized by non-interference in various matters. Nudging involves leveraging insights from human psychology to urge individuals to make improved choices while making minor adjustments to the monetary incentives associated with it. Under incentives, the government either promotes good behavior by incentivizing the decision-makers monetarily or discourages bad behavior

by disincentivizing bad choices. Finally, under a mandate, the government makes certain actions mandatory.

The definition of nudge can be interpreted in multiple ways when it comes to policy framing. However, a nudge policy should interfere with the available choices minimally (Mongin and Cozic, 2018). This implies that no option should be forbidden or no economic incentive should be altered drastically.

4. Nudging Initiatives by the Indian Government

This section provides an overview of a few initiatives implemented by the Government of India over the past decade:

4.1 Swachh Bharat Mission (SBM):

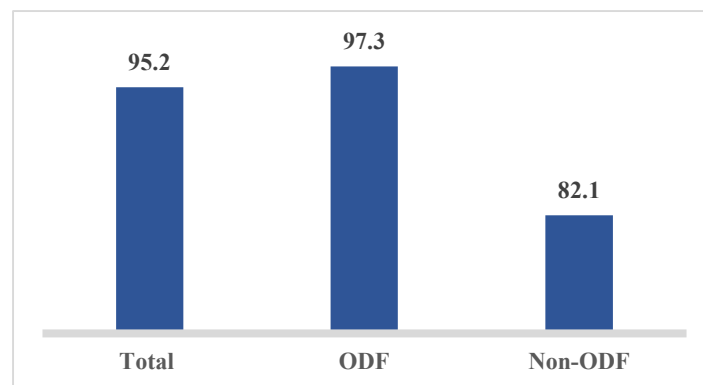
Swachh Bharat Mission, launched on October 2, 2014, aims to make India 'open defecation free' (Department of Economic Affairs, 2019). The mission has now moved to the second stage, where it aims to nudge people to make behavioral changes with respect to open defecation (Department of Economic Affairs, 2019).

The program's primary objective was to build toilets to eradicate open defecation. Within a span of five years since the initiation of the program, there was a notable surge of 100% in the availability and accessibility to public toilets (Department of Economic Affairs, 2019). However, simply providing access to toilets did not completely resolve the issue. Individuals accustomed to engaging in open defecation would not readily change their behavior, as it requires a substantial behavioral shift (Department of Economic Affairs, 2019). The effectiveness of this objective hinges on encouraging individuals to adopt the requisite behavioral modifications. An independent National Annual Rural Sanitation Survey (NARSS) conducted in 2018-19 provided a quantitative measure of success. The survey revealed that 93.1% of rural households possess toilets. It was also reported that 96.5% of people with access to toilets, use these toilets consistently. The strategies adopted for the success of the program are outlined below:

Local volunteers, called *swachhagrahi*, reinforced the message of the campaign in every area. This was more effective than a one-time awareness drive because it played on the availability (recency) bias. Additionally, people were more inclined to pay attention when the message was conveyed by their acquaintances rather than by someone unfamiliar. The program was executed at a community level, where everyone gathered together to analyze the implementation and make plans for future action. It made people adhere to the norms, as they did not want to stand out in front of the community members. Finally, people were more likely to remember the strong emotional responses they felt compared to the mundane information provided to them (Department of Economic Affairs, 2019). The program tried to change people's perception of open defecation by creating a feeling of disgust with the practice. This was achieved by demonstrating how open defecation can contaminate food due to carriers like houseflies. As per the NARSS Round-3 report (2020), 94.4% of rural households had access to toilets, of which 95.2% used them. Additionally, the percentage of households practicing open defecation

has reduced from 6.7% in 2018–19 to 5.6% in 2019–20 at the national level. This number was 24.0% in 2017–18.

Figure 1: Percentage of population with access to toilets actually using them (2019-2020)



Source: National Annual Rural Sanitation Survey (NARSS) Round-3 National Report, 2019-20.

Note: ODF refers to regions which are declared 'Open Defecation Free' by the government

4.2 Give It Up:

This campaign encourages individuals above the poverty line to relinquish their LPG gas subsidy. It aims to allocate limited resources more effectively towards improving the lives of individuals who are genuinely in need. According to the Ministry of Petroleum and Natural Gas, approximately 10.3 million customers had voluntarily relinquished their LPG subsidy as on March, 2020 (GOI, 2024).

As there was no incentive for people to relinquish their subsidy, it relied on their judgment to make the right choice (Department of Economic Affairs, 2019). The campaign was designed in a way that it was a one-time effort to opt out of subsidy. The process was easy enough, so people could finish the journey from intent to action without dropping out in between. Additionally, the campaign also tried to play upon the herd mentality of humans, where they try to mimic what others around them are doing. The website for this campaign displays the names of people who opted out to encourage others (GOI, 2024).

Another concept that can be utilized to improve the campaign is the status quo bias. People generally choose to maintain one's current status as it does not require them to take any action. This inertia can be utilized by changing the default option (GOI, 2024). At present, by default, a person gets to keep their LPG subsidy and needs to take action to revoke it. However, if the no subsidy option is the default for people above the poverty line, more people will accept it and are unlikely to opt in again (Department of Economic Affairs, 2019).

4.3 Aspirational District Program:

The government of India's flagship program namely the Aspirational Districts Program, anchored by NITI Aayog targets 112 most underdeveloped districts of the country. The program works with the state government to rapidly and effectively target the socio-economic issues regarding health and nutrition, education, infrastructure, financial inclusion, skill

development, agriculture, and water resources in these districts (CSBC, Ashoka University, 2022). We discuss some of the initiatives under the program.

Tracking Anaemia: Anaemia has a prevalence rate of approximately 52.2% among pregnant Indian women aged 15 to 49 years (NFHS-5, 2021). To address anaemia among pregnant women, it is recommended that an iron and folic acid tablet be consumed every day during the pregnancy (CSBC, Ashoka University, 2022). However, because of lapses in recall, this is not regularly followed. A goal-tracker calendar was implemented to surmount this challenge. The calendar shared with the family could effectively track the behavioral barrier of forgetfulness by consistently reminding them to take their medication. The reminder was persistent and enhanced the likelihood of compliance.

Champions of Change: In rural India, diarrhea is a more deadly killer than HIV/AIDS, malaria, and measles combined (CSBC, Ashoka University, 2022). Diarrhea can be prevented by opting for hygienic practices like washing hands with soap. The ‘Stop Diarrhea Initiative’ was implemented to address this issue by teaching moms, teachers, adults and encouraging youngsters to adopt hygienic practices. Schoolchildren aged 5 to 15 years were nudged about the importance of hygiene through group activities conducted in school as part of this initiative (CSBC, Ashoka University, 2022). Children's clubs were formed, and interactive resources such as games, animated films, comic books, and flipcharts, were utilized to ensure that the message was retained. Kids remembered to follow hygienic practices even outside the classroom. As these activities were conducted in groups, there was positive peer pressure or bandwagon effect to follow the hygiene practices.

5. Behavioral Finance and Markets

The basic assumptions of modern finance are: (a) markets are efficient, and (b) agents know the probability distribution of future market risk (Markowitz, 1952; Merton, 1969). However, the behavior of investors and markets does not always align with the theory. Behavioral finance explains when modern finance theories fail to explain certain investor behaviors and market anomalies (Glaser et al., 2004). It can do so by considering the cognitive biases that affect decision-making and by not making any assumptions regarding the rationality of human preferences along with their decision-making process (Linciano, 2010).

A few cognitive biases that affect investors are discussed below, which may help enhance the effectiveness of financial regulation and supervision. Moreover, engaging in such a discourse could enhance an investor's ability to assess and avoid succumbing to biases (Linciano, 2010). The table below exemplifies some cognitive biases in a financial setting:

Table 1. Examples of Cognitive Biases in a Financial Setting

Heuristics/ Biases	Examples
<i>Availability</i>	
Familiarity	Individuals tend to purchase stocks with higher media coverage, higher trading volumes or significant price fluctuations (Barber and Odean, 2008)
Ease of retrievability/ Construction	When considering the default probability of a company, analysts recall similar companies that had gone bankrupt as compared to those which did not go bankrupt (Hanson and Pearson, 2023)
<i>Representativeness</i>	
Ignoring sample size	In gambling, individuals think that an event was more likely to occur if it had not occurred in the recent past (Odean, 1998)
Ignoring regression to the mean	Expectations for stock performance tend to be optimistic (pessimistic) for stocks that had overperformed (underperformed) in the recent past (Chen et al., 2007)
<i>Anchoring</i>	
Conservatism	Financial analysts underreact to new information (Shefrin, 2000)
Overconfidence	Illusion of control (Fellner, 2009); under or overreaction to new information; presumption to beat the market
<i>Heuristics and errors committed after making a decision</i>	
Confirmation Bias	The new information was ignored if it did not align with the goodness of the decision made (Costa et al., 2017)
Hindsight	Business professionals assume that if a strategy worked previously, it would continue to work. (Biais and Weber, 2009)
Endowment Effect	Reluctance to sell portfolio securities (Chen et al., 2007)

Note. Adapted from “Cognitive Biases and Instability of Preferences in the Portfolio Choices of Retail Investors: Policy Implications of Behavioural Finance” by N. Linciano, 2010 (<https://doi.org/10.2139/SSRN.1898560>)

6. Conclusion

This note examines certain policy interventions in India from the perspective of behavioral economics. These policy initiatives studied aimed at solving structural issues and also focus on creating behavioral change so that there is a pull for the adoption of such policies by the people. Additionally, we examined several instances in which investment decisions may be influenced by cognitive biases (Barber and Odean, 2008). Increasingly, public policies around the globe are adopting nudge interventions to tackle some social problems (Department of Economic Affairs, 2019). Similarly, certain practices such as investor education, financial advisory, and disclosure on the characteristics of financial products can be employed more effectively to deter investors from making decisions influenced by their cognitive biases.

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