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DeMo by NaMo (Demonetization by Narendra Modi): Money burning in India

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Abstract

Despite the well-documented hardship caused by demonetization policy implemented on 8th November 2016 in India, the large scale public support and acceptance of it was puzzling. Was this acceptance a silent protest to punish those with ill-gotten wealth and an aversion towards the growing inequality in the country?

Motivated by this ambiguity, this thesis attempts to understand the demonetization acceptance as being in line with the research in experimental economics and experimental psychology that argues that notions such as inequity aversion and fairness drives human behaviour into taking decisions which are not economically rational. More specifically, the study will examine the role of social preferences and fairness in an economic agents' behaviour.

The research paper designs a "money-burning" experiment in a field setting in India and attempts to mimic the acquisition of money through unfair means (black money) and thereafter offers participants a chance to punish each other (reduce each other's money at a cost to themselves). The study finds a balanced support for both, self-interest behaviour and fairness preference. Empirically, the study did not find any link between the burning behaviour and demonetization acceptance.

Keywords

Social preferences, money burning, fairness, procedural fairness, experimental economics, demonetization, India.

Acronyms

INR	Indian Rupees
PMO	Prime Ministers' Office
RBI	Reserve Bank of India
IMF	International Monetary Fund
ATM	Automated Teller Machine
ERC	A theory of Equity, Reciprocity and Competition
Rs	Rupee
UP	Uttar Pradesh

DeMo by NaMo (Demonetization by Narendra Modi)
Money burning in India

1 Introduction

In an address to the nation, on the evening of November 8th, 2016, the Prime Minister of India, Narendra Modi decreed that from midnight, 86 percent of India's currency amounting to Indian Rupees (INR) 14.18 lakh crore (trillion) would be demonetized, that is, it would no longer be legal tender. The demonetized currencies were the Rupee 500 and 1000 note bills. At the same time, new Rupee 2000 and Rupee 500 bills were to be issued.

Ostensibly, as stated by the Prime Minister (PMO 2016), the policy was primarily directed towards "breaking the grip of corruption and black money".[1]Indeed, in his speech of November 8th, 2016, the Prime Minister used the phrase "black money" 18 times while only peripherally mentioning other goals of demonetization, for example to reduce terrorism and tackle the problem of fake currency.[2] In addition, several government spokespersons, including the Governor of the Reserve Bank of India (RBI), Urjit Patel, argued that demonetization would aid the country's fight against terrorism and help India "leapfrog into a less cash-use economy at par with more developed nations" (*Business Insider* 2016). While arguing that the main aim of the policy was to tackle corruption and black money, the Prime Minister and other spokespersons acknowledged the short-term hardships but at the same time pointed out that the policy would inflict greater pain on black money hoarders (PMO 2016).The speeches pointed at the country's enormous wealth disparities and attributed them to corruption and unfairly acquired black wealth. The policy was portrayed as a heroic action and a "war on corruption" and in later speeches, citizens experiencing hardships were compared to soldiers at the frontlines of combat (Ghosh, Chandrasekhar and Patnaik 2017: 5).

Despite the various motives provided by the government for introducing the policy, the logic of demonetization has been critically analysed and questioned by many economists and scholars. For instance, Amartya Sen calls it "Authoritarianism at Its Best" (Usmani 2016). Kaushik Basu, Senior Vice-President and Chief Economist at the World Bank criticized the policy for its poor design (Iyengar 2016). In another critical evaluation of demonetisation,

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[1] Black Money is money "which is not fully legitimate in the hands of owner -for two possible reason". One reason is that the black money may have been generated from illegitimate activities like 'crime, drugtrade, terrorism and corruption'. The second reason is that it may have been generated by 'failing to pay the dues to the exchequer in one form or the other'-(Ministry of Finance 2012:1).

[2] In later speeches, there was a shift towards invoking the aim of boosting the digital economy as an additional reason for demonetization.

Ghosh, Chandrashekhar, and Patnaik (2017) view the policy in a political context and have argued that the policy was politically driven and was a bold move to win popular support before elections in India's most populous state, Uttar Pradesh. On the other side, while a minority, there are economists and scholars who have praised the policy and argued in favour of it. Economist, Kenneth Rogoff called it a "bold and audacious move for a country with endemic corruption". Former Indian representative to the IMF and economist, Arvind Virmani, viewed the policy as a "useful method of flushing out black money" (Iyengar 2016).

Regardless of the aims of the policy, its announcement and implementation took the country by shock and led to large-scale disruptions in economic activity. At the time that demonetization was announced, more than 95 per cent of all economic transactions were estimated to be in cash, and the immediate effect of the currency withdrawal was felt in the form of a commerce freeze. Farmers faced difficulties in making payments for seeds and fertilizers and the effects of the policy were most visible in the informal sector (Ghosh, Chandrasekhar and Patnaik 2017: 5).[3] Furthermore, the lack of proper planning, for example, new notes had not yet been printed in sufficient numbers and ATM machines had not been recalibrated according to the new size of the currency, led to extended cash shortages in banks and ATMs which further resulted in government mandated restrictions on cash withdrawals. The bewilderment about being unable to access one's own savings and limits on the amount of money that may be withdrawn led to long queues outside banks and ATMs.

Surprisingly, despite the slow-down in economic activity and the inconvenience, the public's reaction to demonetisation was broadly positive. Opinion surveys conducted soon after the announcement of the policy showed that despite expressing dissatisfaction at the way in which it was implemented, on average, 70 to 80 per cent of the public favoured demonetisation.[4]

In part, this paper is motivated by the puzzle that despite the hardship and inconvenience caused by the policy, it enjoyed, and perhaps still enjoys widespread acceptance. Why? Did the country's citizens buy into the arguments advanced by the Prime Minister and other spokespersons? In other words is it part of the new brand of "nationalism" that expects people to make "sacrifices" for the greater good of the nation (Ghosh, Chandrasekhar and

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[3] Informal sector forms about 69% and 75% of urban and rural employment respectively and wages are paid in cash.

[4] An infographic put out on the Prime Minister's website claimed that 93 percent of half a million people who took the survey on the Narendra Modi app supported demonetization (*The Times of India* 2016). Another international polling agency, C-voter, conducted a survey across 252 parliamentary constituencies and nearly 86 per cent of the respondents living in urban and rural areas said the "inconvenience caused by demonetisation was worth the effort of combating black money". Nearly 87 percent of respondents felt the move was hurting those with black money (*The Times of India* 2016).

Patnaik 2017).Was the rhetoric of the Prime Minister which portrayed acceptance and support for demonetisation as one's patriotic duty, and subjecting the move to any rational examination as anti-national and support for the corrupt and the criminal, successful? Was the government's, so called, grand persuasion strategy, that is, arguing that demonetization would have a much larger negative effect on those who had acquired unfair wealth while having a much smaller effect on the common man successful? Were the Prime Minister and his team successfully able to exploit human emotions and tap into, by design or unwittingly, the idea of *schadenfreude*– that is, the experience of self-satisfaction that comes from learning of the troubles of others?

The idea that the acceptance of demonetisation maybe attributed to notions of fairness and a desire to punish those who have acquired wealth through unfair means is echoed in recent research in experimental economics and experimental psychology. This body of work argues and demonstrates that rather than self-interest, people are motivated by notions of fairness and willing to sacrifice their own wealth and accept losses in order to ensure fair outcomes. For instance, in a laboratory setting where participants are invited to share resources or contribute to a common pool of funds, Güth et al. (1982) and Fehr and Gächter (2000), among other papers, show that participants reject offers or punish the perpetrator even at a cost to themselves when they perceive that an act has been unfair to them.[5] Furthermore, Fehr and Gächter (2000) show that participants are willing to spend resources to punish deviations from equal division, even when they themselves do not suffer from these deviations. In related work, Bolton and Ockenfels (2000), and Fehr and Schmidt (1999) hypothesise that people are willing to pay money in order to avoid unequal payoff distributions (inequity aversion behaviour) and provide extensive experimental data to support their theory. Experimental evidence suggests that such behaviours are driven by strong feelings of envy or concerns for fairness and reciprocity.

Motivated by the support for demonetisation and the recent work in experimental economics and psychology, this thesis designs a "money-burning" experiment to understand and explore human emotions and behaviour when faced with both unfair processes and unequal monetary outcomes. The experiment which takes place in a field setting in New Delhi and nine villages in the state of Uttar Pradesh, as opposed to a laboratory setting, attempts to mimic the acquisition of money through unfair means (black money) and thereafter offers participants a chance to punish each other (reduce each other's money at a cost to themselves).While details are described later in the text, the experiment is carried out with individuals belonging to five different socio-economic groups. In total the experiment consisted of fifty sessions with four participants in each session. In addition to the experiment, a

[5] The ultimatum game is played by a proposer and a responder. The proposer is endowed with a sum of money, and proposes a division of the sum between herself and the responder. The responder either accepts the division or rejects, in which case both receive nothing.

brief survey was also carried out with the same participants, in order to gather demographic information and the subjects' opinions on demonetisation.

Specifically, this thesis has three main objectives. The first objective is to test whether individuals are sufficiently averse to unequal financial outcomes that they are willing to pay (burn) some of their own money to reduce the amount of money held by others. The second objective is to see whether the willingness to reduce other's money, if any, is intensified, when the unequal financial outcome is due to the result of an unfair procedure as opposed to an unequal outcome albeit as a result of a fair process. The third objective is to see whether there is any link between the desire to sacrifice one's own money to inflict greater pain on others and acceptance of demonetisation in India.

The research paper is organised as follows. Chapter 2 reviews the literature on social preferences and explains inequality aversion theory. Chapter 3 introduces the research methodology of the study and the research hypotheses. Chapter 4 presents the experimental data and provides a descriptive analysis of the results. Chapter 5 reports and discuss the results and Chapter 6 concludes.

2 Literature review

Traditional economic models and in particular neo-classical choice theory is based on the assumption that economic agents (individuals, firms) act rationally and are motivated by self-interest. In other words, when faced with alterative courses of action, *homo economicus* will choose the alternative that will maximize his or her own income/wealth and expect others to do the same (Mathis and Steffen, 2015: 31). However, in recent years, a considerable body of experimental evidence has questioned the pure self-interest behaviour of individuals and pointed out that individuals do not always make decisions which are consistent with maximizing their resources. Instead, people also care about the payoffs (outcomes) of other members in a group (or other individuals) when evaluating their well-being and also care about how outcomes are achieved (Fehr and Schmidt, 1999; Charness and Rabin, 2000; Fehr, Fischbacher and Gächter, 2002).[6] Rather than being driven only by self-interest, these studies suggest that people exhibit social preferences, that is, they are strongly motivated by concerns for fairness, equity, trust, reciprocity,

[6] The scrutiny of the standard economic assumptions of self-interest and rational decision-making has led to a new strand of research falling under the rubric, Behavioural and Experimental Economics. Through its multi-disciplinary approach, behavioural economics aims to provide a better and more accurate understanding of what motivates people's behaviour and actions. Behavioural models typically integrate insights from psychology, neuroscience and microeconomics theory. Although the difference between Behavioural and Experimental Economics is not clear but some authors argue that Behavioural Economics focuses on individual behaviour and Experimental Economics is more concerned with the results of interpersonal interaction (Kapeliushnikov, 2015: 83).

altruism and their decisions are also driven by emotions such as envy, spite, and guilt.[7]

The aim of this chapter is to review the existing literature on theoretical models and experimental evidence that challenges the self-interest hypothesis and examines social preferences. Since, the objective of this thesis is to examine and test individual's preferences for fairness (including procedural fairness) and aversion to unequal outcomes, the review is restricted only to related models and evidence.

2.1 Social preferences

The strong commitment to self-interest as a decision-making principle has come under serious scrutiny since experimental economists began studying human behaviour in laboratory settings. Typically, researchers' set-up experiments/games with college students as participants and analyse their behaviour in a laboratory setting. While details are discussed below, examples of such experiments/games include ultimatum games (Güth, Schmittberger, and Schwarze, 1982; Slonim and Roth, 1998), dictator games (Forsythe, Horowitz, Savin, and Sefton, 1994; Andreoni and Miller, 2002), investment games (Cox, 2004), public goods games (Fehr and Gächter, 2000), joy of destruction game and money burning games (Zizzo, 2003; Zizzo and Oswald, 2001; Abbink and Sadrieh, 2009; Abbink, and Herrmann, 2011).

Drawing on the empirical findings of these laboratory experiments, new theoretical models have been developed, not so much as to challenge standard economic theory rather but to expand it and to provide a psychological expansion (Graziano, 2015: 202). This chapter mimics the development of the field and first presents the literature on the empirical findings and then the theoretical models that have been developed to explain the findings.

Experimental evidence of social preferences

An important experimental game that challenged the self-interest hypothesis was the so-called ultimatum game designed by Güth, Schmittberger and Schwarze (1982). The experiment was conducted with economics graduate students. It is a simple two player game, played by a proposer and a responder. The proposer receives a sum of money and offers a division of the money between himself and the responder (recipient). The responder can either accept or reject the offer. If he accepts, the sum is divided as agreed and in case he rejects, both players receive nothing. As per the canonical rational-choice approach, a self-interested proposer should offer the minimum positive amount and a self-interested responder should accept any non-zero amount (since zero is better than nothing). However, in the study by Güth et al. (1982),

[7]Reciprocity means that people are willing to reward friendly actions and punish hostile actions, even though these rewards or punishments causes a net reduction in material payoff of those who reward or punished (Guth et al., 1982) and Altruism means the self-less concern for the welfare of others.

proposers offered non-zero amounts and the responders rejected positive offers. Variants of this basic ultimatum game have been tested in a variety of contexts with different age groups, different cultural settings, variations in the amount of money and the length of the game (Camerer and Thaler, 1995; Oosterbeek et al., 2004). A meta-analysis of ultimatum games (Oosterbeek et al., 2004) which included findings from 37 papers with 75 results showed that, on average, proposers offered about 40 percent and, on average, offers below 16 percent of the available amount were rejected. One drawback of this meta-analysis was that the researchers had to exclude a large number of studies in which subjects play some variations of the ultimatum game.[8] However, Tisserand (2014) took into account this consideration and conducted another meta-analysis with the complete data. The study reviewed 97 observations of the game in 42 articles. Their study also found similar results. The average offer by proposers was 41 per cent and responders rejected offers which were below 20 per cent of the available surplus. The evidence from these reviews of the ultimatum games supports the idea that it is not always maximization of financial outcomes or relative payoffs which drives human behaviour, but notions such as fairness and equity also matter.

Similarly, to study fairness in individual interactions Kahneman, Knetsch and Thaler (1986) introduced an experiment called the dictator game. The dictator game is based on the same principle as that of the 'ultimatum game' but with one difference. The dictator (who divides the money) gets to freely decide how much of an initial sum of money, he/she would like to the other player. But now, the responder/recipient has to accept the offer and cannot harm the dictator by refusing the offer. In other words, in the dictator game the dictator's (proposer) outcome depends only on his own actions. While in an ultimatum game, the responder can reject the offer in which case the proposer gets nothing. Standard economic theory would predict that the dictator will always make the most self-interested choice and allocate the entire money to him/her and will give zero money to the responder. The experiment was first conducted with students (N=161) in an undergraduate psychology class at Cornell University. It turned out that of 161 subjects, 122 subjects (76 per cent) divided the money equally suggesting a preference for fairness and equitable distribution. A meta-analysis of dictator games carried out by Engel (2011) which included 129 papers and 616 experimental treatments found that, on average, dictators gave away 28 percent of their endowment.[9]The null hypothesis that the giving rate is 0 was handily rejected ($z = 35.44$ ($p < .0001$)).

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[8] For instance papers which reported one-sided uncertainty. The responder gets to know the probability distribution of offers rather than the exact offer or, as in the strategy design, no offer at all. Examples are Mitzkewitz and Nagel (1993) and Rapoport and Sundali (1996).

[9] The author also undertook a random effect meta-analysis with 445 treatments for which standard errors were reported or could be reconstructed. The result matched the un-weighted grand mean, with give rate of 28.3 per cent. However, in the result from the fixed effect meta-analysis, the estimated give rate dropped to 20.4 percent (Engel 2011).

Only 36 percent of dictators behaved in the manner suggested by conventional economic theory and exhibited pure self-interest by giving zero money to the recipient. 17 percent chose an equal split, indicating that self-interest is not pervasive and individuals do care about other's payoff as well. As many as 5 per cent gave the recipient everything (reflecting altruism) and the remainder, 42 percent, parted with a portion of their endowment (Engel 2011).

Similar behaviour, that is behaviour which is not entirely consistent with maximizing self-interest, is also observed in other strategic games. For instance, in "public good" games, when punishment is introduced, people punish free-riders more and are reluctant to punish those who co-operate (Ertan, Page, and Putterman's 2009)[10]. In addition to the desire for equitable outcomes, a related body of work suggests that "procedural justice" that is fairness in the manner in which an outcome has been reached also influences people's actions (Lind and Tyler, 1988; Brockner and Wisenfeld, 1996). Lind and Tyler (1988) explore the implications of judgement about procedural fairness in different settings (not only with the students in the lab setting). For instance, one of their researches involved interviews with Chicago residents who had an earlier encounter with the police and the court. The groups were divided into people who had received favourable or unfavourable outcomes and then further disaggregated as to whether they felt that the outcome had resulted from a fair or unfair process. The study reported that the subjects who perceived the procedure as positive remained positive about the decision even with unfavourable outcomes. Echoing this view, Bolton et al. (2005: 1071), concludes that "the opportunity for a fair procedure has much the same effect on the acceptability of a given allocation as does the opportunity to have a fair outcome. Results produced by an unbiased procedure tend to be more acceptable than those produced by unfair procedures". Similarly, various experiments also supported the view that procedural fairness matters along with relative payoffs or outcomes (Hoffman and Spitzer, 1985; Ruffle, 1998).

In contrast to the studies on so called pro-social preferences, as is discussed in the next sub-section, a growing body of literature also focuses on the negative aspects of social preferences.

Experimental evidence of anti-social preferences

As opposed to the literature which focuses on social preferences, a body of work purports to examine negative preferences like envy or the "dark side of human nature" (Zizzo and Oswald, 2001; Abbink, Masclet and van Veelen, 2011). Experiments like money burning games and joy-of-destruction games have been introduced with the motive of capturing this "anti-social" behaviour.

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[10] In public goods game, a group of players receive some initial money, which they can invest covertly into a common pool, entirely or in parts. The examiner will double the invested amount and subsequently distribute it among all the participants equally. A rational economic agent should not contribute anything to the common pool.

For instance, Zizzo and Oswald (2001) introduced money burning game with the underlying idea of being "able to parameterize the nature of envy".[11] They conducted an experiment with 116 students (and other college staff) over 29 sessions. Participants were initially endowed with an equal sum of money. They were then allowed to increase their money through 10 rounds of betting on a number (1, 2, or 3) that was randomly chosen by a computer. The aim of the betting stage was to create an unequal distribution of income in the group. Two of the four players in each group were favoured and could bet more than the others in each round of the betting stage, and in addition, received a cash bonus between betting and burning stages. In the final round, players were asked to burn each other's earnings, at a price to themselves of 0.01, 0.02, 0.05 and 0.25 per money unit burnt. 62.5 per cent of the participants chose to burn money of others (even at a cost to themselves). Based on this finding the authors concluded that "agents display negative preferences" such as envy. In a later paper, Zizzo (2003), repeated the experiment, but in this case only one random decision was chosen from all the burning decisions made by participants (after all subjects had made their burning decision). Almost 50 percent of the subjects engaged in burning money. This finding was again interpreted as a display of envious preferences.

While evidence of money burning is interpreted as anti-social preferences the difference between this strand of the literature and the literature which argues in favour of social preferences is not very clear. The main motive of all these studies is the same, that is, to question the pure self-interest behaviour of individuals and point out that the individuals do not always make decisions which are consistent with maximizing their resources. Some of the observed behaviour in experiments which attempt to examine social and anti-social preferences may have similar explanations. For instance, in an ultimatum game, an individual may reject an offer out of pure envy an anti-social trait as opposed to a social preference for "fairness". Similarly, in a dictator game, a dictator may offer the entire or non-zero amount which may be motivated by altruism or fairness or may offer zero money which may be motivated by envy or evil. Similarly, in money burning games, an individual may burn money to decrease inequality and unfairness as opposed to the anti-social preference – "envy".

In the "money burning" game conducted by Zizzo and Oswald (2001), the experimenter deliberately created procedural unfairness in the game. Two of the four players received favourable treatment in the game. In the betting stage, these players could bet more than the others in each round and in the next stage the same two players also received a cash bonus. It is likely that the subjects who did not receive any advantage want to create a fair and equal distribution of endowment and therefore they engage in burning. It was not clear how the experiment aimed to measure the extent of negative interdependence, or parameterize the degree of "envy", which was the objective of the paper. At the end of the experiment, the authors included a

[11] Since our study is inspired by this paper, we are describing their experiment and finding in details.

complementary questionnaire with the intention of "understanding the motivation behind the participants' decision". However, the results of this questionnaire were not included in the paper which makes it difficult to interpret burning as a consequence of envy or a concern for fairness or both.[12] Indeed, their paper concludes by arguing that two factors shape negative preferences, procedural fairness and "reciprocity", and both these factors are discussed extensively in the "social preferences" literature.

Regardless of whether one argues that these papers provide evidence of social or anti-social preferences, the literature clearly shows that there is substantial variation in human behaviour. There is some support for self-interested behaviour and at the same time support for altruistic behaviour or a desire for fairness and also behaviour motivated by envy.[13] Henrich et al. (2004) summarize many experiments in cross-cultural settings and conclude, "Over the past decade, research in experimental economics has emphatically falsified the textbook representation of homo economicus, with hundreds of experiments that have suggested that people care not only about their own material payoffs but also about such things as fairness, equity, and reciprocity."

One reason for the increasing interest in such experiments is that in principal, it provides "ceteris paribus observations of motivated individual economic agents, which are otherwise exceptionally difficult to obtain using conventional econometric techniques" (Levitt and List, 2007:153). By the late nineties, inspired by these experimental results and evidences, new preference models started to evolve such as Fehr and Schmidt's (1999) inequity aversion model, or Bolton and Ockenfels's (2000) theory of Equity, Reciprocity and Competition (ERC), Adreoni and Miller's (2002) approach to altruism and Charness and Rabin's (2000) Rawlsian social welfare preferences. The next section will discuss two such theoretical models which attempt to explain the empirical findings in some detail.

2.2 Theoretical models of social preferences

A number of theoretical models have been suggested to reconcile the results emerging from the experimental evidence. Broadly, these models fall into two categories (Fehr and Schmidt, 2001:11). One set of models is concerned with distributional payoffs (Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000) and another set of models which deals with "intention based reciprocity" (Charness and Rabin, 2000) which assumes that players care about the intention of their opponents. Since, the objective of this thesis is to look at the nature of distributional payoffs the focus is on the first set of models, in particular, the work of Fehr and Schimdt (1999) and Bolton and Ockenfels (2000).

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[12] The reason for excluding these results is not stated in their paper.

[13] In public goods game, a group of players receive some initial money, which they can invest covertly into a common pool, entirely or in parts. The examiner will double the invested amount and subsequently distribute it among all the participants equally. A rational economic agent should not contribute anything to the common pool.

The inequity-aversion model by Fehr and Schmidt (1999) is considered a major theoretical contribution to fairness studies. Their paper defines inequity-aversion as a phenomenon where "people resist inequitable outcomes" and want to achieve an equitable distribution of material resources, even at a cost to themselves. The Fehr and Schmidt utility function has the following form:

$$U_i(x) = x_i - a_i \max(x_j - x_i, 0) - \beta_i \max(x_i - x_j, 0), \quad i \neq j,$$

where individual *i's* utility is increasing in his/her endowment of *x* and a decreasing function of the difference between his/her endowment and the endowment of individual *j*. The utility function of their model divides the inequity parameter into disadvantageous inequity (a component that harms oneself) and advantageous inequity (a component that harms others). The second term on the right-hand-side of their utility function (a_i) measures the utility loss from disadvantageous inequity (envy) and the third term (β_i) indicate utility loss from advantageous inequity (guilt/discomfort). Their utility function assumes that disadvantageous inequity is stronger than the advantageous inequity ($\beta_i < \alpha_i$) and influences people to willingly sacrifice their own resources to ensure relatively better off or fair outcomes. The theoretical results of this model are consistent with experimental results from a variety of games (ultimatum games, public goods game).

However, the inequity aversion model has been criticized for not taking into account intentions in the utility function. That is, the model does not provide any understanding of why and when people exhibit social preferences. Also, since this model is "outcome based", it ignores the fundamental role of procedures, both in the theoretical model and the related experiments (Bergh 2008).

Bolton and Ockenfels (2000), who refined the earlier work of Bolton (1991), also follow a similar approach in their inequity-averse utility function but there are some differences in their model. Unlike the model by Fehr and Schmidt where the participants compare the absolute differences, in Bolton and Ockenfels's model, subjects compare their material payoff to the material *average* payoff of the group. For many experiments, both these models reach the same or similar conclusions. For instance, Fehr and Schmidt's model explain the results in ultimatum, dictator, trust and gift-exchange games (Korth 2009: 22).[14] Similarly, ERC model of Bolton and Ockenfel, also explains the results of rejections in ultimatum games and giving in dictator and gift-exchange games. Some authors have argued that the measure of inequality is more appropriate in Fehr and Schmidt's model, since ERC theory is based on the average payoff and thus it cannot explain the behaviour dependent on inequities among other players (Korth 2009: 22).

[14] However, since this model do not take into account intentions, the model fails to explain why people behave differently when playing against a random device instead of a real player, or why low offers in a best-shot game are more readily accepted than in an ultimatum game (Korth 2009 : 22)

One critical underlying assumption that constitutes the essence of such models and laboratory experiments is that the insights gained from them can be extrapolated to the outside world, a principle denoted as "generalizability" by Levitt and List (2007: 153). However, some authors argue that the laboratory settings lack generalizability as they are based on homogeneous subject pools or lack of real-world credibility due to "artificial conditions" of the laboratory (List 2007). In the next section, we discuss some shortcoming of the laboratory experiments and whether it translates the lab behaviour into insights about the field/outside lab behaviours.

2.3 From lab to real world behaviour

A fundamental question in experimental economics is whether laboratory based experimental evidence may be generalized to the outside world. Levitt and List (2007:154), in their seminal paper, argue that behaviour in laboratory experiments is not just influenced by monetary considerations but many other factors, they write, "the presence of moral and ethical considerations, the nature and extent of scrutiny of one's action by others, the context in which decision is embedded, self-selection of the individuals making decisions and lastly the stakes of the games", influence the decision to share and the amount to share. Their study suggests a utility function of the form:

$$U_i(a, v, n, s) = M_i(a, v, n, s) + W_i(a, v),$$

where a utility-maximizing individual i is faced with a choice regarding a single action a. A dictator's utility depends on two components, M_i, which is the dictator's moral payoff and W_i the dictator's wealth. In the absence of a moral component, the model is standard wealth maximization. However, when a moral payoff is associated with W_i, an individual may deviate from wealth maximization and take an action that lowers the moral cost. A dictator's moral payoff (M_i), decreases as the monetary stake v grows (although, not always); increase with n social norms or rules and will depend on the extent of scrutiny s. Greater the degree of scrutiny, larger the deviation from wealth maximization action towards an action with lower moral cost (Levitt and List, 2007: 157).

Contrary to behaviour in laboratory experiments, real-world behaviour may differ on dimensions like monetary stakes, social norms or scrutiny. For instance, stakes in lab experiments are usually very small as compared to large-scale stakes such as in financial markets. Similarly, real world behaviour may be completely different from the one in the lab where an individual is aware that their behaviour is being monitored and scrutinized (Levitt and List, 2007).

Furthermore, individual behaviour in a laboratory setting appears to be sensitive to small changes in the experimental design and as Levitt and List (2007) put it "the context of the experiment matters in their behaviour". For instance, Haley and Fessler's (2005) study shows that a simple manipulation like showing a pair of eyes on the computer screen of the dictator significantly

increases giving in a dictator game from 55 percent in the control group to 88 percent in the eye-spot treatment. In addition to these factors, the distribution and allocation of the initial endowment also makes a big difference to behaviour. For instance, Cherry et al. (2002) find that dictators, who earned the money/assets with effort, transfer nothing in the dictator games. However, when the endowment was randomly determined and allocated by the experimenter, the concern for fairness motivated the other regarding behaviour and resulted in some transfers. Bardsley (2008) in his study shows that a simple manipulation of the action set by giving many options to the dictator or proposers also has an effect on individual's behaviour. When the participants were given the opportunity to give money, give nothing, or take money from the respondent, the individuals consistently gave less (close to zero). This could be either due to a "framing" effect or given the many options, the subjects use different reasoning patterns – "Subjects might perceive dictator games as being about giving, since they can either do nothing or give, and so ask themselves how much to give. Whilst the taking game... might appear to be about taking for analogous reasons, so subjects ask themselves how much to take" (Bardsley, 2008: 128).[15] The study suggested that economic analysis should not exclude "context-specific social norms" (Bardsley, 2008: 1).

There are a few important points to be drawn from this section of the review. First, the context of the experiment matters and perhaps more pertinently, contrary to behaviour in laboratory experiments, real-life behaviour may differ. Therefore, it is very important to recognize and understand these details in the experiment and how changes in the set-up of an experiment may induce the behaviour of participants. A proper understanding of the properties of context and details in the experiment can minimize such biases. Furthermore, understanding the sign and magnitudes of these biases can result in more accurate interpretation of the findings from lab experiments and therefore, more accurate generalization to outside the lab behaviour.

This thesis sets out to understand how humans behave, when they are faced with unfair procedures in reaching a final outcome. The thesis is based on a "money burning" game which is similar to Zizzo and Oswald (2001). However, there are some notable differences.

First, it is different in terms of "choice of subjects" engaging in the game. In most of the existing experimental work the participants are college students. Sear (1986:527), in his study, mentioned that there are chances that the results from these experiments are biased as college students have "incompletely formulated senses of self, rather un-crystallised socio-political attitudes, unusually strong cognitive skills, strong needs for peer approval, tendencies to be compliant to authority, quite unstoppable group relationships, little material self-interest in public affairs, and unusual egocentricity". To overcome these

[15] Framing effect, one of the cognitive bias, describes that presenting the same option in different formats can alter people's decision making and choice behavior. (Plous, 1993) In his paper, Bardsely (2008) also explained this as "Hawthorne" effect, which might be interpreted as "subjects reacting to the experimental demand characteristics", meaning the cues the protocol supplies about appropriate behaviour.

shortcomings, the subjects in this money burning game are not students but individuals (males and females), from five different socio-economic groups in the age group 18 to 60. The use of these different groups provides an opportunity to examine whether the results from money burning games are restricted to a particular demographic group or maybe more widely generalized.

Second, most of the "money burning" games have been conducted in a lab setting.[16] As far as I am aware, there is only one paper (Kebede and Zizzo 2015), which uses a variation of a money burning game in a field setting of rural villages in Ethiopia. The total sample in their experiment was 360 players, out of which 120 were students and 240 players were farmers. In contrast, this paper runs the experiment in a field setting in urban and rural locations in India and as mentioned earlier, works with a diverse subject pool in terms of age, education and employment.

In addition to the experiment, the thesis also includes results from a post-experiment questionnaire which permits a greater understanding of the motivation behind the burning decision (if any).

Finally, the paper was inspired by real world events, that is, demonetization in India, and attempts to link the findings from the experiment and insights derived on human behaviour to political decision-making. The next chapter explains the research methodology in a detailed manner and sets out the research hypotheses.

3 Research methodology and hypotheses

This chapter explains the three methodological strategies used in this study and sets out the hypotheses that the study aims to test. First and the main strategy is to design a "money burning" experiment to understand and explore human emotions and behaviour when faced with both unfair process and unequal monetary outcomes. The second strategy comprises of a brief questionnaire to obtain complementary information on the experiment and document some data on the demonetisation policy. The third strategy uses econometric analysis to evaluate the robustness of the experimental results and to links the results of the experiment to real life policy acceptance. The three strategies along with the hypotheses are described in detail in the next section.

3.1 Money burning experiment

Experiment overview

The money-burning experiment was executed in a field setting (a pen and paper format) in New Delhi and nine villages in the state of Uttar Pradesh. The average time per session was 40-45 minutes. The instructions of the experiment were given in the local language Hindi, and the English translation of the experiment is attached in Annexure (A). A participation fee of Rs. 100

[16] Abbink and Sadrieh (2009); Zizzo and Oswald (2001); Zizzo(2003)

was given to all the participants at the end of experiment.[17] The experiment was conducted using fake plastic currency (Picture 1 Fake plastic currency used in the experiment but with clear instructions to the participants that the amount will be converted into real money (Indian Rupees) at the end of the session.

The data sample was divided into rural and urban samples. A total of 50 sessions were conducted. 200 subjects participated in the experiment, with four subjects per session. Out of the total 50 sessions - 24 sessions (96 subjects) were performed in the metropolitan city of New Delhi and the remaining 26 sessions (104 subjects) were conducted in nine rural villages in the state of Uttar Pradesh in India.

Due to anonymity concerns, the first five sessions were dropped from the full data sample. To elaborate, in the first five sessions, subjects made their burning decisions in the presence of other participants in the room. However, in order to ensure anonymity of their decision, in later sessions, a slight change was made. Each individual was taken to a slightly distant area or a different room, one at a time, where they were asked to write down their burning decisions. Due to this difference in approach and the possibility that in the first five sessions anonymity may have been compromised, these five sessions are dropped from the full data sample. Thus, the working sample in this thesis is 45 sessions with 180 participants.

Details of the data and location are provided in the next chapter. In each session, subjects were allotted a unique id in the form of an alphabet (A, B, C, and D).

The experiment began with an initial task based endowment stage where each subject was given a chance to earn an endowment based on a simple task. The second stage, a betting stage was introduced with the purpose of creating an unequal wealth distribution but through a fair process. After the betting stage, additional money, *gift money*, was given to two "randomly" chosen subjects in each session. The advantaged subjects were always A and C, but as far as the other participants were concerned A and C were randomly chosen. This stage was designed to introduce inequality in the wealth distribution through an unfair process. The idea was to induce the notion of "black money". The fourth stage was the burning stage where subjects could eliminate ("burn"/"decrease") other participants money by giving up/sacrificing their own earnings at the rate of one-tenth currency per each unit eliminated. The final earnings of the participants were decided on the basis of random dictator approach. That is, even though the burning decision of all the four players was recorded, only the choice of "D" was implemented. The fifth was the final payment stage.[18]

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[17] Rs 100 is approximately € 1.30. In four sessions the participants refused to take the participation fee.

[18] The design and instructions of the money burning experiment in this thesis is inspired and motivated by Zizzo and Oswald's (2001) study "Are People Willing to Pay to Reduce Others Income?"

Substantial efforts were made to ensure that the players could not reveal their decisions to each other. Locations for the experiment were carefully chosen to ensure no disturbance or the least possible disturbance during the session.

Experiment details

Each session was played with 4 participants. Efforts were made to ensure that the four participants chosen for a session were from a similar socio-economic background and were not related to each other or were just acquaintances. This was necessary, considering the design and intention of the experiment. At the start of the experiment, all four participants was asked to choose a number from 1-50 and write their choice at the back of the sheet given to them prior to the experiment. The player who wrote down the largest number was allotted alphabet A and the player who wrote down the smallest number was allotted the letter D. Placard with their respective alphabets were placed in front of each participant. Subsequently, the instructions of the experiment were read out to them in Hindi.

The experiment was divided into five stages:

Stage 1 - The task based endowment

In the first stage, the participants were given a chance to earn their initial endowment by doing a simple task. The aim of this stage was to distribute the initial endowment on a fair and effort-based approach and to mimic income differences in the real world based on the capabilities and hard-work of individuals. The experiment assumes that the income inequality (unequal final outcome) created due to the capabilities or hard-work of individuals is considered fair by others.

The task design was simple, and un-related to academic aptitude or work skills. A stack of 30 coins was placed in-front of each participant (picture #3 in Annexure B). The stack included coins of different values, one rupee coins, two rupee coins and five rupee coins. The task was to pick out as many two rupee coins from their individual stacks in 15 seconds. The participant who picked the most coins was considered the winner and was eligible for the highest amount of the initial endowment. In case of a tie, the task was repeated with a shorter duration of 10 seconds.

The instructions clearly stated that the first winner was entitled to the highest amount – Rs 300, the second to Rs 200, third to Rs 150 and fourth to Rs 100. The participants were also instructed that the game was being played with real money and that they were entitled to take this money home and therefore, should take the task seriously.

Since the sessions were held in different settings and locations, efforts were made to ensure that all the participants were at the same level of ease and convenience to play the game.

After the task, the result was announced in front of all the participants. At this point, fake plastic currency in the form of poker chips were distributed as a substitute for real money. At the same time, participants were instructed that the fake currency was being used only for ease of the game and they would get real money at end of the experiment. After the distribution of their individual earnings, each participant was asked to write their earnings (amount) on a sheet given to them under the column "Initial Endowment" (picture #4 in Annexure B). In addition, they were also instructed to write down the initial amount of other player's as that would help them make decisions later in the experiment. During sessions, if any player was unable to write or required help with the instructions, the research assistant or I wrote down the amount for them on their sheets.

At the end of this stage, participants were again reminded that this round had given them a chance to earn their money on a fair and effort-based approach.

Stage 2 - The betting

In the second stage participants were given a chance to play a lottery with their earnings from the first stage. The aim of this stage was to create an unequal wealth distribution. The experiment offered a lottery (1/3 chance of winning) and each individual had an equal chance of winning. The underlying aim of this stage was to introduce inequalities in the distribution of wealth but on the basis of a fair process. The betting outcomes are assumed to be fair based on the idea that often individuals attribute their financial or social conditions to their luck or destiny.

Players had to choose how much of their initials earnings to bet (a number between 0 and their maximum earnings). They could bet the entire amount, no amount or part of their amount in the lottery. The result of the bet was decided through a draw of chits. Three chits were placed in front of each player and they had to choose one chit. If a chit with number 1 was drawn, the player won and retained the original (uninvested) amount and in addition doubled the amount of the bet. In case any other number was drawn (2 or 3) the bet was lost. Participants were clearly instructed that the bet was not compulsory.

Each participant was then asked to write the amount they wished to bet on the sheet under the column – "Lottery (Invest)" (picture #4 in Annexure B). Steps were taken to ensure that this was done in anonymity.

The chit was drawn and the results were conveyed to each player. While announcing their results extra effort was made to convey their results in a manner that primes the feeling of "being lucky/unlucky". For example, if a participant won the lottery, he/she was congratulated by using phrase like "Great! Your luck has worked very well today" and quite the opposite if someone lost their bet like "Oh sorry! Seems like your luck is not in your favour today" (picture #5 in Annexure B).

Stage 3 - The treatment

In this stage, instead of the fair lottery game, two players were given an additional amount of Rs 300 as a "gift".[19] The aim of this stage was to further increase wealth inequalities (unequal outcome) induced in the first and second stage and simultaneously introduce procedural unfairness in the experiment. Furthermore, the idea was that since the players had now experienced the effort-based (fair) payout and the fair lottery stage, the unfairness in the arbitrary allocation of money at this stage would strike them as particularly "unfair".

As per the design, in each session, only players A and C received the gift. B and D did not receive the gift in any of the sessions. **The treatment in this experiment is "not receiving the gift".** Thus, according to the treatment defined, players B and D are players in the treatment group.

However, the participants were unaware of this selection. The instructions at this stage of the experiment read that the additional money is granted based on some pre-determined criteria and the reasons cannot be disclosed. Thus, in each session, the players – A and C have the initial effort based payout, the returns from their bets and the additional Rs. 300. The other two players – B and D, did not get any gift money but retain their initial effort based payout and the returns from their bet.

The total gain of the four players (up to this stage) was then announced. In addition to the announcement, the players were instructed to write this amount on their sheets so as to make it visually clear.

Stage 4 - The burning

In this stage, the four participants were offered an opportunity to decrease each other's money by paying a part of their own money at the rate of one-tenth currency per each unit eliminated. The aim of this stage was to understand and explore the reactions of the participants when faced with unequal outcomes which have been reached through fair and unfair procedures.

The instructions further stated that once all the players have made their burning decision, a random dictator design will be implemented to determine their final earnings. Random dictator design meant that any one participant's burning decision will be chosen and finalised to determine the burning.

According to the design of the experiment, the random dictator was always player "D". However, this was not known to the participants. The subjects were requested to write down their decisions under the column – "Eliminate Following Amount of" (picture #4 in Annexure B).

The participants were again reminded that "there is no right or wrong here. You can decrease the money of other in any way you chose or not at all. Also remember that the other player will also give his/her recommendation to decrease your money".

[19]Rs 500 in six sessions.

Special attention was made while explaining to them that "the money they chose to burn will not be given to them. And in the end, only one player's decision will be randomly selected for the burning/elimination decision".

Stage 5 - The payment

The final earnings of each participant were calculated. This included the adjusted sum of each participant depending on the decision of the dictator D. The final monetary value of each participant was told to them. The participants were further asked to remain seated for a short questionnaire. Each participant was taken out of the room or to a distant area, individually, for the questionnaire and their payments (picture #6 in Annexure B). The participant was paid his/her earnings, if any, and the participation fee. The players were paid one at a time, and the amounts were given in an envelope and their signature was duly taken on the receipt book.

The questionnaire

After the experiment, the participants answered additional questions to obtain socio-demographic characteristics, complementary information on the experiment as well the participant's attitude towards the demonetization policy. The questions on the experiment had a similar formulation as the questions used by Zizzo and Oswald (2001) in their money burning game. The survey questionnaire is attached in Annexure (C). The questionnaire consisted of three parts.

The first part included socio-demographic characteristics of the participants: age, employment status, gender, marital status, level of education, occupation, family size, and religion. The possible answer for age, employment, education level and family size were in categories.[20]

The second part included three questions related to the experiment. These questions explored:

- "Comprehension" of the experiment, that is, whether the participants understood the experiment or not. The question was necessary to include, since, there is a possibility that a participant made his/her burning decision, in the absence of proper understanding of the experiment.
- "Motivation" of the subjects for making their final burning decisions. The question was included to understand the different factors driving their decisions. The question also aims to test whether the treatment in our

[20] The possible answer category for age: 1[18-24], 2[25-34], 3[35-44], 4[45-54] and 5 [55 and above]. For education: 1[less than primary], 2[primary], 3[secondary], 4[college], 5[post graduation] and 6[others]. For occupation: 1[Housewives], 2[Daily wage labour], 3[Seasonal Labour], 4[Service-Private], 5[Business], 6[students/researchers/teachers], 7[contributing family workers], 8[others]. For Family Size: 1[two or less], 2[more than two], 3[four or more].

experiment – "unfairness/unfair procedure" was clear to the participants or not.

- "Motivation of other players" in the group. This question was included to understand how participants interpret the behaviours and actions of others.

The third part included questions on demonetization:

- Whether the participant favoured demonetization when it was implemented and the reason for their support or lack of support.
- Whether the participant still favours demonetization nine months after its implementation and why.
- Whether they experienced any monetary loss during the policy implementation.
- Whether they experienced any inconvenience by standing in banks and ATMs during the policy implementation.

The questions on individuals' motivation, others motivation and views on demonetization were all open-ended questions. The purpose of including these questions was to get an insight on the complete range of possible responses from the participants and not limit their responses to certain category or check list.

3.2 Hypotheses

Based on the literature discussed and the experiment, this thesis aims to test ***three specific hypotheses:***

H1 - Treatment effect and pure self-interest

If individuals are driven purely by self-interest, then their treatment status (received no gift money/treated unfairly) should have no bearing on their burning decision as burning implies a reduction in their own endowment. However, if they do burn money it implies that they are concerned not just about their own endowment but also their relative endowment and/or the fact that they were treated unfairly.

H2 - Treatment effect and social preferences

If unfair treatment matters then subjects who are treated unfairly (the treatment group) should burn more money than the subjects who receive gift money. That is, the burning rate for the two individuals who did not receive a gift (B and D, no-gift) should be greater than the burning rate for individuals who did receive a gift (A and C, gift).

H3 - Fairness and procedural unfairness

Subjects who were treated unfairly should burn a greater amount of the endowment of those who received the gift money as compared to subjects that did not receive a gift. That is, the two individuals who did not receive a gift (B and D) should burn a greater amount of the endowments of A and C rather than each other's, or the amount burnt when comparing no gift-gift should be greater than the amount burnt for those in the category no gift-no gift.

As a corollary to H3, those who have received a gift, perhaps due to guilt, should be less likely to burn the money of those who have not received a gift. That is, the group gift-no gift should burn less as compared to those in the category no-gift-no-gift.

H4 - Demonetization acceptance

A positive correlation between burning (which acts as a proxy for fairness or envy) and support for demonetisation.

The regression specifications to test these hypotheses are discussed in the next section.

3.3 Econometric specification

In the first instance, the aim is to examine whether the treatment status of an individual has a bearing on the burning decision (H1). To estimate the average effect of the treatment (not receiving the gift) on burning outcomes, the first specification maybe written as,

$$Burning_{is} = a + \beta_0\, nogift_{is} + \delta\, X_{is} + \nu_s + \varepsilon_{is}\,, \qquad (1)$$

where, $Burning_{is}$,(a continuous variable) denotes the total amount of money burnt by individual i in session s, $nogift_{is}$ is a variable which indicates whether an individual received the gift or not. It is a dummy variable, which takes on the value of one if an individual did not receive the gift and zero otherwise. X_{is} is a vector of socio-demographic characteristics of individuals, $\nu_s$is a session fixed effect, and ε_{is} is a random error term. Since treatment is randomized, the coefficient β_0 is expected to provide an unbiased estimate of the average effect of the treatment on the burning outcome. If the coefficient $nogift_{is}$ is zero it implies that individuals only care about their endowment and not the endowment of others or the manner in which they have been treated (H1). If indeed, the coefficient on $nogift_{is}$ is statistically different from zero then the data supports importance of social preference (H2).

Although the comparison between individuals receiving the gift and not receiving the gift identifies the average impact of the treatment on burning, it does not capture the fact that burning will also depend on the status of (gift-no gift) other participants. To examine these interactions consider a reformulation of (1) which may be written as follows:

$$Burning_{is} = \alpha + \beta_0\, nogift_{is} + \beta_1\, otherplayers_nogift_{is} + \beta_2\, (nogift * otherplayers_nogift)_{is} + X_{is}\delta + \nu_s + \varepsilon_{is}, \qquad (2)$$

where, $otherplayers_nogift_{is}$ indicates whether the other player in a session has received a gift or not as compared to the individual with $nogift_{is}$. It is a dummy variable and takes on the value of one the individual has not received the gift and zero otherwise.

The data set is constructed such that each individual (A for instance) is faced with a chance to burn money of remaining three players (B, C and D) in a session. Thus, in equation (2), the variable $nogift_{is}$ indicates whether A receives a gift or not in a particular session and the variable $otherplayers_nogift_{is}$ indicates the treatment of B, C and D (as compared to A). Detailed explanation of the data structure is attached in the Annexure (D) and explains both variables $nogift_{is}$ and $otherplayers_{is}$ in an elaborate and easy-to-read manner.

The linear combination of the coefficients estimated using (2) allows a test of H3. The interactions are explained in Table (1) below.

Table 1
Description of the interactions for money burning outcome

Interaction	Explanation	Alternate Explanation	Estimated coefficient (2)
Gift - Gift	Average burnings when a player has received the gift and the other player has also received the gift.	Average burnings of A and C (by each other)	α
Gift - No Gift	Average burnings when a player has received the gift and the other player has not received the gift	Average burnings of B and D by A and C.	$\alpha + \beta_1$
No Gift - Gift	Average burnings when a player has not received the gift and the other player has received the gift	Average burnings of A and C by B and D.	$\alpha + \beta_0$
No Gift - No Gift	Average burnings when a player has not received the gift and the other player has also not received the gift.	Average burnings of B and D (by each other).	$\alpha + \beta_0 + \beta_1 + \beta_2$

Specifically, if H3 holds then no gift-gift should be greater than no gift-no gift or $\alpha + \beta_0$ should be greater than $\alpha + \beta_0 + \beta_1 + \beta_2$. If the corollary to H3 holds then $\alpha + \beta_1$ should be less than $\alpha + \beta_0 + \beta_1 + \beta_2$.Equations 1 and 2 are estimated using ordinary least squares (OLS). In addition to providing estimates of burning, we also provide estimates for the probability of burning where burning is treated as binary outcome. Second, we also estimate a specification where the dependent variable is the money burning rate, that is, the amount of money that an individual burns of the total money which may be burnt.

Finally, since one of the objectives of this study is also to examine whether there is any explicit link between the desire to inflict pain on others by burning their money and acceptance of demonetisation in India. We try to examine this by combining the data from experiment and the data from the questionnaire collected during the research. A linear probability model is estimated where support for demonetization is modelled as:

$$Demosupport_i = burning_i + nogift_i + X_i\delta + \varepsilon_i, \quad (3)$$

where, $Demosupport_i$ takes a value 1 if an individual supports demonetisation policy. $Burning_i$ is a continuous variable and in this model is used as a proxy for unobserved social preferences in real life (concern for fairness or envy) and the support for demonetization policy is expected to be affected by this social preference.

Before presenting the results of the experiment, the next chapter provides information regarding the data, research sites and provides an overview of the dataset gathered during the research.

4 Data and descriptive analysis

The first section of the chapter describes the data sample and location. The second section presents the socio-economic characteristics of the participants along with the composition of data sample by treatment and control. The last section provides an overall view of the participants on demonetization policy.

4.1 Data sample and data location

The sample was collected during the months of July-August, 2017. The sample was broadly divided into five socio-economic groups – daily wage labourers (22.78 percent), farmers (20 percent), housewives (17.78 percent), private services (23.33 percent) and business (16.11 percent).[21] Daily wage labourers include construction workers, carpenters, security guards, housekeepers, auto-drivers. Housewives include full-time home-makers. In private services, the participants include bankers, chartered accountants, financial analysts and employees of private companies. The business group includes shopkeepers and small and medium business holders.[22] Table (A) in the Annexure (E) displays the main features of data collection.

Research site

The experiment was conducted in both urban and rural areas with an aim to produce a more diverse sample as compared to the standard sample of graduate school students.

The rural sample with 26 sessions (104 subjects) was collected from nine villages in Bijnor district in the state of Uttar Pradesh namely, Shahpur Jamal, Biharipur, Hasanpur, Afzalgarh, Nadehi, KasampurGarhi, Barkatpur, Macchmar, SarkaraKhedi. The area was chosen due to practical reasons as it

[21] This group includes seasonal labourer also (5.5 percent)

[22] While designing the experiment, the intention was to include "researchers" as one of the groups in the experiment. However, due to difficulty in finding and finalizing at least 20-24 individual researchers in New Delhi, the group was substituted with "business/shopkeepers".

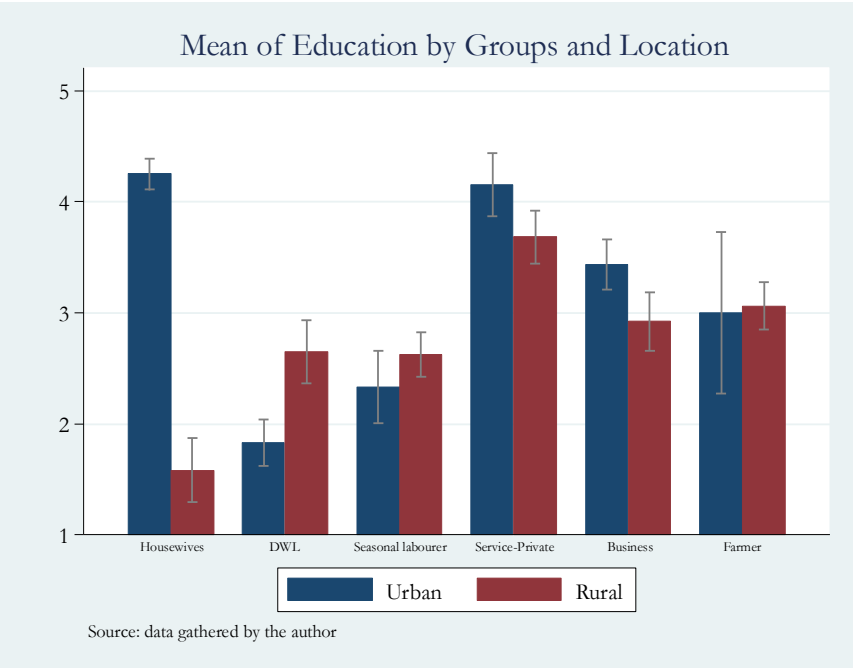
enabled easier access to potential participants. The local language spoken in the entire district is Hindi. Efforts were taken to conduct the experiments in locations with minimum disturbance and noise. An overview of the experiment site in rural areas is presented in Table (B) in Annexure (E).

For the urban sample, the region selected was the capital city of New Delhi, and neighbouring cities of Noida & Gurugram. Nineteen sessions (76 subjects) were conducted in these three cities. The sessions were conducted in various neighbourhoods of the New Delhi including North Delhi, North West Delhi, Central Delhi, East Delhi and South West Delhi. Noida is located in the Gautam Buddh Nagar district of Uttar Pradesh state, and shares its border with the capital New Delhi. It is about 25 kilometres southeast of New Delhi. It is also a part of National Capital Region of India. Gurugram (also called Gurgaon) is a highly urbanized city in the Indian state of Haryana and is about 32 kilometres southwest of New Delhi. It is also a part of National Capital Region of India. Location details of the experiment for urban data are presented in Table (C) in Annexure (E).

4.2 Socio-economic characteristics of the participants

Overall, the sample consists of 137 men (76.11 percent) and 43 females (23.89 percent). The ratio of males was higher in the sample mainly because of the groups chosen. Except for housewives and private services, in other groups, it was only possible to conduct the experiment with males. The daily wage

Figure 1
Education Levels (across groups and location)



Note: The education level was reported by the categories 1[less than primary], 2[primary], 3[secondary], 4[college], 5[post-graduation], 6[others]

labourer group does have female workers but during the data collection most of them did not agree to participate. 89 percent of the participants in the sample fall in the age bracket 25-54. Majority of the participants (73 percent) had secondary and higher level education. The participants in the urban locations had higher education than participants in the rural location (see Figure (#1). A majority of the participants (81 percent) reported Hinduism as their religion. The remaining sample reported Muslim and Sikhism as their religion mainly.

Table 2
Demographic statistics of the sample and Verification of Randomization

Demographic Characteristics of the Sample & Verification of Randomization								
		Total Sample		Treatment (n=90)		Control (n=90)		t-test
Variable	Total observations	Mean	SD	Mean	SD	Mean	SD	p value
Gender (M=1, F=0)	180	0.76	0.43	0.77	0.43	0.76	0.43	0.862
Ability to read/write (Y=1,N=0)	180	0.93	0.25	0.94	0.23	0.92	0.27	0.553
Age								
Between 18-24	180	0.11	0.32	0.09	0.29	0.13	0.34	0.346
Between 25-34	180	0.29	0.45	0.29	0.46	0.29	0.46	1.000
Between 35-44	180	0.33	0.47	0.34	0.48	0.32	0.47	0.753
Between 45-54	180	0.16	0.36	0.17	0.37	0.14	0.35	0.683
Above 55	180	0.1	0.3	0.11	0.32	0.11	0.32	1.000
Education								
No education	180	0.14	0.35	0.13	0.34	0.16	0.36	0.674
Primary	180	0.13	0.33	0.11	0.32	0.14	0.35	0.506
Secondary	180	0.27	0.45	0.29	0.46	0.26	0.44	0.618
College	180	0.32	0.47	0.31	0.47	0.3	0.47	0.874
Post-Graduation	180	0.13	0.34	0.16	0.36	0.11	0.32	0.383
Technical/Vocational	180	0.01	0.07	0	0	0.01	0.11	0.319
Occupation								
Housewives	180	0.17	0.38	0.17	0.37	0.18	0.38	0.845
Daily Wage Labourer	180	0.18	0.38	0.18	0.38	0.18	0.38	1.000
Seasonal Labourer	180	0.26	0.44	0.27	0.44	0.26	0.44	0.866
Service-Private	180	0.05	0.22	0.06	0.23	0.04	0.21	0.734
Business	180	0.14	0.35	0.14	0.35	0.14	0.35	1.000
Others	180	0.19	0.4	0.19	0.39	0.2	0.4	0.852
Marital Status								
Single	180	0.14	0.35	0.18	0.38	0.1	0.32	0.205
Married	180	0.85	0.36	0.82	0.38	0.88	0.33	0.299
Widowed	180	0.01	0.07	0	0	0.01	0.11	0.319
Family Size								
Less than two	180	0.07	0.25	0.09	0.29	0.04	0.21	0.234
Two to Four	180	0.39	0.49	0.36	0.48	0.39	0.49	0.541
Four or more	180	0.56	0.5	0.56	0.5	0.56	0.5	1.000
Religion								
Hindu	180	0.81	0.39	0.84	0.36	0.78	0.42	0.256
Muslim	180	0.11	0.31	0.11	0.31	0.11	0.33	0.810
Christian	180	0	0	0	0	0	0	0.000
Sikhism	180	0.05	0.21	0.03	0.18	0.07	0.25	0.308
Other Religions	180	0.03	0.18	0.02	0.15	0.04	0.2	0.409
Employment Status								
Employed	180	0.49	0.5	0.52	0.5	0.49	0.5	0.882
Self-Employed	180	0.23	0.42	0.23	0.43	0.23	0.43	1.000
Part-time Employed	180	0.04	0.21	0.04	0.21	0.04	0.21	1.000
Retired	180	0.02	0.13	0.01	0.1	0.02	0.15	0.563
Unemployed	180	0.21	0.41	0.21	0.41	0.21	0.41	1.000
Comprehesion	180	0.86	0.35	0.89	0.32	0.83	0.37	0.284
Location (U=1,R=0)	180	0.42	0.5	0.42	0.5	0.42	0.5	1.000

Source: estimation based on data gathered by author

Table (2) displays the demographic statistics of the sample and also compares the characteristics of the sample in treatment (B and D) with those in the control group (A and C). In general, the experimental approach appears to have created groups that are comparable in terms of characteristics.

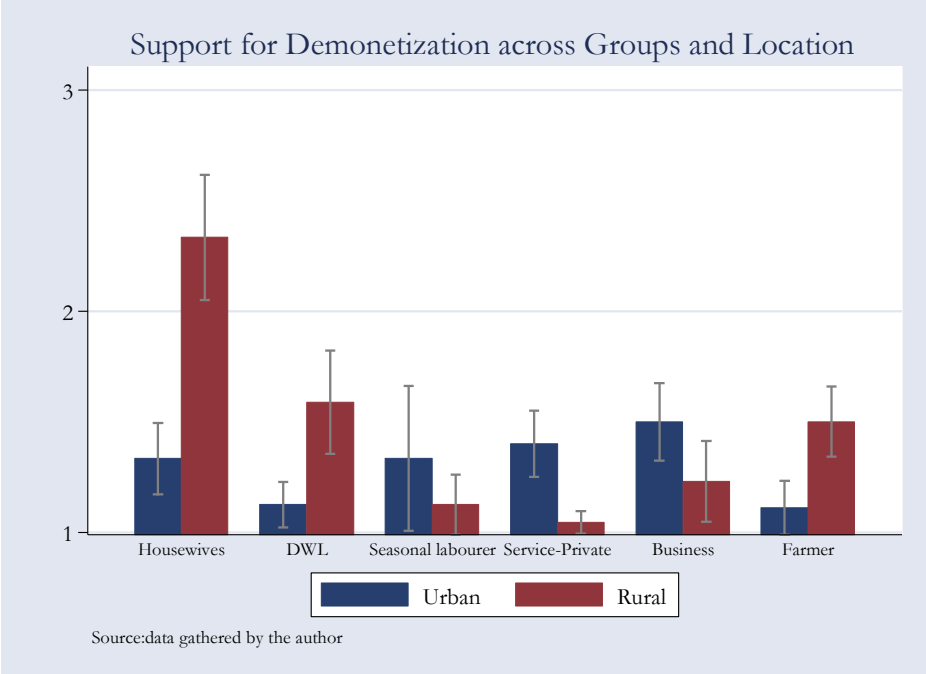
Descriptive statistics by treatment confirm that the two groups – that is, those who receive the gift and those who don't are similar in terms of their socio-economic characteristics. The last column in Table (2) presents *p*-values of difference-in-means between the two groups. Equality of means cannot be rejected at the 5 percent level for any of the characteristics.

4.3 Views and statistics on demonetization

As stated in the introduction, this thesis was partly motivated by the widespread support for demonetisation. In addition to examining social preferences, I used my research to see first-hand how demonetisation affected people and an explanation for their support (if any). In order to do that, I designed some questions regarding the policy and its implication. This section presents the findings from the questionnaire.

72 per cent of the 180 participants stated that they supported the demonetization policy when it was implemented. Within the different groups, the maximum support was shown by daily-wage labour group (80 percent) and the private service employees (81 percent). Majority of the housewives in the rural sample had no opinion on the policy. Two reasons were noticed for this

Figure 2
Demonetization support across location and groups



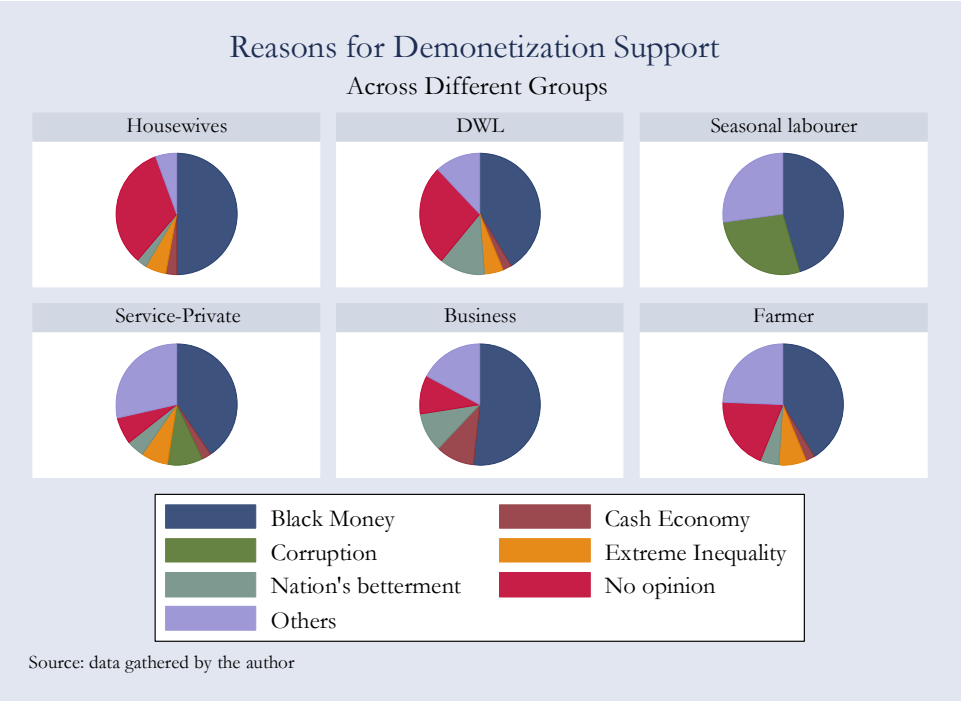
Note: The support for demonetization was reported by the categories 1[Yes], 2[No], 3[No opinion]

during the survey. First, unawareness about the policy and second, no affect from the policy due to very less or no personal income. Figure#2 shows the mean level of support across groups and location.

Of the participants who favoured the policy, 45 percent reported that Black Money is a big issue in India and the policy will tackle this problem. Another 9 percent stated that the hardship is temporary and the policy was needed to tackle growing corruption and extreme inequality. A participant expressed his view by quoting-*"This is a revolutionary move by the Prime Minister. Irrespective of the short term public inconvenience, it will have long term implications for the best interest of the nation"*. Some subjects supported it for the good of the nation.

Of 14 percent non-supporters, some reasoned that India is a cash-based economy and therefore the policy is not likely to work. The other common view was that since black wealth is saved mostly in gold, foreign accounts and real-estate properties, targeting only "cash" may not provide the desired results.

Figure 3
Reasons for demonetization support



Across all the groups, main reason to support the policy was the concern of Black Money in the country (Figure#3). The housewives, more specifically in the rural areas, either were not aware of the policy or did not have an opinion on it. At the same time, survey with other housewives also revealed the

hardship faced owing to the policy.[23] One of the participants, when asked about her view on the policy, expressed herself by stating "*"I lost all my savings because of this policy. I do not have a bank account and am not educated enough to use banks and ATMs. I have to give all my life savings to my husband. We had a fight since I secretly kept this money for my bad times".*

Interestingly, when asked, if they still favoured demonetization, nine months after its implementation, the support rate dropped to almost 37 percent (from 72 percent) majorly due to the inconvenience caused from its poor implementation and no visible result in those nine months. 34 percent stated that they faced inconvenience of standing in the banks and ATMs queues. A farmer from one of the villages expressed -"*There are three ATMs in this region. Only one of them was working that time. It was very cold in November but we use to go and stand in the lines all night. We use to carry our blanket and food with us. It was not possible to stand in the ATM lines during the day due to our work".*

The next chapter presents and discuss the results.

5 Results

This chapter explains the experiment results and present the findings of the regression. The chapter is divided in two sections. The first section presents an overview of the initial endowment and betting stage statistics. The second sections present the burning results and test the stated research hypotheses.

5.1 Initial endowment and betting statistics

This section presents the finding of the task and betting stage in the experiment.

On an average, the players earned Rs 187.50 in the first round and invested Rs 86 in the lottery round. Players, on an average invested around 47.62 % of their initial endowment in the lottery[24]. Table (3) displays the experimental results of the sample and also compares the characteristics it in treatment (B and D) with those in the control group (A and C).

[23] In India, it is common for housewives to keep some undisclosed wealth from their husband for urgent or bad circumstances. This is due to low literacy and also not been to access the banking facilities. In rural areas specifically, the housewives do not have separate bank accounts. When demonetization was implemented in India, a lot of women had to disclose their wealth resulting in monetary losses and also domestic violence.

[24] Investment rate is the percentage of amount invested in the lottery out of the initial endowment.

Table 3
Experiment statistics

		Experiment Results (Total 180 participants in 45 sessions) Treatment : Receiving No Gift in the experiment						
		Full Sample		Treatment (n=90)		Control (n=90)		t-test
Characteristics	Total number of observation	Mean	SD	Mean	SD	Mean	SD	p value
Initial eanings	180	187.5	74.16	201.11	73.05	173.89	73.14	0.01
Bet - Lottery	180	86	56.89	83.44	58.13	88.56	55.82	0.548
Investment Rate	180	47.62	27.83	42.82	25.53	52.41	29.31	0.0204
Earnings - Post treatment	180	317.33	191.28	174.00	123.78	460.67	129.28	0.00
Final Payment	180	246.34	166.92	149.24	118.87	343.44	151.12	0.00

Source: data gathered by the author

The treatment group is observed to have done better in the task of stage one than the control group. The results are mostly influenced by the high endowment of player D as compared to other players. There is no statistically significant difference noticed in the average betting of the treatment and control group (p=0.548). The post treatment earnings of the control group is significantly more than the treatment group because of the additional gift money given to the control group.

5.2 Burning results

Average effect of not receiving a gift on burning

This section presents regression results and tests the four hypotheses. Table (4) presents OLS regression results of equation (1). Column (1) estimates the effect of treatment status of an individual on burning. Column (2) controls for session effects and Column (3) presents the extended specification including socio-demographic controls and session effects.

Table 4
The average effect of not receiving a gift on burning

	The Average Effect of Not Receiving Gift on the Burning						
	Dependent Variable: Burning (continous)			Dependent Variable: Burning (Binary)		Dependent Variable: Burning Rate (%)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
No Gift	47.167***	47.167***	44.042***	0.159**	0.178***	10.474***	9.921***
	(8.427)	(8.427)	(9.861)	(0.054)	(0.057)	(2.118)	(2.352)
Constant	24.41***	44.750***	41.998	-0.496***	0.104	-9.281***	9.552
	(4.19)	(4.214)	(124.311)	(0.027)	(0.703)	(1.059)	(28.739)
Number of Observation	540	540	540	540	540	540	540
R squared	0.0693	0.2187	0.2911	0.2522	0.3345	0.1975	0.288
Session effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Socio-economic Controls	No	No	Yes	No	Yes	No	Yes

Note : This table reports the effect of treatment on the burning outcome. Column(2) includes socio-economic characteristics: gender (1/0), literacy(1/0), dummies for education level, employment, occupation, marital status, familysize and religion. Standard errors are presented in brackets and are clustered by sessions. */**/*** p<0.1/0.05/0.01, respectively

The positive effect of no gift on burning in column (1) indicates that players who are unfairly treated burn Rs 47 more than the players who have received gift money. The results are statistically significant at the 1 percent level, (p=0.000). The inclusion of socio-demographic characteristics and session effects does not alter the conclusion that being treated unfairly leads to greater money burning.

Columns (4) and (5) present estimates for the probability of burning where burning is a binary variable and takes on the value of one if burning is greater than zero. With and without socio-economic controls, the coefficient associated with burning is positive and significant at the 5 percent level. The positive sign indicates that the probability of burning a non-zero amount increases by 15 to 18 percentage points when an individual is treated unfairly.

Columns (6) and (7) presents estimates of the effect of not receiving gift money on the share of money burnt – that is, the amount of money burnt as a share of the individual's pre-burning stage endowment. Regardless of the specification, the estimates show that disadvantaged individuals burn about 10 percent more than those who were treated fairly.[25]

The positive and statistically significant effect of not receiving a gift on the absolute amount of the money burnt, the probability of burning and the share of money burnt all indicate that hypothesis H1 is not supported. That is, the result implies that individuals care not only about their endowment but also the manner in which they have been treated and their relative payoff.

But do all individuals exhibit social preferences? In other words, can we completely reject the self-interest theory? Based on our findings, the answer is "no". In our sample of 540 total burning decisions, burning was observed in 36 percent of the cases, while in the remainder, players chose to burn nothing.[26] In terms of number of players, of 180 players, 54 percent of 97 players burnt money, at a cost to themselves. As shown in the table below, player D and B, who were treated unfairly burnt more money than others and was willing to sacrifice their resources to do so. Shown in Column (3 and 4) below, on an average, player D engaged in the maximum burning with Rs 86.55 followed by player B with Rs 56.59. And to do so, the players in treatment group (B and D) were willing to pay Rs 21.13 and Rs 25.94, respectively which is greater than the resources sacrificed by the control group players.[27]

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[25] The complete details of Column (2-7) are attached in Annexure E (Table A and B)

[26] Working sample in this paper is 45 sessions with 180 participants. Each participant was allowed to take three burning decision. A participant could not burn his/her own money. In a total of 45 sessions, total numbers of burning decisions made are 180*3 = 540 decisions.

[27] Of 540 observations, in 465 observations participants displayed complete understanding of the experiment and in 75 observations the participants' displayed no or partial understanding of the experiment. It is possible that some subjects chose to burn out of misunderstanding of the experiment. We replicated the results using the "comprehension" variable– that is whether participants understood the experiment or not. There was not much difference observed. In 66.67 percent of the cases, players urn nothing with overall mean burning of Rs. 46.08 (std. Dev. 89.96) and median zero.

Table 5
Individual results of each player in three stages

		Initial Endowment (1)		Betting (2)		Burning (3)		Cost (4)	
	Number of Observations	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Total Sample	180	187.5	74.16	86	56.89	47.99	68.04	14.45	20.44
Player									
A	45	163.33	70.22	84.55	54.18	32.11	50.29	9.63	14.97
B	45	183.33	73.08	85.88	59.24	56.59	70.97	16.97	21.13
C	45	184.44	75.24	92.55	57.74	16.7	28.74	5.23	9.06
D	45	218.89	69.32	81	57.56	86.55	87.1	25.97	25.94

These results are comparable with other literature on social preferences. For instance, in Zizzo and Oswald's (2001) money burning experiment, 62.5 percent of subjects chose to burn others money and in their later study Zizzo (2003), 50 percent of the subjects engaged in burning money. In Kebede and Zizzo's (2014) field experiment and Abbink and Sadrieh (2008) joy-for-destruction experiment, 44 and 40 percent of the players chose to burn.

Thus, the results in this paper offer balanced support for both, self-interest behaviour as well for social preferences. Based on the finding so far, we conclude that the traditional self-interest theory cannot be completely ruled out while at the same time social preferences also influence the decision of individuals.

Interactions between players and burning

Table (6) presents results of equation (2).

Table 6
Average Effect of Interactions between players on burning

	The Average Effect of Interactions between the Players on the Burning						
	Dependent Variable: Burning (continous)			Dependent Variable: Burning (binary)		Dependent Variable: Burning Rate (%)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
No Gift [1/0]	46.361**	46.361**	43.237**	0.083	0.102	10.364**	9.811**
	(13.392)	(13.978)	(15.287)	(0.073)	(0.077)	(3.167)	(3.528)
Other player - No Gift [1/0]	-38.639***	-38.639***	-38.639***	-0.261***	-0.261***	-5.769*	-5.769*
	(8.055)	(8.408)	(8.658)	(0.048)	(0.05)	(2.382)	(2.453)
No Gift # Other player - No Gift	-36.222*	-36.222*	-36.222*	-0.033	-0.033	-5.440	-5.440
	(14.513)	(15.149)	(15.599)	(0.04)	(0.084)	(4.512)	(4.647)
Constant	50.167***	70.51***	67.757	0.455***	0.278	-19.542***	13.398
	(8.345)	(7.434)	(126.548)	(0.421)	(0.711)	(1.059)	(29.162)
N	540	540	540	540	540	540	540
R Squared	0.1676	0.3169	0.3893	0.3268	0.4091	0.2317	0.3230
Session effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Socio-economic Controls	No	No	Yes	No	Yes	No	Yes

Note : This table reports the effect of treatment on the burning outcome. Column(3, 5 and 7) includes socio-economic characteristics: gender (1/0), literacy(1/0), dummies for education level, employment, occupation, marital status, familysize and religion. Standard errors are presented in brackets and are clustered by sessions. */**/*** p<0.1/0.05/0.01, respectively

Column (1) in Table (6) presents estimates of equation 2 without controlling for session fixed effects or socio-economic indicators. Column (2) controls for session fixed effects. Column (3) is the extended specification including socio-demographic controls and session fixed effects. Column (4 and 5) use burning as a binary outcome and Column (6 and 7) defines the dependent variable as burning rate.[28]

Similar to the findings in Table 5, those who do not receive a gift burn Rs. 46 more than those who do receive a gift and their burning rate is about 10 percentage points higher than gift recipients. The result confirms H2 and implies that irrespective of the treatment status of other player, if an individual has been treated unfairly, burning will be higher.

Based on the coefficients in columns (1-3) we now explore the different interactions in Table (7) below:

Table 7
Average Burning in Different Interactions

The Average Burnings in Different Interactions							
Interactions	**Coefficient in equation 2**	**Mean**	***p* value**	**Mean**	***p* value**	**Mean**	***p* value**
		(1)		(2)		(3)	
Gift-Gift	α	50.167	0.00	70.519	0.000	67.75	0.595
		(7.434)		(7.434)		(126.58)	
No Gift-Gift	$\alpha + \beta_0$	96.527	0.00	116.87	0.000	110.99	0.389
		(8.278)		(8.278)		(127.59)	
Gift-No Gift	$\alpha + \beta_1$	11.527	0.03	31.87	0.000	29.11	0.815
		(4.762)		(4.761)		(123.68)	
No Gift-No Gift	$\alpha + \beta_0 + \beta_1 + \beta_2$	21.667	0.00	42.009	0.000	36.132	0.773
		(4.788)		(5.345)		(124.63)	
Session Effects		No		Yes		Yes	
io-economic characteristics		No		No		Yes	
Note : These linear combinations of the coefficients from equation 2 are estimated using "Lincom" command in Stata.							

The interactions in all three specification shows similar pattern. The point estimates do not vary much with the inclusion of session and socio-economic controls. However, in Column (3) we observe large standard error associated with the estimates. This is likely due to the large number of control (81)

[28] The complete details of Column (2-7) can be seen in Annexure E (Table C and D).

variables in the specification. For this reason, the discussion below is based on the results in Column (2) which only controls for session effects but no other socio-economic indicators.

The point estimate for No Gift-Gift –Rs. 116.87 is substantially greater than for No Gift-No Gift (Rs.42). The difference is large and statistically significant. Clearly, individuals who did not receive a gift (B and D) choose to burn a greater amount of the endowments of A and C rather of each other's. The result supports H3 and the relevant literature which states that procedural fairness matters along with relative payoffs or outcomes (Hoffman and Spitzer, 1985).

We further used the questionnaire data to strengthen our hypotheses and enrich the findings. The responses obtained support the previous finding of existence of both self-interest behaviour and social preferences. Post experiment, the participants was asked a simple question as to what motivated their burning decision. The study finds that of the 97 players, who chose to burn some amount, at-least 62 players stated that their action was motivated by a desire for equal share and unfairness concerns (22 "Equal share", 35 – "Unfairness", 5 –"Others got more money"). And of 83 players who did not burn any amount, 59 players went by the rule of self-interest stating they had "No Reason" (43) or "No Personal Gain" (16) in burning others money.

Amongst individuals who exhibited social preferences, concern for fairness dominated their behaviour. Fairness includes both, an equal and fair distribution and the fair process through which the distribution is achieved. We also found some evidence of burning from desire to have equal outcomes. However, of 90 players in the treatment group who chose to burn others money, only 16 players (17.7 percent) reduced Rs 300 or more amount of the participants in control group. If subjects were perturbed by equality concerns, they would have burnt the additional Rs 300 completely. Complete egalitarian behaviour was not observed in most burning decisions. One possible explanation of such behaviour can be the cost involved with the burning. In Zizzo and Oswald (2001) they considered price elasticity for burning. Up to the marginal price of 0.1 the price elasticity was zero and the burning rate went down when the price was increased to 0.25. It is possible that if the experiment is repeated with less cost than 0.10 the participants display more burnings.

The study found interesting results in other interactions as well. The estimate in the case of Gift- No gift (29.11) is less than in the case of the Gift-Gift (67.75) interactions. A possible explanation could perhaps be guilt and discomfort. In the inequity aversion model of Fehr and Schmidt (1999), the loss from disadvantageous inequity (envy) is assumed to be stronger than the loss from advantageous inequity (guilt/discomfort). The results are consistent with this assumption and show that those who receive a gift burn a greater amount of other gift receivers (envy) as compared to those who do not receive a gift, perhaps due to a feeling of guilt.

Overall, there is substantial variation in human behaviour. There is support for self-interest behaviour and at the same time evidence for equality, fairness and perhaps guilt. The paper shows that social preferences or fairness

is driven not only by relative distribution/outcome but also the manner in which the outcome is obtained.

To conclude this section, the estimates show that the standard neoclassical model may not be completely rejected. Rather, the empirical evidence and theoretical models of social preferences may be used to modify the standard utility model and bringing it closer to reality.

Demonetization and burning

The last objective of the study was to examine any link between social preferences and support for demonetisation. The result of equation (3) is presented in the next Table (8).

Table 8
Correlation between Demonetization Support and Burning

Correlation between Demonetization Support and Burning Dependent: Demonetization Support (Binary)		
Explanatory Variable		
Burning	-0.0001784	-0.0001784
	(0.0002475)	(0.0002414)
No Gift	-0.0701171	-.0602716
	(0.110)	(.1094224)
	0.525	
Constant	1.454***	1.9369***
	(0.076)	(.5886)
Socio-economic characteristics	No	Yes
N	180	180
R Squared	0.0054	0.3421

Note : Column(2) includes socio-economic characteristics: gender(1/0), literacy(1/0), dummies for education level, employment, occupation, marital status, familysize and religion.
Standard errors are presented in brackets. */**/*** p<0.1/0.05/0.01, respectively

The negative and statistical insignificant coefficient associated with demonetisation support indicates that there is no statistical link between the support for the policy and burning as a proxy for social preferences. The data does not support H4. However, given the high support of 72 percent for the policy and burning by only 54 percent of the participant the results are not contrary to the expectations.

6 Conclusion

Inspired by demonetization in India and its widespread acceptance, this research paper studied the role of social preferences and fairness in influencing an individual's behaviour and economic decisions. More specifically, the research paper examined if preference for fair and equal outcome (monetary) can affect subjects' behaviour and result in subject's willingness to reduce others income at a personal cost. To examine this behaviour, the study designed a money burning experiment which allowed the participants to earn money by fair task and by means of unfair assigned gift. The participants had a possibility to reduce other players' money by sacrificing a part of their own money.

The results of the study found a substantial variation in human behaviour. Almost half the sample played the game by rule of self-interest engaging in no burning at all. On the other hand, remaining 54 percent of participants chose to reduce others money and were willing to cost their own resources (money) to do so. Amongst individuals who exhibited social preferences by engaging in burning, the fairness concern dominated their decision. The study also found that fairness is driven not only by relative distribution/outcome but also the manner in which the outcome is obtained. In addition to the fairness preference, the study also found some support for equity aversion and perhaps guilt. The findings in this paper are comparable with the published literature in the field.

However, the study also acknowledges that the burning behaviour could have been affected by other factors as well. First being, the experimenter demand effect which means that the subjects burn because of they feel the researcher/experimenter expects them to do so. In my research, I tried to minimize this effect by reading out the instructions very clearly and reminding the participants of burning being a choice (not compulsion) just before they took their final decision to burn or not burn.

Another concern observed goes in line with the discussion by Levitt and List (2007) on generalizability of experiments to real world behaviour. It is possible that some subjects did not show the true response from experience of being scrutinized and observed. During the field work, I encountered few situations when people questioned my identity as an academic researcher and suspected me of being a member from some political party, especially after the questions on demonetization was asked. It is possible that the responses were made from fear of being held as anti-national or anti-social. I think it is important to account for such biases in experimental studies.

Lastly, this thesis also attempts to find a link between burning behaviour (as a proxy of social preferences) and acceptance of demonetization in India. Empirically, the data does not support such link. Considering the high support of 72 percent for the policy and burning by only 54 percent of the participant we do not find the result surprising.

Regardless, the complementary data do suggest that policy was supported even by those who suffered from it. The popular belief being that it will purge

black money, punish the rich and corrupt and will work for nations' betterment. The reasons stated in support of the policy somewhere reflects the dissatisfaction among general public against extreme inequality in the country and more specifically against the individuals hoarding unaccounted black wealth. Having studied how social preferences can motivate a rational economic agent to make irrational decisions, the massive support for demonetization finds one possible explanation. Of course the support reason can vary among people but for some it was the desire to punish corrupts which led them to believe in a policy even with no economic upside for them.

The divergence between the demonetization significance and people's reaction can be attributed to the Prime Minister and his team in successfully exploiting human emotions and using it in their favour, intentionally or unwittingly. By portraying its design and motive to punish anti-social elements, presumably those with unfairly acquired black wealth, the government officials were able to build a consensus around the soundness of the policy. Applying insights from experimental psychology and behavioural economics to the realm of public policy, the government was indeed able to gain a popular support for a policy whose economic significance has been critically questioned.

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Appendices

Annexure (A): Instructions of the experiment

Welcome and thank you very much for coming and volunteering to participate. The purpose of the experiment is to explore and understand some aspects of human behaviour and how we make decisions. All the information gathered here will be used only for academic research purposes. [29]

Please note that the game is about YOUR decision. There are no right or wrong decisions. You should decide on your own/independently and thus, I request you not to talk with each other during the experiment.

The game is played for real money and you will receive the money that you have at the end of the game. Thus, please take each stage of the game seriously.

Before starting the experiment, I request you to choose any number from 1-50 and write down your choice at the back, that is, on the blank side of the slips given to you. Based on your selection you will be allotted an alphabet - (A, B, C or D).

The game has three stages.

In the first stage, you will get a chance to earn an initial endowment. This endowment will be allocated on the basis of your effort and performance. It is a simple task. You have a stack of 30 coins in front of you. The stack includes coins of three different values; one, two and five. You have to pick only TWO rupee coins from it. The one who picks the maximum number of Rupee two coins from the stack kept in-front of you in 15 seconds will be considered the winner and will receive the highest amount. In case of a tie, we will repeat the game, with 10 seconds. The first position will win you Rs 300, second Rs 200, third Rs 150 and the last, Rs 100. You will start picking the coins, when I say "Start" and stop when announced "Times over". In case of a tie, you will be asked to play the game again in 10 seconds.

(Task was done and the results were announced. Fake currency was distributed at this stage.)

We again remind you, that in this stage, we gave you a chance to earn the money based on your effort and performance.

Please write the amount received on the sheet given to you under the column, "Initial Endowment". This will help you remember your initial earnings as well as help in the later stages of the experiment. You must also write the amount earned by other players in this round in-front of their allotted alphabet.

[29] In the field, the word "game" was used instead of experiment.

After this stage, you will be asked to play a lottery. You will decide how much money you want to use to buy a lottery – you can use all your money, a part of it or no money at all. You can only bet from the amount you have received in the first task. You are not allowed to bet your personal money.

The results of the lottery will be made through draw of chits from the bowl. You will pick chits on your behalf. If 1 is drawn, you win and if 2 or 3 are drawn you lose. This means, every one of you, have a one-third probability of winning the lottery. If you win, the amount you invested in the lottery doubles.

For example, you started with Rs 200 and if you use Rs 50 to invest in the lottery and win then your earnings will be 50*2 = 100 + 150 = 250. If you lose, you are only left with Rs 150 after the round.

Another example, you start with say Rs 100 and decide not to invest at all in the lottery. So, after the first round your final earnings will remain Rs 100.

For more clarification, say you start with Rs 300 and decide to invest the entire amount. If 1 is drawn and you win, the final earnings will be 300*2 = 600. If you lose, you are left with no money after this round.

It is up to you if and what amount you want to invest. You can choose not to invest in the lottery as well or invest the entire amount as well.

Now we play the first lottery round. Please note that this is played for real money. Now, please write the amount you wish to invest or not invest on the paper given to you (under the Lottery/Invest column). The amount you chose to invest should remain confidential right now, thus we request you to write your decision and do not speak it out loud.

Please note that it is not compulsory to invest in the lottery. It is entirely your decision to invest or not.

(Results were drawn. The winners received additional fake currency of the additional amount. Similarly, the bet amount was taken back from the losers. The results were announced of the lottery.

This ends the second stage. We again remind you that in the first stage we gave you a chance to earn money based on your effort and in this round, based on your luck.

The third stage - Treatment: Now, the third stage, in which Player A and C, have been chosen for additional money of Rs 300

We cannot disclose the reason for selecting only these two players.

Thus after this stage, the final earnings so far of each player in the groups are announced. We again, request you to write your final earnings and also the earnings of other players, in the total gains column.

This starts the fourth stage of our experiment. So far, we were in charge of the experiment and making you do various things. Now, we will give you a chance to make some decisions. You will be asked to tell us by how much you would like to decrease the money of other person, if given a chance. The money of the other player includes the initial money, any lottery win and the gift money. Please note that to decrease the money of another by say Rs 10,

you have to pay Rs 1 of your own (10% fixed amount). Basically, you pay one-tenth of the money you want to decrease of the other player.

For example, assume total gains of player A is Rs 400, B – Rs 200, C – 0 and D – Rs 700. Please note that this is just an example. Now say, player B has to decide whether she/he wishes to eliminate others money or not. She/he decides to eliminate or decrease Rs 100 from A's earnings and Rs 200 for D's earning, so in order to do that, player B will have to pay one-tenth of the total, that is, one-tenth of 300 (100+200) which is Rs 30 from his/her own earnings.

Please tell us if the process is not clear. We will give you more examples for the same.

Again, note that there is no right or wrong here. You can decrease the money of other in any way you chose or not at all. Also, remember that the other player will too give his/her recommendation to decrease your money. In the end, we will randomly choose one player and his/her decision of decreasing the money and will implement that in the experiment. Thus, for example, you chose not to burn others money but in the random pick, we select the player who decreased your money, then your earnings will be reduced and vice-versa.

Also most importantly, please note that the money which you decide to eliminate will not be given to you.

The experiment will end and your final earnings will be counted according to that player's decision. We ensure you that the decision you make, will not be known to the others. Any decision you make, will be strictly confidential. And in-order to ensure that, we will take you, individually, at some distance, where the other participants cannot see you and you can tell us your final decision without any hesitation.

(The burning instructions were repeated and explained one more time to all the participants, individually, before they made their final decision.)

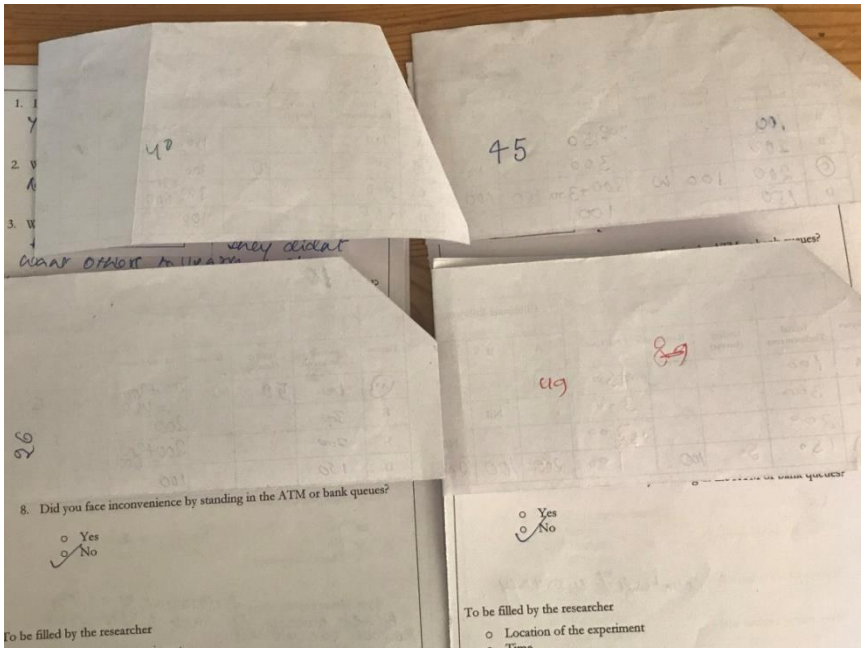
Thank you again for volunteering in this experiment. Your time and participation is very much appreciated. We request your patience for another 5-10 for us to do the final calculations. We request you to answer few questions required for the better understanding of our research. There will be no personal questions asked. For the confidentiality of your answers, the questions will be asked individually. At the end, we will give your participation fee and earnings of the experiment, if any.

Annexure (B): Photos of the experiment

Picture 1
Fake plastic currency used in the experiment

Source: Photo taken by the author

Picture 2
Allotment of Unique ID



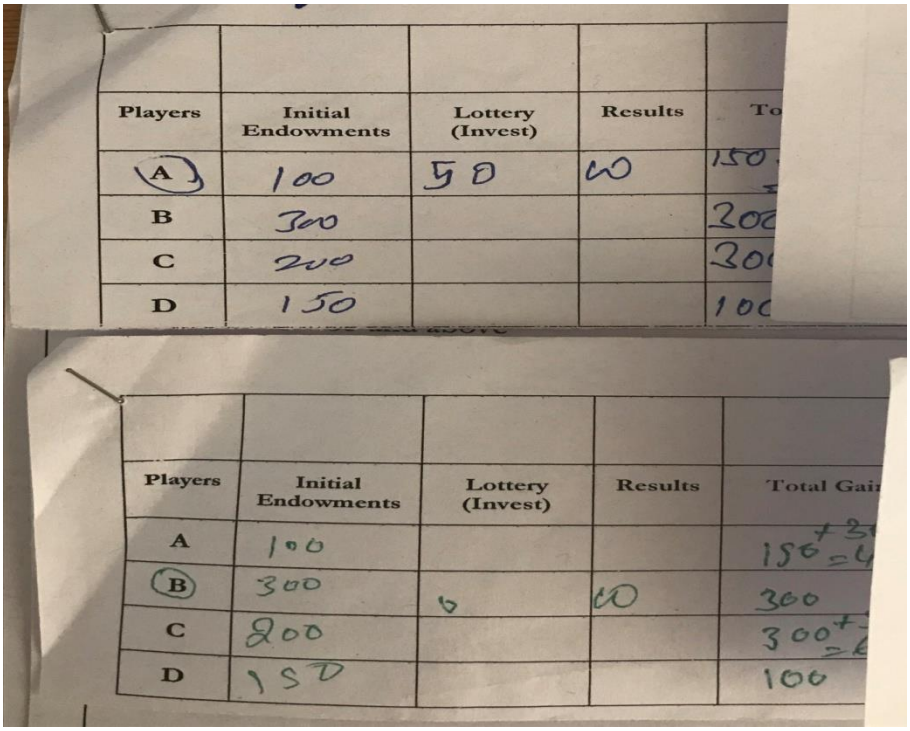
Source: Photo taken by the author

Picture 3
Task Based Endowment Stage

Source: Photo taken by research guide with the participants consent.

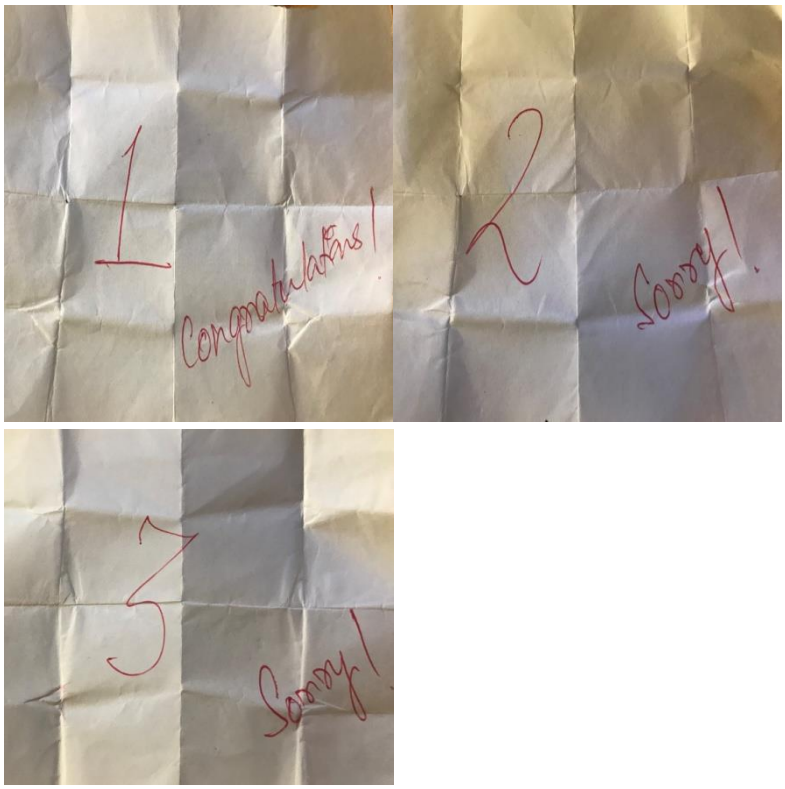
Picture 4
Sample sheet used for the experiment

					Eliminate following amount of				Total earnings
Players	Initial Endowment	Lottery (Invest)	Results	Total Gains	A	B	C	D	
A					Nil				
B						Nil			
C							Nil		
D								Nil	



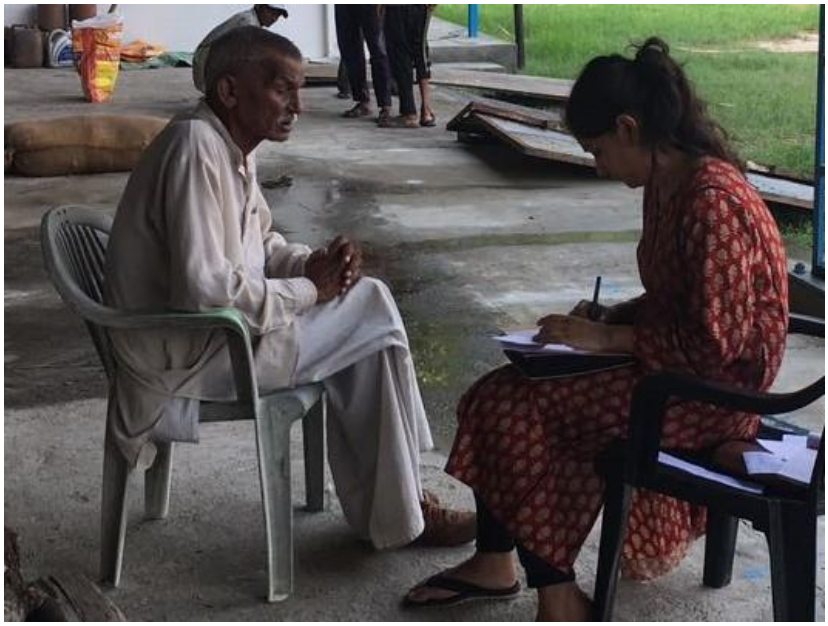
Source: Photo taken by the author

Picture 5
Chits used for the lottery results



Source: Photo taken by the author

Picture 6
Payment and questionnaire in anonymity



Source: Photo taken by research guide with the participants consent.

Annexure (C): The questionnaire

1. Sex
    - Male
    - Female
2. Age
    - 18-24
    - 25-34
    - 35-44
    - 45-54
    - 55 and above

3. Ability to read and write
    - Yes
    - No

4. Highest level of education
    - Less than primary
    - Primary (8th)
    - Secondary (12th)
    - College/University
    - Technical/Vocational training
    - Post graduation (Masters/P.HD)
    - Others
5. Employment status
    - Employed
    - Self Employed / Employer
    - Part time employed
    - Retired
    - Not employed, looking for work
    - Not employed, Not looking for work
6. Occupation
    - Service – Private
    - Service – Government
    - Business
    - Housewives/Homemaker
    - Daily wage labourers
    - Seasonal labourers
    - Finance/Bankers
    - Academic researchers/Researchers/Teachers
    - Contributing family workers
    - Others – Please mention

7. Marital Status
    - Single, never married
    - Married
    - Divorced/Widowed

8. Family Size
    - Two or less
    - More than two
    - Four or more

9. Religion
    - Hindu
    - Muslim
    - Christian
    - Catholic
    - Buddhist
    - Jainism
    - Sikhism
    - Atheist
    - Agnostic
    - Non-religious
    - Others (please specify)

Questionnaire on Experiment and Demonetization

1. Did you understand the experiment completely?

2. What motivated your choice in the last stage of the experiment?

3. What do you think motivated the choice of other players?

4. Do you support the demonetisation policy when it was first announced?

    - Yes
    - No
    - I have no opinion

If yes, please explain why (briefly)?

If no, please explain why (briefly)?

5. Do you still think (after 9 months) demonetisation was a good/useful policy?

    - Yes
    - No
    - I have no opinion

If yes, please explain why?

If not, please explain why?

6. Did you suffer any monetary loss due to demonetization?

    - Yes
    - No

7. Do you have any personal experience with demonetization affecting the black money of anyone you know?

    - Yes
    - No

8. Did you face inconvenience by standing in the ATM or bank queues?

    - Yes
    - No

To be filled by me.

- Location of the experiment
- Time
- Date
- Duration of the session
- Kind of groups involved

Annexure (D): Structure of the data

id	player	session	endowment	bet	earnings	burning	buring against*	nogift	otherplayer_nogift	interaction
S1A	1	1	200	50	550	0	B	0	1	0
S1A	1	1	200	50	550	0	C	0	0	0
S1A	1	1	200	50	550	0	D	0	1	0
S1B	2	1	150	100	250	0	A	1	0	0
S1B	2	1	150	100	250	0	C	1	0	0
S1B	2	1	150	100	250	0	D	1	1	1
S1C	3	1	300	100	700	0	A	0	0	0
S1C	3	1	300	100	700	0	B	0	1	0
S1C	3	1	300	100	700	0	D	0	1	0
S1D	4	1	100	50	150	0	A	1	0	0
S1D	4	1	100	50	150	0	B	1	1	1
S1D	4	1	100	50	150	0	C	1	0	0
S2A	1	2	300	200	400	0	B	0	1	0
S2A	1	2	300	200	400	0	C	0	0	0
S2A	1	2	300	200	400	0	D	0	1	0
S2B	2	2	200	100	300	0	A	1	0	0
S2B	2	2	200	100	300	0	C	1	0	0
S2B	2	2	200	100	300	0	D	1	1	1
S2C	3	2	100	100	300	0	A	0	0	0
S2C	3	2	100	100	300	0	B	0	1	0
S2C	3	2	100	100	300	0	D	0	1	0
S2D	4	2	150	50	100	300	A	1	0	0
S2D	4	2	150	50	100	50	B	1	1	1
S2D	4	2	150	50	100	50	C	1	0	0

* Column in red is added in this data structure to indicate the coding of variable otherplayer_nogift.

Note: The socio-economic and game related indicators in the data are excluded in this sample format.

Annexure (E): Data characteristics

Table A
Characteristics of data collection

Criteria	Description
Data	50 sessions and 4 participants in each session.
Period	July 20th to August 21st, 2017
Location	Urban: New Delhi, Gurugram, Noida – India
	Rural: Village - Shahpur Jamal, Biharipur, Hasanpur, Afzalgarh, Nadehi, KasampurGarhi, Barkatpur, Macchmar, SarkaraKhedi – Uttar Pradesh, India
Actors	(2) Male and Female
Days and Hour	Days – Both weekday and weekend (depending on the participants availability)
	Hour – Anytime between 08:00 am and 10:00 pm (depending on the participants availability)
Research Assistance	Rural: One research guide
	Urban: Two research assistance
Climate	Mostly hot and humid

Table B
Location details for the rural sample

Number of Sessions	Location	Extra Notes	Disturbance Level
6	Empty room of a fuel station – Location was in (less than) 5 minutes of walking distance from the nearby village.	The room was spacious with table chairs and a cot setting. Participants from the nearby villages were requested to come till that location.	Very less noise
4	Empty room of a different fuel station -Location was in (less than) 5-10 minutes of walking distance from the nearby village.	The room was a little cramped but allowed 4 chairs and a table setting.	Some noise
3	Garage like space	Used for storing oil. Had the space to accommodate 4 chairs and a small table.	Some noise. Mainly due to the gathering of people.
3	Sugar-Mill Compound	In one of the offices of the employees with table and chair setting.	No noise
2	School compound	Evening sessions when the school was closed.	No noise
2	Small open (balcony) space	On the floor (concrete)	Some noise. Mainly due to the gathering of few people.
2	Small rice-mill compound – Parking area.	In an open entry space with table and chairs setting.	No noise
2	Inside a (small) shop in the village	Lunch sessions when the shopkeeper was not expecting any customer. The space was a little cramped.	Very less noise
2	Dera – a very small farmhouse in between farms	Table and cot setting.	Some noise. Mainly due to the gathering of nearby farmers.

Source: Authors design

Table C
Location details for the urban sample

Number of Sessions	Location	Extra Notes	Disturbance Level
3	Living room of a participant's house.	Session with housewives. Table and chair setting.	No noise.
2	Basement of a house.	Little cramped setting but had space for two chairs and a small single narrow bed.	Little noise from the moving traffic.
2	Houses under construction.	Lunch sessions when the workers were on a break.	Very less noise. Mostly of the moving traffic outside.
3	Living room of a participant's house.	Session with housewives. Table and chair setting.	No noise.
2	Basement of a shop (storage area)	On the floor.	No noise.
2	Inside a shop	Lunch session when the shopkeeper was not expecting any customer.	Very less noise. Mainly of the moving traffic outside.
1	Guard-house	A little cramped space but allowed a setting of four chairs.	No noise.
1	Public Park	On the ground	Some noise. Mainly because of the gathering of people.
1	Balcony (of a house)	On the floor (concrete)	No noise.
2	Room (in a working employees hostel)	Chair and small bed setting.	No noise
1	Garden area	On the ground	Very less noise.
2	Office compound	In the open free space. On the ground setting	Less noise due to the closed complex.
2	In a room	Table and chair setting	No noise

Source: Authors design

Annexure (F): Econometric results

Table A
Average effect of treatment on burning (col. 2, 4, 6)

The Average Effect of Not Receiving Gift on the Burning			
	Results of Equation 1		
	(2)	(4)	(6)
No Gift	47.167***	0.159**	10.474***
	(8.427)	(0.054)	(2.118)
Location	6.667***	0.667***	15.732***
	(0.000)	(0.000)	(0.000)
1.session	-75.000***	-0.250***	-11.688***
	(0.000)	(0.000)	(0.000)
2.session	-41.667***	0.000	-2.661***
	(0.000)	(0.000)	(0.000)
3.session	16.667***	0.167***	5.051***
	(0.000)	(0.000)	(0.000)
4.session	-26.667***	0.417***	0.488***
	(0.000)	(0.000)	(0.000)
5.session	-12.500***	0.250***	4.518***
	(0.000)	(0.000)	(0.000)
6.session	-14.583***	0.500***	3.627***
	(0.000)	(0.000)	(0.000)
7.session	-30.833***	0.250***	-5.037***
	(0.000)	(0.000)	(0.000)
8.session	-30.833***	0.417***	5.812***
	(0.000)	(0.000)	(0.000)
13.session	-67.083***	0.000	-9.347***
	(0.000)	(0.000)	(0.000)

14.session	-32.083***	0.500***	4.540***
	(0.000)	(0.000)	(0.000)
15.session	-40.833***	0.250***	-2.224***
	(0.000)	(0.000)	(0.000)
17.session	25.000***	0.083***	4.337***
	(0.000)	(0.000)	(0.000)
18.session	-50.000***	0.000	-7.244***
	(0.000)	(0.000)	(0.000)
19.session	-8.333***	0.250***	10.534***
	(0.000)	(0.000)	(0.000)
20.session	-75.000***	-0.250***	-11.688***
	(0.000)	(0.000)	(0.000)
21.session	-41.667***	-0.083***	-1.966***
	(0.000)	(0.000)	(0.000)
22.session	-12.500***	0.167***	4.504***
	(0.000)	(0.000)	(0.000)
23.session	-66.667***	-0.167***	-9.605***
	(0.000)	(0.000)	(0.000)
24.session	0.000	0.000	0.000
	(.)	(.)	(.)
25.session	-31.667***	-0.500***	-6.230***
	(0.000)	(0.000)	(0.000)
26.session	-55.833***	-0.417***	-17.632***
	(0.000)	(0.000)	(0.000)
27.session	-81.667***	-0.917***	-27.421***
	(0.000)	(0.000)	(0.000)

28.session	-13.333***	-0.417***	-5.923***
	(0.000)	(0.000)	(0.000)
29.session	-50.000***	-0.583***	-17.148***
	(0.000)	(0.000)	(0.000)
30.session	-81.667***	-0.917***	-27.421***
	(0.000)	(0.000)	(0.000)
31.session	-81.667***	-0.917***	-27.421***
	(0.000)	(0.000)	(0.000)
32.session	75.417***	-0.417***	7.778***
	(0.000)	(0.000)	(0.000)
33.session	-77.500***	-0.833***	-26.379***
	(0.000)	(0.000)	(0.000)
34.session	-19.167***	-0.500***	-12.606***
	(0.000)	(0.000)	(0.000)
35.session	-56.667***	-0.750***	-21.518***
	(0.000)	(0.000)	(0.000)
36.session	Reference	Reference	Reference
37.session	19.167***	-0.417***	-4.504***
	(0.000)	(0.000)	(0.000)
38.session	-79.583***	-0.833***	-27.024***
	(0.000)	(0.000)	(0.000)
39.session	-26.667***	-0.417***	-15.825***
	(0.000)	(0.000)	(0.000)
40.session	-39.167***	-0.667***	-15.873***
	(0.000)	(0.000)	(0.000)

41.session	-27.500***	-0.500***	-13.393***
	(0.000)	(0.000)	(0.000)
42.session	-15.000***	-0.583***	-6.786***
	(0.000)	(0.000)	(0.000)
43.session	-73.333***	-0.833***	-25.337***
	(0.000)	(0.000)	(0.000)
44.session	-40.000***	-0.583***	-16.310***
	(0.000)	(0.000)	(0.000)
45.session	-31.667***	-0.667***	-11.448***
	(0.000)	(0.000)	(0.000)
46.session	18.333***	-0.583***	-3.810***
	(0.000)	(0.000)	(0.000)
47.session	18.333***	-0.167***	-3.016***
	(0.000)	(0.000)	(0.000)
48.session	-44.167***	-0.417***	-11.021***
	(0.000)	(0.000)	(0.000)
49.session	14.167***	-0.333***	-0.594***
	(0.000)	(0.000)	(0.000)
50.session	-23.333***	-0.667***	-10.754***
	(0.000)	(0.000)	(0.000)
_cons	44.750***	-0.496***	-9.281***
	(4.214)	(0.027)	(1.059)
N	540	540	540
R Squared	0.0693	0.2522	0.1975

Table B
Average effect of treatment on burning (col. 3, 5 and 7)

The Average Effect of Not Receiving Gift on the Burning			
	Results of Equation 1		
	(3)	(5)	(7)
No Gift	44.042***	0.178**	9.921***
	(9.861)	(0.058)	(2.352)
Gender[M=1/F=0]	-43.087	-0.261	-12.464
	(46.612)	(0.298)	(12.911)
Literacy [Y=1/N=0]	17.634	0.041	2.088
	(46.715)	(0.185)	(11.956)
Age			
18-24	Reference	Reference	Reference
25-34	48.336	0.282	13.609*
	(25.215)	(0.143)	(6.639)
35-44	64.158	0.280	12.897
	(33.347)	(0.163)	(8.291)
45-54	46.967	0.170	11.673
	(33.939)	(0.189)	(9.259)
55 and above	94.204*	0.498*	27.909*
	(38.066)	(0.216)	(11.352)
Education			
Less than Primary	Reference	Reference	Reference
Primary	-22.452	-0.070	-9.754
	(24.453)	(0.151)	(7.544)
Secondary	-44.089	-0.198	-15.932*
	(22.720)	(0.116)	(6.407)
College	-42.079	-0.165	-16.299*
	(24.494)	(0.154)	(7.596)

Post Graduation	-64.280	-0.266	-20.967*
	(37.363)	(0.208)	(10.092)
Others	-2.740	0.220	-1.309
	(54.739)	(0.343)	(14.823)
Employment			
Full time employed	Reference	Reference	Reference
Self Employed	52.444	0.397	16.711
	(47.234)	(0.252)	(12.341)
Part time employed	-44.451	-0.176	-13.520
	(50.183)	(0.202)	(12.470)
Retired	-31.013	-0.224	-11.344
	(39.726)	(0.186)	(8.783)
Not Employed	-73.969	-0.136	-14.557
	(62.101)	(0.300)	(15.136)
Occupation			
Housewives	Reference	Reference	Reference
Daily wage Labourer	16.093	-0.405	1.200
	(86.004)	(0.373)	(20.944)
Seasonal Labourer	32.665	-0.389	0.908
	(97.758)	(0.451)	(25.213)
Service-Private	15.392	-0.334	1.543
	(101.830)	(0.396)	(21.898)
Business	-63.297	-0.743	-32.671
	(90.379)	(0.452)	(21.725)
Contributing family workers	5.433	-0.195	-6.890
	(113.661)	(0.492)	(25.961)
Others	8.933	-0.363	-4.277
	(93.527)	(0.349)	(19.760)

Marital Status			
Single	Reference	Reference	Reference
Married	-37.161	-0.054	-12.417
	(24.650)	(0.152)	(7.505)
Divorced	-83.460**	-0.276	-30.345**
	(30.665)	(0.187)	(9.466)
Family Size			
Two or less	Reference	Reference	Reference
More than two	-0.313	-0.069	1.140
	(26.862)	(0.196)	(6.702)
Four or more	-3.545	-0.087	0.451
	(28.475)	(0.210)	(7.065)
Religion			
Hindu	Reference	Reference	Reference
Muslim	16.694	0.256	3.896
	(23.740)	(0.166)	(6.753)
Sikhism	17.228	0.272	5.676
	(30.651)	(0.152)	(6.585)
Others	-34.111	0.175	-3.059
	(19.626)	(0.135)	(5.545)
Location	52.323	0.657	22.016
	(78.492)	(0.400)	(19.184)
1.session	-28.485	-0.772*	-12.750
	(76.237)	(0.370)	(17.355)
2.session	6.742	-0.426	-0.223
	(77.977)	(0.390)	(17.575)

3.session	70.822	-0.295	9.844
	(77.697)	(0.371)	(16.934)
4.session	-4.880	-0.381	-8.341
	(80.185)	(0.445)	(18.603)
5.session	-56.410	0.139	-10.416
	(56.057)	(0.170)	(8.653)
6.session	-37.721	0.474**	-5.880
	(57.881)	(0.165)	(7.850)
7.session	-36.523	0.304	-14.106
	(69.772)	(0.199)	(10.363)
8.session	-42.070	0.528*	1.523
	(60.300)	(0.218)	(9.527)
13.session	-91.536*	-0.250	-18.284
	(39.961)	(0.273)	(10.451)
14.session	-26.554*	0.542***	6.707
	(12.852)	(0.076)	(3.421)
15.session	-38.452**	0.297***	0.293
	(12.909)	(0.078)	(3.373)
17.session	70.181	-0.393	6.537
	(73.469)	(0.352)	(15.676)
18.session	-36.723	-0.045	8.244
	(51.865)	(0.302)	(10.543)
19.session	-29.304	0.124	4.248
	(20.586)	(0.132)	(6.282)
20.session	-71.004	-0.268	1.808
	(52.691)	(0.294)	(10.583)

21.session	-34.945	-0.130	10.382
	(50.529)	(0.279)	(9.593)
22.session	8.086	0.168	20.221*
	(46.009)	(0.264)	(8.156)
23.session	-107.168**	-0.306	-26.448**
	(33.423)	(0.228)	(9.590)
24.session	Reference	Reference	Reference
25.session	-110.283	-0.673	-21.765
	(90.362)	(0.441)	(21.950)
26.session	-66.570	-0.914*	-27.750
	(89.659)	(0.367)	(18.556)
27.session	-165.675*	-1.202**	-45.225*
	(80.440)	(0.441)	(20.333)
28.session	-9.249	-0.203	-4.219
	(91.477)	(0.437)	(20.565)
29.session	-105.761	-0.788	-16.381
	(99.971)	(0.512)	(22.862)
30.session	-134.469	-0.974*	-32.041
	(86.780)	(0.444)	(20.969)
			0.134
31.session	-81.187	-1.427***	-36.279*
	(78.532)	(0.314)	(15.439)
32.session	47.428	-0.380	2.707
	(61.948)	(0.344)	(16.081)
33.session	-119.365	-0.829*	-32.162
	(72.665)	(0.390)	(18.234)
34.session	-73.969	-0.523	-23.115
	(91.250)	(0.390)	(20.029)

35.session	-119.385	-0.841	-32.213
	(83.510)	(0.444)	(20.567)
36.session	Reference	Reference	Reference
37.session	-110.567	-1.029*	-32.811
	(79.097)	(0.451)	(19.883)
38.session	-118.844	-0.762	-31.748
	(76.118)	(0.396)	(18.683)
39.session	-85.084	-0.411	-23.367
	(83.926)	(0.436)	(20.418)
40.session	-99.247	-0.966*	-19.349
	(84.091)	(0.466)	(19.443)
41.session	-115.564	-0.783	-32.066
	(84.231)	(0.439)	(20.878)
42.session	-59.310	-0.445	-15.797
	(93.844)	(0.417)	(20.882)
43.session	-130.922	-0.854*	-34.885
	(83.103)	(0.420)	(20.262)
44.session	-100.074	-0.638	-28.411
	(85.005)	(0.378)	(18.407)
45.session	-124.555	-1.016*	-26.833
	(83.807)	(0.448)	(20.483)
46.session	-65.288	-0.791	-16.333
	(90.098)	(0.411)	(20.265)
47.session	-35.274	-0.724	-26.553
	(85.476)	(0.360)	(17.657)
48.session	-107.760	-0.476	-24.277
	(80.086)	(0.444)	(20.253)

49.session	-29.596	-0.189	-0.620
	(105.694)	(0.501)	(23.264)
50.session	-145.318	-1.126*	-37.247
	(85.245)	(0.467)	(21.514)
_cons	41.998	0.104	9.552
	(124.311)	(0.703)	(28.739)
N	540	540	540
R Squared	0.2911	0.3345	0.288

Table C
Effect of interactions on burning (col. 2, 4 and 6)

The Average Effect of Interactions between the Players on the Burning
Equation 2 estimates

	Column (2)	Column (4)	Column (6)
No Gift [1/0]	46.361**	0.083	10.364**
	(13.978)	(0.073)	(3.167)
Other player - No Gift [1/0]	-38.639***	-0.261***	-5.769*
	(8.408)	(0.048)	(2.382)
No Gift # Other player - No Gift	-36.222*	-0.033	-5.440
	(15.149)	(0.082)	(4.513)
Location	6.667***	0.667***	15.732***
	(0.000)	(0.000)	(0.000)
1.session	-75.000***	-0.250***	-11.688***
	(0.000)	(0.000)	(0.000)
2.session	-41.667***	0.000	-2.661***
	(0.000)	(0.000)	(0.000)
3.session	16.667***	0.167***	5.051***
	(0.000)	(0.000)	(0.000)
4.session	-26.667***	0.417***	0.488***
	(0.000)	(0.000)	(0.000)
5.session	-12.500***	0.250***	4.518***
	(0.000)	(0.000)	(0.000)
6.session	-14.583***	0.500***	3.627***
	(0.000)	(0.000)	(0.000)
7.session	-30.833***	0.250***	-5.037***
	(0.000)	(0.000)	(0.000)
8.session	-30.833***	0.417***	5.812***
	(0.000)	(0.000)	(0.000)

13.session	-67.083***	0.000	-9.347***
	(0.000)	(0.000)	(0.000)
14.session	-32.083***	0.500***	4.540***
	(0.000)	(0.000)	(0.000)
15.session	-40.833***	0.250***	-2.224***
	(0.000)	(0.000)	(0.000)
17.session	25.000***	0.083***	4.337***
	(0.000)	(0.000)	(0.000)
18.session	-50.000***	0.000	-7.244***
	(0.000)	(0.000)	(0.000)
19.session	-8.333***	0.250***	10.534***
	(0.000)	(0.000)	(0.000)
20.session	-75.000***	-0.250***	-11.688***
	(0.000)	(0.000)	(0.000)
21.session	-41.667***	-0.083***	-1.966***
	(0.000)	(0.000)	(0.000)
22.session	-12.500***	0.167***	4.504***
	(0.000)	(0.000)	(0.000)
23.session	-66.667***	-0.167***	-9.605***
	(0.000)	(0.000)	(0.000)
24.session	0.000	0.000	0.000
	(.)	(.)	(.)
25.session	-31.667***	-0.500***	-6.230***
	(0.000)	(0.000)	(0.000)
26.session	-55.833***	-0.417***	-17.632***
	(0.000)	(0.000)	(0.000)
27.session	-81.667***	-0.917***	-27.421***
	(0.000)	(0.000)	(0.000)

28.session	-13.333***	-0.417***	-5.923***
	(0.000)	(0.000)	(0.000)
29.session	-50.000***	-0.583***	-17.148***
	(0.000)	(0.000)	(0.000)
30.session	-81.667***	-0.917***	-27.421***
	(0.000)	(0.000)	(0.000)
31.session	-81.667***	-0.917***	-27.421***
	(0.000)	(0.000)	(0.000)
32.session	75.417***	-0.417***	7.778***
	(0.000)	(0.000)	(0.000)
33.session	-77.500***	-0.833***	-26.379***
	(0.000)	(0.000)	(0.000)
34.session	-19.167***	-0.500***	-12.606***
	(0.000)	(0.000)	(0.000)
35.session	-56.667***	-0.750***	-21.518***
	(0.000)	(0.000)	(0.000)
36.session	Reference	Reference	Reference
37.session	19.167***	-0.417***	-4.504***
	(0.000)	(0.000)	(0.000)
38.session	-79.583***	-0.833***	-27.024***
	(0.000)	(0.000)	(0.000)
39.session	-26.667***	-0.417***	-15.825***
	(0.000)	(0.000)	(0.000)
40.session	-39.167***	-0.667***	-15.873***
	(0.000)	(0.000)	(0.000)
41.session	-27.500***	-0.500***	-13.393***
	(0.000)	(0.000)	(0.000)

42.session	-15.000***	-0.583***	-6.786***
	(0.000)	(0.000)	(0.000)
43.session	-73.333***	-0.833***	-25.337***
	(0.000)	(0.000)	(0.000)
44.session	-40.000***	-0.583***	-16.310***
	(0.000)	(0.000)	(0.000)
45.session	-31.667***	-0.667***	-11.448***
	(0.000)	(0.000)	(0.000)
46.session	18.333***	-0.583***	-3.810***
	(0.000)	(0.000)	(0.000)
47.session	18.333***	-0.167***	-3.016***
	(0.000)	(0.000)	(0.000)
48.session	-44.167***	-0.417***	-11.021***
	(0.000)	(0.000)	(0.000)
49.session	14.167***	-0.333***	-0.594***
	(0.000)	(0.000)	(0.000)
50.session	-23.333***	-0.667***	-10.754***
	(0.000)	(0.000)	(0.000)
_cons	70.509***	-0.322***	-5.435**
	(7.434)	(0.042)	(1.728)
N	540.000	540.000	540.000
R Squared	0.3169	0.3268	0.2317

Table D
Effect of interactions on burning (col. 3, 5 and 7)

The Average Effect of Interactions between the Players on the Burning			
Equation 2 estimates	Column(3)	Column (5)	Column (7)
No Gift [1/0]	43.237**	0.102	9.811**
	(15.287)	(0.077)	(3.528)
Other player - No Gift [1/0]	-38.639***	-0.261***	-5.769*
	(8.658)	(0.050)	(2.453)
No Gift # Other player - No Gift	-36.222*	-0.033	-5.440
	(15.599)	(0.084)	(4.647)
Gender[M=1/F=0]	-43.087	-0.261	-12.464
	(46.712)	(0.299)	(12.939)
Literacy [Y=1/N=0]	17.634	0.041	2.088
	(46.816)	(0.186)	(11.982)
Age			
18-24	Reference	Reference	Reference
25-34	48.336	0.282	13.609*
	(25.270)	(0.144)	(6.653)
35-44	64.158	0.280	12.897
	(33.419)	(0.163)	(8.309)
45-54	46.967	0.170	11.673
	(34.012)	(0.190)	(9.279)
55 and above	94.204*	0.498*	27.909*
	(38.148)	(0.217)	(11.377)
Education			
Less than Primary	Reference	Reference	Reference
Primary	-22.452	-0.070	-9.754
	(24.506)	(0.151)	(7.560)

Secondary	-44.089	-0.198	-15.932*
	(22.769)	(0.117)	(6.421)
College	-42.079	-0.165	-16.299*
	(24.546)	(0.154)	(7.612)
Post Graduation	-64.280	-0.266	-20.967*
	(37.443)	(0.209)	(10.114)
Others	-2.740	0.220	-1.309
	(54.857)	(0.343)	(14.855)
Employment			
Full time employed	Reference	Reference	Reference
Self Employed	52.444	0.397	16.711
	(47.336)	(0.253)	(12.368)
Part time employed	-44.451	-0.176	-13.520
	(50.291)	(0.202)	(12.497)
Retired	-31.013	-0.224	-11.344
	(39.811)	(0.186)	(8.802)
Not Employed	-73.969	-0.136	-14.557
	(62.234)	(0.301)	(15.168)
Occupation			
Housewives	Reference	Reference	Reference
Daily wage Labourer	16.093	-0.405	1.200
	(86.190)	(0.373)	(20.989)
Seasonal Labourer	32.665	-0.389	0.908
	(97.968)	(0.452)	(25.267)
Service-Private	15.392	-0.334	1.543
	(102.049)	(0.397)	(21.945)

Business	-63.297	-0.743	-32.671
	(90.573)	(0.453)	(21.772)
Contributing family workers	5.433	-0.195	-6.890
	(113.906)	(0.493)	(26.017)
Others	8.933	-0.363	-4.277
	(93.728)	(0.350)	(19.803)
Marital Status			
Single	Reference	Reference	Reference
Married	-37.161	-0.054	-12.417
	(24.703)	(0.152)	(7.521)
Divorced	-83.460**	-0.276	-30.345**
	(30.731)	(0.188)	(9.486)
Family Size			
Two or less	Reference	Reference	Reference
More than two	-0.313	-0.069	1.140
	(26.919)	(0.196)	(6.717)
Four or more	-3.545	-0.087	0.451
	(28.536)	(0.210)	(7.080)
Religion			
Hindu	Reference	Reference	Reference
Muslim	16.694	0.256	3.896
	(23.791)	(0.166)	(6.767)
Sikhism	17.228	0.272	5.676
	(30.717)	(0.152)	(6.599)
Others	-34.111	0.175	-3.059
	(19.668)	(0.135)	(5.557)
Location	52.323	0.657	22.016

	(78.661)	(0.401)	(19.225)
1.session	-28.485	-0.772*	-12.750
	(76.401)	(0.371)	(17.393)
2.session	6.742	-0.426	-0.223
	(78.145)	(0.391)	(17.613)
3.session	70.822	-0.295	9.844
	(77.865)	(0.371)	(16.970)
4.session	-4.880	-0.381	-8.341
	(80.358)	(0.446)	(18.643)
5.session	-56.410	0.139	-10.416
	(56.178)	(0.170)	(8.672)
6.session	-37.721	0.474**	-5.880
	(58.006)	(0.165)	(7.867)
7.session	-36.523	0.304	-14.106
	(69.922)	(0.200)	(10.385)
8.session	-42.070	0.528*	1.523
	(60.430)	(0.218)	(9.548)
13.session	-91.536*	-0.250	-18.284
	(40.047)	(0.273)	(10.474)
14.session	-26.554*	0.542***	6.707
	(12.879)	(0.076)	(3.428)
15.session	-38.452**	0.297***	0.293
	(12.937)	(0.078)	(3.380)
17.session	70.181	-0.393	6.537
	(73.627)	(0.353)	(15.709)
18.session	-36.723	-0.045	8.244
	(51.977)	(0.303)	(10.565)

19.session	-29.304	0.124	4.248
	(20.630)	(0.133)	(6.296)
20.session	-71.004	-0.268	1.808
	(52.804)	(0.294)	(10.606)
21.session	-34.945	-0.130	10.382
	(50.638)	(0.280)	(9.614)
22.session	8.086	0.168	20.221*
	(46.108)	(0.264)	(8.174)
23.session	-107.168**	-0.306	-26.448**
	(33.495)	(0.229)	(9.611)
24.session	0.000	0.000	0.000
	(.)	(.)	(.)
	.	.	.
25.session	-110.283	-0.673	-21.765
	(90.557)	(0.442)	(21.998)
26.session	-66.570	-0.914*	-27.750
	(89.852)	(0.368)	(18.596)
27.session	-165.675*	-1.202**	-45.225*
	(80.613)	(0.441)	(20.376)
28.session	-9.249	-0.203	-4.219
	(91.674)	(0.438)	(20.610)
29.session	-105.761	-0.788	-16.381
	(100.186)	(0.513)	(22.911)
30.session	-134.469	-0.974*	-32.041
	(86.967)	(0.445)	(21.015)
31.session	-81.187	-1.427***	-36.279*
	(78.701)	(0.314)	(15.472)

32.session	47.428	-0.380	2.707
	(62.081)	(0.345)	(16.116)
33.session	-119.365	-0.829*	-32.162
	(72.821)	(0.391)	(18.273)
34.session	-73.969	-0.523	-23.115
	(91.447)	(0.391)	(20.072)
35.session	-119.385	-0.841	-32.213
	(83.690)	(0.445)	(20.611)
36.session	Reference	Reference	Reference
37.session	-110.567	-1.029*	-32.811
	(79.268)	(0.452)	(19.926)
38.session	-118.844	-0.762	-31.748
	(76.282)	(0.396)	(18.723)
39.session	-85.084	-0.411	-23.367
	(84.106)	(0.436)	(20.462)
40.session	-99.247	-0.966*	-19.349
	(84.272)	(0.467)	(19.485)
41.session	-115.564	-0.783	-32.066
	(84.412)	(0.440)	(20.923)
42.session	-59.310	-0.445	-15.797
	(94.046)	(0.418)	(20.927)
43.session	-130.922	-0.854*	-34.885
	(83.282)	(0.421)	(20.305)
44.session	-100.074	-0.638	-28.411
	(85.188)	(0.378)	(18.447)
45.session	-124.555	-1.016*	-26.833
	(83.987)	(0.449)	(20.527)

46.session	-65.288	-0.791	-16.333
	(90.292)	(0.412)	(20.309)
47.session	-35.274	-0.724	-26.553
	(85.660)	(0.361)	(17.695)
48.session	-107.760	-0.476	-24.277
	(80.258)	(0.445)	(20.297)
49.session	-29.596	-0.189	-0.620
	(105.922)	(0.502)	(23.314)
50.session	-145.318	-1.126*	-37.247
	(85.429)	(0.468)	(21.560)
_cons	67.757	0.278	13.398
	(126.548)	(0.711)	(29.162)
N	540.000	540.000	540.000
R Squared	0.3893	0.4091	0.3230

Source: data gathered by author