Comparing Individual and Altruistic Subsidies for Health Technology Take Up

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Abstract

Evidence from both lab and field experiments supports the theory that individuals have social preferences that incline them towards altruism in environments involving giving or sharing such as charitable contribution drives or dictator games. We test whether these social preferences can be harnessed towards improving take up of preventative health care products by designing an altruistic subsidy - a subsidy that can be shared with an anonymous partner and is only transferred to the partner if the subject commits to purchase. We find no significant difference in the probability of purchase between subjects randomized into shared subsidies and those randomized into individual subsides, in spite of subjects potentially receiving lower effective subsides through sharing. Consistent with the literature on sorting in dictator games, we find that more subjects share non-zero amounts of their subsidy when they are exogenously assigned to a shared subsidy, even though they have the option of sharing zero, relative to when subjects can choose whether to be assigned to individual versus shared subsidies. This is consistent with the presence of 'reluctant sharers' who would choose to avoid sharing environments but will share if placed in such an environment. However, subjects who self-select into sharing are significantly more likely to share a larger amount of their subsidy than exogenously assigned sharers and are more likely to commit to purchasing the product. We also find that priming subjects with information on the externalities of individual health behaviors does not result in more subjects sharing but does result in more generous sharing and higher probability of purchase, consistent with subjects not changing their preferences regarding whether to share but coordinating on a higher sharing equilibrium conditional on sharing non zero amounts.

1 Introduction

Evidence of individual proclivity for prosocial behavior abounds in the real world, with large proportions of society contributing time and resources in the service of charitable causes or public goods. In addition, the literature on team incentives indicates that individuals will expend greater effort for team payoffs relative to individual payoffs, placing nearly as much or more value on rewards to others as to themselves (Babcock et al., 2012). In a laboratory setting, the tendency for pro-social behavior has been demonstrated by way of anonymous, one-shot dictator games where one subject is given the decision to allocate an endowment between themselves and another individual. A purely rational, self-interested outcome would entail zero sharing however this result is consistently refuted in experimental settings, with a significant proportion of individuals choosing to share their endowments with their matched partners.

However, in analyzing the motivations for these social preferences, researchers have found evidence that not all voluntary acts of sharing are purely utility improving as some individuals have a tendency to avoid sharing when given a costless option of exiting from sharing environments (Lazear et al., 2012; Dana et al., 2006; Della Vigna et al. 2012; Andreoni et al., 2011). This is an interesting result insofar as when exogenously assigned to a sharing environment, sharing nothing is equivalent in terms of monetary payoffs with opting out of a sharing environment when given the opportunity to sort. However, on average, individuals are less likely to share nothing but more likely to opt out of sharing environments, suggesting that there are psychic costs to being placed in sharing environments and sharing nothing, which precipitate higher sharing but also create incentives to exit sharing environments when given the opportunity. This phenomenon creates a departure between the results that we would encounter in a controlled lab or field environment and a real-world sharing equilibrium where individuals have the ability to select in and out of environments.

We explore these features of individual behavior in a unique field setting involving altruistic subsidies for drinking water treatment products - subsidies that can be shared with members of your peer group - in communities experiencing a collective public health problem - high level of drinking water contamination. Lack of investment in low cost preventative health care technologies is one of the leading causes of excess infant mortality in developing countries, in spite of the demonstrable benefits of these technologies, suggesting the need for subsidies to improve individual take up. In addition, the burden of communicable diseases is very high in these settings, owing to poor sanitation and waste disposal facilities, creating spillover benefits and costs from individual preventative behavior and creating a situation requiring a coordinated push towards higher adoption at a community level. This creates an ideal setting for developing incentive mechanisms that harness social preferences to solve public health problems accruing at the societal level.

While monetary incentives are a tried and tested means of encouraging healthy behaviors, these incentives have typically been directed towards individuals and have failed to incorporate the social nature of public health behaviors or to harness the power of social preferences. Our experiment's

purpose is to evaluate the potential for altruistic subsidies relative to individual subsidies in improving the take up of drinking water treatment products in communities that face high levels of drinking water contamination. An altruistic subsidy, in our context, ties an individual's take up decision to their altruism which can be exercised by giving away a portion of their subsidy to their anonymous partner. Hence, while sharing a fixed subsidy may lower an individual's willingness to adopt a particular product by raising its effective price, it may also raise an individual's willingness to adopt owing to pro-social considerations whereby an individual's take up decision has repercussion on not only their own subsidy but also the subsidy that their partner receives. Therefore, how shared subsidies perform relative to individual subsidies is an empirical question similar to the question of altruistic/cooperative rewards versus individual rewards. The existing evidence on individual's exerting greater effort for teams, and exercising pro-social sharing behavior, would suggest that these altruistic subsidies could increase individual take up at a smaller cost than individual subsidies, owing to pro-social preferences.

In addition, we would like to assess the willingness of individuals to share altruistic subsidies for the take up of drinking water treatment products. However, in recognizing that allowing individuals to sort in and out of sharing environments is more representative of real world behavior, we compare outcomes between exogenous assignment to sharing and endogenous selection into sharing environments. Importantly, we would like to assess whether imposed sharing deviates from self-selected sharing and whether controlled experimental settings will deviate from self-select outcomes if joint subsidies are employed as a policy tool to encourage greater takeup of health technologies.

We find that exogenous assignment to shared subsidies results in a statistically insignificant lowering of a subject's probability of purchase relative to individual subsidies. Given evidence for positive sharing overall, the subjects in this subgroup receive lower subsidies and face higher effective prices as a result of sharing their subsidies. Therefore an insignificantly lower probability of purchase indicates the presence of social preferences that are serving as a counterweight for the lower purchase probability owing to lower subsidies and higher prices of products. This also implies that we can get 'stretch the buck' of health subsidies by employing an altruistic subsidy, since the lower retained subsidy does not adversely affect take up while the shared portion of the subsidy can increase take up for the recipient. Though in our current design, we do not analyze recipient behavior, given price responsiveness of agents an increase in take up from receiving a subsidy can be reasonably assumed on the part of the recipient.

However, when subjects are permitted to choose their sharing environment and opt into either shared subsidies or individual subsidies, the average probability of purchase is statistically significantly lower than with individual subsidies. Hence, with endogenous sorting, shared subsidies lower the probability of purchase relative to individual subsidies. The departure of results between exogenous sharing and endogenous sharing indicates the presence of 'reluctant sharers' who increase their probability of purchase conditional on being placed in sharing environments but would

avoid these environments when allowed to sort out of them. This result implies, therefore, that harnessing social preferences will only be effective in scenarios involving groups or teams with fixed or mandatory membership but would lapse in the presence of voluntary membership.

We further assess whether the decision to share is influenced by priming regarding the externalities of individual investment in preventative health care. We use the externalities frame to create an environment where the social optimum deviates from the purely individual (selfish) equilibrium, creating demand for mechanisms that facilitate coordination, and assess whether such framing will affect the sharing equilibrium. We find that externalities priming does not affect the number of sharers overall, but does impact the amount of sharing insofar as subjects are more likely to share more generously when primed with externalities.

2 Theoretical Motivation

A slew of experiments involving dictator games have revealed that when asked to share an endowment while a significant proportion of subject share nothing this is rarely the choice made by a majority of subjects (Engel, 2011). Given that an outcome involving positive sharing deviates from a simple payoff maximizing utility formulation, it speaks to individuals deriving some measure of social utility or 'warm glow' (Andreoni, 1990) from their sharing behavior.

The literature on group incentives points towards another outcome driven by pro-social motivations, namely the desire to perform better as part of a team versus as an individual. Hence, the small body of empirical research on team incentives finds compelling evidence that individuals expend greater effort when their performance affects the rewards of their peers than when it affects only their own payoffs. Babcock et al. (2015) find that individuals value a marginal dollar of reward for their partners from two thirds to twice as much as an additional dollar of reward for themselves. Similarly, Schofield et al. (2015) find that both purely altruistic and cooperative incentive schemes perform just as well as individual incentive schemes in the short run in an experiment designed to encourage the elderly to complete more mental exercises, where altruistic incentives are individual rewards which are tied not to own performance but the performance of your partner and cooperative incentives are tied to the performance of both partners jointly. Moreover, they find that altruistic and cooperative incentive schemes outperformed individual incentives in the long run, leading to greater persistence in behavior past the receipt of the incentives.

However, the literature on dictator games has also found that when individuals are placed in environments where they can select out of the decision to share, they are less likely to share overall. Hence, Lazear et al. (2012) find that on average 33% of individuals in their sample are 'reluctant sharers' who will share when placed in the environment of a dictator game but will opt to avoid a dictator game environment in favor of keeping their endowment for themselves when provided with costless exit. This also results in the overall amount shared falling by more than

50% when people are allowed to sort out of sharing environments.

Dana et al. (2006) have similarly found that a third of their sample prefers to avoid a dictator game with an endowment of $10 in favor of receiving a private payoff of $9, suggesting that such individuals are willing to incur a cost to avoid sharing environments. Lazear et al. (2012) find that subsidizing re-entry into sharing primarily attracts those who are otherwise inclined to share the least, and that probability of reentry is inversely related to the amount shared among reluctant sharers. Broberg et al. (2007) use a BDM auction to estimate the willingness to pay for the opportunity to exit a dictator game and find that the mean reservation price is 82% of the endowment.

Such avoidance has also been witnessed in field experiments on charitable giving. Della Vigna et al. (2012) conduct a fund raising field experiment where some households are notified of the exact time of solicitation and others are allowed to request beforehand that they not be disturbed. These avoidance options lower the probability of people opening their door by 9% and 23% respectively and lower overall donations in the latter case by 28-40%. Similarly, Andreoni et al. (2011) find in a fund raising campaign for Salvation Army that while verbal solicitation significantly increases giving it also increases avoidance. They conclude that the tendency to contribute to charity is motivated by the emotional response it induces in givers and avoidance is practiced against empathetic stimuli that would incline a person to give. Dana et al. (2006) perceive the same behavior as arising from a desire to not violate others' expectations.

The importance of psychological or belief-oriented cues in eliciting sharing is reinforced by experimental literature that highlights the impact of social framing in influencing choice. Hence, for instance, Kay and Ross (2003) show that priming prisoner's dilemma games with cooperative labels (Community game vs Wall Street game) results in higher degrees of cooperation. Ellingsen et al. (2012) further demonstrate that these framing effects primarily derive from their ability to allow for coordination in games with multiple equilibria. However, as Dreber et al. (2013) discover, framing is ineffective in a pure dictator game, which is consistent with the theory that framing does not affect stable preferences but instead affects their beliefs and serves as a coordination device in games that require coordination on a socially optimal equilibrium, such as the prisoner's dilemma.

The overall conclusion from the current literatures is that there is strong evidence for individuals behaving in a pro-social manner, whether by way of responding to incentives that reward others (altruistic rewards) or by way of engaging in acts of altruism such as charitable giving. Moreover, individual behavior is susceptible to framing effects which can allow individuals to coordinate on socially beneficial outcomes that may not be achievable in the absence of coordination. However, we also find that a significant proportion of individuals in society are reluctant altruists insofar as they share individual rewards or engage in acts of altruism conditional on being placed in sharing environments or when directly solicited but are willing to pay a cost to avoid these environments. Additionally, framing appears to not alter underlying preferences but merely assist in coordination.

3 Experimental Design

We use the setting of community group meetings in rural Pakistan where subjects are randomly assigned to individual subsidies, or one of two types of altruistic subsidies tied to the purchase of a one month supply of water treatment products: exogenously imposed shared subsidies and endogenously selected shared subsidies. The subsidies are directed insofar as they can only be applied to the purchase of the product and have no cash value outside of the experiment. Individual demand for the product is assessed using a Take It Or Leave It (TIOLI) mechanism where subjects draw a random price and are asked whether they would be willing to pay this price for the product. If they accept the TIOLI offer price and commit to the purchase, their effective purchase price is the randomized offer price minus any subsidies.

Subjects assigned to individual subsidies are provided with a flat subsidy associated with their purchase of the water treatment products. This subsidy is equivalent to just under 40% of the median offer price, but roughly 15% of the market price of the product. If the subjects decide to accept their TIOLI randomized offer price, their effective price is the random price minus the flat subsidy. If they choose not to purchase, they receive neither the product nor the subsidy.

Subjects assigned to exogenously imposed shared subsides (exogenous sharing) are provided with the same flat subsidy as the subjects receiving individual subsidies (Rs. 40). However, they are instructed that they have been matched with another anonymous member of their meeting group. They can share any amount of the subsidy with their anonymous partner, including zero. They first make a choice regarding how much they would like to share with their partner. Thereafter, they draw a random price as part of the TIOLI mechanism and choose whether they would purchase the product at the price drawn.

In this design every subject is both a dictator and a receiver, insofar as if they are in randomized into shared subsidies they will not only retain a portion of their subsidy but will also have a probability of receiving a portion of their partner's subsidy. Therefore, their effective purchase price is the randomized offer price minus they portion of their own subsidy that they retained minus the portion of their partner's subsidy that was shared with them. But, when making the decision to accept or reject the TIOLI offer price, subjects remain unaware of how much subsidy has been shared with them by their partner and this information is only revealed at the end of the experiment. It cannot therefore affect their own purchase decision. Therefore, the outcome of interest in our design is not the behavior as a recipient but the behavior as a sharer.

In addition, in a shared subsidy context, if the subject refuses their TIOLI offer and chooses not to purchase the product, not only do they fail to utilize their own subsidy but the subsidy portion that they have chosen to share with their anonymous partner is also wasted. Therefore, your partner does not receive any benefits from your sharing if you do not also choose to purchase the product.

Subjects assigned to endogenous sharing are told that they can choose an individual subsidy or

self-select into a shared subsidy. If they select a shared subsidy, they will be matched with an anonymous partner and they can choose to transfer a portion of their subsidy to their partner. As in the case with exogenous sharing, they draw a random offer price but the effective purchase price is the random draw minus the portion of the subsidy they retain and any potential subsidy that is transferred to them by their anonymous partners. The only difference between the endogenous sharing group and exogenous sharing group is the ability of endogenous sharers to opt out of shared subsidies altogether in favor of individual subsidies.

Appendix Table A9 evaluates randomization balance between the individuals assigned to individual subsidies, exogenous sharing and endogenous sharing. We find insignificant differences across a number of demographic characteristics. There appear to be statistically significant differences in the number of household members between groups, but the mean differences in these numbers is negligible in magnitude. Similarly, while there appear to be difference in between the randomization groups in the contamination at source, these are also of a negligible magnitude. Overall, we are therefore assured that randomization was effective insofar as there are no systematic differences between the treatment arm that could spuriously drive our results.

In addition, villages are randomized into whether they are provided with the externalities priming message. Villages that are randomized into the externalities treatment receive information on how the nature of water borne disease transmission creates strong spillover costs on the neighborhood from individual incidences of illness. As a result, individual failure to adopt preventative health care products has repercussions not just on individual health but also on health outcomes at the community level. This randomization is conducted at the village level to prevent information contamination between community groups in the same village.

4 Results

4.1 Descriptive Statistics

Our sample consists of 2701 individuals in 208 meeting groups drawn from 66 villages. The sample is roughly evenly divided between individuals randomized into individual subsidies, exogenous sharing and endogenous sharing. As indicated in Table 3.1, subjects assigned individual subsidies receive a flat subsidy of Rs. 40, equivalent to nearly 40% of the median randomized price, where the price is distributed uniformly over the interval Rs. 60- Rs. 150. The mean amount of the subsidy retained by exogenous sharers is Rs. 28 (median Rs. 30), suggesting positive amounts shared over a significant proportion of the sample. In the subsample with endogenous sharing, the mean amount of subsidy retained is Rs. 32 (median 40), suggesting lower sharing overall and by a smaller proportion of this subsample. However, conditional on self-selecting into sharing their subsidy, subjects retain on average Rs. 23 (median Rs. 20) suggesting higher sharing among endogenous sharers who choose to share.

4.2 Willingness to Purchase

We first test for whether being randomly assigned to a shared subsidy affects willingness to purchase the product relative to an individual subsidy. We evaluate a conditional logit specification of the probability of purchase, controlling for the randomized offer price, with community level fixed effects and clustering of standard errors at the community level. We report the results in odds ratios, with individual subsidies as the omitted category.

Table 3.2 indicates that random assignment to exogenous sharing results in lower odds of purchase relative to individual subsidies, but this effect is imprecisely estimated with large confidence intervals which incorporate the possibility of increased odds of purchase as well as decreased odds of purchase. This result can be viewed as corroborating existing research insofar as it suggests the presence in our sample of individuals who are swayed by pro-social considerations into not lowering their propensity to purchase the product in spite of lower subsidies and therefore the decline in willingness to purchase is not statistically significant.

Interestingly, we also find that with endogenous sharing the odds of purchase are significantly lower overall. This result is suggestive of sorting in the presence of reluctant sharers who when exogenously assigned to sharing are inclined to behave prosocially and commit to purchase owing to the subsidy to others being tied to their own purchase choice, but are likely to exit this sharing environment when given the option to do so. We explore this further by dividing the exogenous and endogenous sample into those who select into sharing and those that opt out of sharing. We find that individuals who choose to not share when exogenously assigned to sharing as well as individuals who choose to not share when they endogenously self-select into not sharing have comparably lower odds of purchase. On the other hand, when individuals are endogenously select into sharing they are significantly more likely to make the purchase relative to exogenous sharers and to subjects who receive individual subsidies. These individuals are most certainly demonstrating pro-social motivation as they are receiving a smaller effective subsidy but are significantly more likely to purchase than individuals with larger subsidies. However, this result also implies that a larger proportion of the endogenous sample is opting out of sharing and therefore the mean effect in this subsample is lowered odds of purchase.

4.3 Amount of Sharing

We proceed to examine the amount of sharing between exogenous assignment to sharing and endogenous selection. In column 3 we verify that when individuals can self-select their subsidy type they are significantly less likely to share their subsidy than when they are exogenously assigned to shared subsidies. Hence, our results with product subsidies mirror the dictator game literature whereby people when placed in an environment where the choice is framed as 'how much to share' are significantly less likely to share nothing than when the choice is framed as 'whether to share'.

We also find that conditional on choosing to share, the mean amount of subsidy shared is statistically significantly higher in the endogenous selection sample. The point estimate is small, at little over 5% of the mean subsidy in the exogenous sharing sample, but very precisely estimated.

We analyze how the distribution of sharing shifts between the exogenous sharers and endogenous sharers conditional on sharing a positive amount, by creating subsidy bins for the amounts shared: a quarter of the subsidy or less ($<= 25\%$), half of the subsidy ($<= 50\% \& > 25\%$) or more than half the subsidy ($> 50\%$). Table 3.3 shows that conditional on sharing a positive amount, self-select sharers in the endogenous sharing sample are significantly less likely to share 25% or less of their subsidy. This corroborates the results from Lazear et al. (2012) and Della Vigna et al. (2012) where where willing sharers who select into sharing environments also tend to be the most generous sharers.

4.4 Externalities

We evaluate the effect of externalities priming on our outcomes of interest. Since this randomization is carried out at the level of the community, we switch to sub-district (SMT) fixed effects in our conditional logit specification.

As indicated in Table 3.4, being randomized into no externalities priming appears to lower the odds of purchase in the exogenous sharing sample but raise the odds of purchase if externalities priming is introduced. However, the coefficients are imprecisely estimated, with large confidence intervals and are therefore not statistically distinguishable from one another. On the other hand, in the subsample with endogenous sharing while in the absence of externalities priming there is a lower probability of purchase, as is consistent with the full sample results, we find a statistically significant higher probability of purchase when externalities priming is introduced. Therefore, it does appear that priming is inducing individuals to purchase and this effect is stronger in the endogenous sharing sample.

We parse this effect of priming further by analyzing how it affects those who choose to share and those who choose to keep individual subsidies in both the endogenous and exogenous sharing samples. Columns 2 and 3 of Table 3.4 compare the sharing equilibrium in villages with and without externalities priming. In villages with no priming, the pattern of the full sample is replicated with individuals who do not share their subsidies having a lower propensity to purchase, but individuals who opt into sharing subsidies having a higher propensity of purchase and even more so with endogenous sharing. However, we find a departure in the pattern among those individuals in the endogenous and exogenous sharing sample who choose to share their subsidies. Hence, when individuals are allowed to sort into sharing, those that decide to share are significantly more likely to purchase in the presence of priming, and have the highest odds of purchase of any subsample. However, those who opt into sharing in the exogenous sharing subsample are (insignificantly) less likely to purchase. It would appear, therefore, that among more altruistic types who willingly

choose to share, the salience of externalities creates a stronger motivation to purchase. On the other hand, among reluctant sharers the impact of externalities priming is to weaken their incentive to engage in the behavior relative to when there is no priming. This makes intuitive since insofar as reluctant sharers are less willing to engage with pro-social activity and would conceivably be less likely to engage with mechanisms requiring social coordination.

Overall, we find in column 4 that the impact of externalities priming on the probability of sharing is insignificant among both the exogenous sharing and endogenous sharing samples, suggesting that priming in this case has not increased the odds of sharing overall. Parsing results by how much is shared overall, we find that the overall effect of moderately higher subsidies being shared in the endogenous sharing sample is driven primarily by individuals exposed to the externalities priming, since the uninteracted coefficient on endogenous sharing (no priming subsample) in Table 4 column 1 is nearly zero. We further find that with externalities priming, the distribution of endogenous sharing shifts towards greater generosity, with significantly higher endogenous sharers sharing more than 50% of their subsidies, as shown in Table 3.5.

Overall, we find that priming with externalities induces a stronger incentive to commit to purchase among individuals who self-select into shared subsidies. However, it lowers the commitment to purchase among people who choose to share in the exogenous sharing subsample, which includes reluctant sharers. Therefore, imposing an additional coordination problem on reluctant sharers appears to lower their pro-social motivations overall and create greater reluctance towards purchasing in the face of lower subsidies and higher effective prices.

4.5 Discussion

In a simple comparison of altruistic subsidies against individual subsidies in triggering take up, we can conclude that altruistic subsidies do not outperform individual subsidies since they induce an insignificantly lower probability of purchase overall. Therefore, while there is evidence of some people responding to social incentives and not lowering their probability of purchase when induced to share, this is not the mean effect and there is significant heterogeneity in behavior as evidenced by the large confidence interval over which predicted probability of purchase is distributed for exogenous sharing. This indicates that social preferences are not strong enough to serve as a counterweight for monetary incentives such as direct subsidies.

Moreover, even in the domain of health, there is a significant class of reluctant sharers who will select out of the sharing environment when given the opportunity to sort. Therefore, barring the ability of policy practitioners penalizing exit from the sharing mechanism, the endogenous probability of purchase with sharing and sorting is likely to be strictly worse than with individual subsidies, except in the case of teams or groups with fixed membership.

Overall, we find that priming individuals with information on externalities induces a stronger incentive to commit to purchase among individuals who self-select into shared subsidies. However, it

somewhat lowers the commitment to purchase among people who choose to share in the exogenous sharing subsample, which includes reluctant sharers. Therefore, imposing an additional coordination problem on reluctant sharers appears to lower their pro-social motivations overall and create greater reluctance towards purchasing in the face of lower subsidies and higher effective prices.

Our results also indicate accord with the theory that priming does not alter underlying preferences but merely assists in coordination as we find that priming does not draw more people into sharing. However, among the sharers, there is a significantly higher likelihood of sharing more generously and purchasing the product.

Our results may be construed as a lower bound on sharing behavior, however, given that the identity of sharers and recipients is anonymous and the game is one-shot with no updating of beliefs. Moreover, the product is new and conceivably does not have strong social value associated with it at the very outset.

5 References

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Table 3.1: Summary Statistics

	Individual Subsidy	Exogenous Sharing	Endogenous Sharing
Sample Size	942	881	878
Mean Subsidy Retained (Rs.)	40	28.02	32.15
Median Subsidy Retained (Rs.)	40	30	40
Opts to Share (%)	0	74.46	47.38

Table 3.2: Sharing with Exogenous and Endogenous Assignment

	(1)	(2)	(3)
	Prob of Purchase		Opts to Share
Exogenous Sharing	0.844	0.498**	
	(0.142)	(0.158)	
Endogenous Sharing	0.760*	0.557***	0.239***
	(0.120)	(0.118)	(0.0461)
Price draw	0.972***	0.972***	
	(0.00271)	(0.00263)	
Exogenous Sharing*Opts to Share		1.056	
		(0.303)	
Endogenous Sharing*Opts to Share		1.985**	
		(0.531)	
N	2449	2449	1735
Mean Dep Var	0.82	0.82	0.75
Fixed Effects		Community	

The dependent variable (columns 1 and 2) represent the probability of individuals accepting their TIOLI offer price. Column 3 represents the probability of sharing a positive amount conditional on being assigned to endogenous sharing. Exponentiated coefficients; Standard errors in parentheses

Table 3.3: Amount Shared with Exogenous and Endogenous Assignment

	(1)	(2)	(3)	(4)
	Subsidy Amount			
	(Rs.)	Pr(Rs. 1-10)	Pr(Rs. 11-20)	Pr(Rs. 21-40)
Endogenous Sharing	0.900*	-0.0625*	0.0497	0.0128
	(0.480)	(0.0372)	(0.0369)	(0.0146)
_cons	15.92***	0.435***	0.525***	0.0398***
	(0.186)	(0.0144)	(0.0143)	(0.00565)
N	1072	1072	1072	1072
Mean Dep Var	16.08	0.42	0.54	0.04
Fixed Effects	Community			

The dependent variable (column 1) represent the monetary amount of subsidy shared conditional on individuals selecting into sharing. Columns 2-4 represent the probability of individuals sharing a 0-25%, 25%-50%, or 50%-100% portion of their subsidy

Table 3.4: Externalities Priming and Likelihood of Sharing

	(1)	(2)	(3)	(4)
		Prob of Purchase		Opts to
		No Priming	Ext Priming	Share
Externalities Priming	1.103			0.896
	(0.336)			(0.215)
Exogenous Sharing (EXO)	0.857	0.451	0.551	
	(0.234)	(0.221)	(0.224)	
Endogenous Sharing (ENDO)	0.721**	0.505**	0.618*	0.291***
	(0.107)	(0.165)	(0.153)	(0.121)
EXO*Externalities	1.137			
	(0.279)			
ENDO*Externalities	1.361*			0.998
	(0.246)			(0.398)
EXO*Opts to Share		1.292	0.766	
		(0.506)	(0.355)	
ENDO*Opts to Share		1.564	2.959***	
		(0.567)	(1.037)	
Price Drawn	0.976***	0.972***	0.973***	
	(0.00273)	(0.00324)	(0.00440)	
N	2701	1339	1110	1759
Mean Dep Var	0.83	0.82	0.82	0.76
Fixed Effects	SMT		Community	SMT

The dependent variable (columns 1-3) represent the probability of individuals accepting their TIOLI offer price. Columns 2 & 3 divide the sample by whether individuals received externalities priming. Column 4 represents the probability of opting to share a positive amount conditional on being assigned to endogenous sharing. Exponentiated coefficients; Standard errors in parentheses

Table 3.5: Externalities and Amount Shared

	(1)	(2)	(3)	(4)
	Subsidy Amount			
	(Rs.)	Pr(Rs.1-10)	Pr(Rs.11-20)	Pr(Rs.21-40)
Endogenous Sharing (ENDO)	0.145	-0.0325	0.0459	-0.0134
	(0.562)	(0.0487)	(0.0511)	(0.0138)
Externalities Priming	0.429	-0.0389	0.0424	-0.00352
	(0.743)	(0.0576)	(0.0576)	(0.0185)
ENDO*Externalities	0.874	0.0107	-0.0717	0.0610**
	(0.883)	(0.0685)	(0.0705)	(0.0251)
_cons	15.89***	0.438***	0.520***	0.0415***
	(0.483)	(0.0389)	(0.0390)	(0.0110)
N	1072	1072	1072	1072
Mean Dep Var	15.88	0.44	0.52	0.04
Fixed Effects			SMT	

The dependent variable (column 1) represent the monetary amount of subsidy shared conditional on individuals selecting into sharing. Columns 2-4 represent the probability of individuals sharing a 0-25%, 25%-50%, or 50%-100% portion of their subsidy

6 Appendices

Table A9: Balance Across Treatment Arms

	Individual Subsidy	Exogenous Sharing	Endogenous Sharing	p-value (joint)
Female	0.541	0.547	0.550	0.908
	(0.016)	(0.017)	(0.017)	
Education (years)	1.423	1.505	1.619	0.533
	(0.115)	(0.124)	(0.132)	
Number of HH members	7.957	8.124	8.331	0.009
	(0.118)	(0.131)	(0.140)	
Number of children 0-5years	0.682	0.656	0.674	0.417
	(0.027)	(0.031)	(0.031)	
Household Head	0.712	0.684	0.710	0.383
	(0.015)	(0.015)	(0.015)	
Poverty score at the hhold level	23.497	23.158	23.737	0.376
	(0.428)	(0.468)	(0.450)	
Below Poverty Line	0.555	0.588	0.554	0.417
	(0.016)	(0.016)	(0.017)	
Natural Leader	0.114	0.116	0.141	0.288
	(0.010)	(0.011)	(0.012)	
Contamination at source	7.326	7.312	7.307	0.000
	(0.060)	(0.061)	(0.062)	
Contamination at storage	4.216	4.121	4.153	0.186
	(0.078)	(0.079)	(0.080)	
Number of meeting members	30.294	30.322	30.267	0.001
	(0.393)	(0.405)	(0.408)	
Beliefs re. Average WTP	78.288	78.286	81.350	0.135
	(1.347)	(1.382)	(1.530)	
No beliefs re. Average WTP	0.220	0.196	0.199	0.390
	(0.013)	(0.013)	(0.013)	
Small Household (¡5 members)	0.243	0.238	0.244	0.890
	(0.014)	(0.014)	(0.014)	