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One Size Doesn't Fit All: Plurality of Social Norms and Saving Behavior in Kenya

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One Size Doesn't Fit All:
Plurality of Social Norms and Saving Behavior in Kenya

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Abstract: We measure the social norms of sharing income with kin and neighbors in villages in Kenya. We find a plurality of norms: from a strict norm prohibiting wealth accumulation to a norm facilitating saving. Several individual and social network characteristics predict the norms upheld; the pro-saving norm becomes majoritarian when an individual can conceal their income from kin and neighbors. Whether income secrecy facilitates savings depends on the type of norm individuals uphold: stricter norm supporters are helped by secrecy, pro-saving norm supporters are harmed. This highlights the importance of measuring social norms when devising pro-saving policy interventions.

Keywords: Sharing norms; forced solidarity; social pressure; savings; social norms; Krupka-Weber method; lab-in-the-field experiment.

JEL Classification: C91, C93, D91, O12, O17

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1. INTRODUCTION

Informal redistribution of resources is commonplace in many developing countries, particularly in sub-Saharan Africa. Reciprocal gift-giving and informal exchanges of money and goods play an important role in these communities by insuring individuals against natural risk, as well as by fostering and cementing social ties with relatives, friends and neighbors (Platteau, 2014). It has been argued that these practices are so ingrained in these communities that sharing one's wealth with others is often perceived as a social obligation – a *social norm* that is actively enforced within the community by means of social and economic sanctions (e.g., Platteau, 2000; Barr and Stein, 2008). Importantly, the literature has pointed out that there may also be a dark side to this social norm of sharing: the obligation to share the yields of one's work with others may discourage effort, entrepreneurship, investments in human capital, and the accumulation of assets and wealth in these communities (e.g., Platteau, 2000; Hoff and Sen, 2006; Platteau, 2014).

Much of the evidence on the existence, and negative effects, of sharing norms in developing countries comes from field studies showing that individuals are willing to incur material costs in order to keep their income private (e.g., Baland et al., 2011; Beekman et al., 2015; Jakiela and Ozier, 2016; Boltz et al., 2019), and that mechanisms that allow indidviduals to shield wealth from public scrutiny enable individuals to accumulate more savings (Dupas and Robinson, 2013; Jakiela and Ozier, 2016) and to reduce the rate at which they spend resources (Goldberg, 2017).[1] While these behavioral patterns are consistent with the existence of sharing norms, little is known about the pervasiveness of these norms, or the shape that they take. How

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[1] However, see also Brune et al. (2016), who find less conclusive evidence for this effect. Another strand of the literature shows that there is a negative relation between savings and investment and the size of one's social network (e.g., Di Falco and Bulte, 2011, 2015; Grimm et al., 2017). See also Ashraf (2009) and Bulte et al. (2018) for income hiding within the household.

much wealth is an individual expected to sacrifice in order to comply with the norm? How harsh is the social disapproval for deviating from the obligation to share? And finally, how much consensus exists amongst villagers regarding these obligations?

In this paper we open the black-box of sharing norms and provide direct empirical evidence of the existence, shape and pervasiveness of these norms among rural communities in Western Kenya. We run a lab-in-the-field experiment where we exploit a recent advance in the experimental literature on social norm compliance (Krupka and Weber, 2013) to measure the prevailing perception of the social appropriateness of wealth accumulation when an individual is confronted with demands to share income with other members of the community. In the experiment, participants are described a vignette in which a hypothetical person receives unanticipated windfall income that they plan to save. The person, however, is asked to share the money with a friend in need. Participants are incentivized to report their perception of the social (in)appropriateness of the individual keeping various amounts of the windfall income rather than sharing it with the friend.

Surprisingly, we find that a *plurality of norms* exists in our context. Only a minority of participants uphold a strict norm of sharing that proscribes any form of wealth accumulation. Most participants recognize moderate accumulation of wealth as socially acceptable, although they do view full sharing as most appropriate. In contrast, about a quarter of participants even support a *pro*-wealth accumulation norm, whereby keeping most of one's wealth for oneself is the most appropriate course of action.

We show that a number of individual characteristics, as well as features of the social network in which the individual is embedded, are predictive of the type of norm that a person upholds. Specifically, the strict norm that prohibits wealth accumulation is positively associated

with age, lower levels of income, and traits such as unwillingness to contribute to public goods and negative reciprocity. In contrast, network characteristics, such as being connected to a larger set of people, and being embedded in a more cliquish social network, work against the strict norm of sharing in favor of the pro-wealth accumulation norm.

We then ask how mechanisms that allow individuals to keep their income private – a prominent feature in the development literature on sharing norms – affect the perceived obligation to share. We describe to a subset of experimental participants a modified version of the vignette in which the hypothetical person can keep the income secret from others, and can thus plausibly refuse to share it with the friend without appearing unwilling to do so. We find that in this setting the share of participants who endorse the pro-wealth accumulation norm doubles to 50%. This is an important finding because it suggests that mechanisms that promote income privacy can be useful to counteract the potentially negative effects of sharing norms, since not only do these mechanisms lower the cost of deviations (as argued by the previous literature), but also change the perception of what one ought to do in such situations.

To investigate the effectiveness of privacy in counteracting pressures to share, in the last part of our paper we study how giving participants the opportunity to keep their income secret affects actual accumulation of wealth. In collaboration with a local commercial bank, we open bank accounts for each individual who participates in our experiment and pay their entire experimental earnings directly into these new accounts. We then offer a generous interest rate to create a strong incentive to save the experimental earnings. We promise participants that we will pay an additional 50% on the share of earnings that they keep in the account for an entire month from the day of the experiment (which we can monitor via the bank).

We study levels of saving across two treatments that differ in the procedure used to announce earnings at the end of the experimental sessions. In one treatment (PUBLIC) each participant's earnings were publicly announced to the whole session. In the other treatment (PRIVATE) earnings were communicated to each individual in private. The latter group of participants therefore has the opportunity to keep their earnings secret – very much like the person in the vignette – and may therefore be better able to escape the social pressure to share income with other village members.

We find that on aggregate privacy has only a small average treatment effect on savings and cannot rule out that the effect is significantly different from zero. We show that this (null) result is driven by the presence of heterogeneity in treatment effects due to diverse responses to the PRIVATE intervention among groups of participants who uphold different norms of sharing. Specifically, privacy increases the savings of individuals who endorse the moderate sharing norm; has zero effect among subjects who uphold the strictest sharing norm; and actually, reduces the savings of participants (particularly women) who endorse the pro-wealth accumulation norm. We argue that this latter case may be because privacy does not carry much of a benefit for this group of subjects, since even in situations without privacy they do *not* perceive an obligation to share. However, the PRIVATE intervention may be harmful for them, as it removes a potential beneficial effect of publicity, namely, that when earnings are observable, others can infer how much an individual manages to save, which may carry reputational value as a signal of how much an individual cares about the future; such a reputational value may be more significant the more a person is connected and/or embedded in a cliquish social network. Recent literature has shown this can be used by others to screen potential partners in informal exchanges (see Kast et al., 2018; Breza and Chandrasekhar, 2019).

Our paper contributes to the growing literature on the impact of sharing norms on the economic decision-making of individuals in developing countries (e.g., Di Falco and Bulte, 2011, 2015; Dupas and Robinson, 2013; Jakiela and Ozier, 2016; Goldberg, 2017; Boltz et al., 2019). One message that emerges from this existing empirical literature is that easing the pressure of a sharing norm can have beneficial effects for the economic and financial decisions of individuals who live in poor communities. Our results confirm the existence of the pressure to share in these rural communities. However, we also show that a plurality of norms exists, and – importantly – that these different normative ideals carry different implications for the effectiveness of interventions that aim to mitigate social pressure by other community members. For those individuals who do not perceive a strong obligation to share, mechanisms that ease social pressure can *backfire* – possibly because removing social pressure and observability of income also removes the reputational value of being seen as a person who makes responsible economic decisions (Breza and Chandrasekhar, 2019).

Our results also show that sharing norms are perhaps not as strong as previously thought – at least not in the context of our lab-in-the-field experiment. Only about a quarter of our participants uphold a very strict norm that prohibits any form of wealth accumulation. Most people find it acceptable to resist the pressure to share and instead accumulate some wealth. Moreover, this stricter normative ideal is easily displaced: introducing income privacy changes the majority view of what is most acceptable in favor of wealth accumulation.

Finally, from a more methodological perspective, our findings highlight the importance of studying the effects of social norms *empirically* – by measuring directly the norms that prevail in a particular setting rather than inferring these from observed behavior. We show that combining

behavioral data with data on the normative beliefs that individuals hold about their behavior, can lead to important and novel insights about the mechanisms that underlie human decision-making.

The rest of the paper is organized as follows. Section 2 illustrates the design of the study and the lab-in-the-field experiment. We report summary statistics and balance checks in section 3. Our results are reported in section 4. Section 5 concludes.

2. DESIGN OF THE STUDY

The study took place in six villages outside Eldoret town in Uasin Gishu County, Western Kenya. The villages were randomly selected conditional on containing approximately 100 households, being located at a short distance from Eldoret town (reachable within 30 minutes by car), and ensuring that selected villages did not lie in direct proximity to one another. The study ran between April and June in 2016 with the help of a team of 10 local enumerators recruited among students from a local university.

In each village, we initially conducted a household survey aimed at gathering background characteristics, including social network information, for all village households. We then ran a lab-in-the-field experiment with a randomly selected sub-sample of 228 members of the surveyed households.[2] The experiment measured subjects' perceptions of prevailing norms of sharing in their villages through the telling of two vignettes: one in which windfall income is made public, and another where it is private. Participants were asked to rate the appropriateness of sharing and withholding the income in the vignettes. In addition, the two treatments varied in the way we announced experimental earnings to the subjects at the end of the session, namely, in public or in

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[2] For each household that we selected to invite to the experiment, we randomly selected whether to invite the female or the male head of household. Sometimes the selected household-head was not available, in which case the household-head of the opposite gender was interviewed and invited to the experiment instead. In a few cases, a member of the household who was not its head participated.

private. Exploiting this variation, we study the effect this has on their use of the experimental money. To do this we collaborated with a local commercial bank (Kenya Commercial Bank, KCB), whereby, at the end of the experiment, each participant was helped to open a bank account in which we then paid their experimental earnings. We tracked withdrawals from the account for a month after the experiment to measure the impact of the two treatments on their saving behavior.[3] Below we describe in detail each component of our study.

2.1 Household Survey

The aim of the detailed household survey was to collect general information about all households and their members in each village, including specific information concerning the social network in which the household was embedded. While the aim was to run the household survey for all 755 households that were present in the six villages (and not just those who were then selected to participate in the experiment), this was not always possible. In a small number of cases, the households had time constraints and we had to run a reduced version of the survey, collecting only basic information about the household (89 cases in total). Moreover, we could not access or obtain any information on another 111 households for a variety of reasons, including household members not being present.

Nevertheless, for most households (74% across all villages), we were able to collect information on a variety of socio-demographic characteristics (including, age, gender, marital

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[3] Subjects were told at the first contact with the enumerator that they had to agree to open an account free of charge with our partner bank in order to be eligible to take part in the study. Moreover, during the experiment we obtained written consent from all participants to give us access to their bank account statements for the relevant study period. Participants were free to withdraw from the study or deny access to their bank account while still receiving their full experimental earnings (no one did so). The study received ethical approval from the University of Nottingham's Research Ethics Committee and research permission from the Kenyan National Commission for Science, Technology and Innovation.

status of subjects being interviewed)[4], preferences and attitudes (risk, patience, trust, altruism, and positive and negative reciprocity – based on the general questions outlined by Falk et al., 2018), perceptions of social pressures from family and friends[5], as well as their social networks.

Social networks were measured using the approach introduced by Banerjee et al. (2013). The module, described in more detail in appendix A of the Online Supplementary Materials (OSM), consists of a series of questions asking respondents to name people with whom they have various types of relationships within the village. We use this rich dataset to reconstruct the network characteristics of the individuals who participated in the experiment.

2.2 Lab-in-the-Field Experiment: Norms of Sharing

In each village, on the day after the household survey, a random sample of individuals participated in a lab-in-the-field experiment designed to elicit social norms of sharing. Following the economics literature on norms, we define *social norms* as shared understandings, among a reference group of people, of the appropriateness or inappropriateness of certain actions in a given context (Akerlof and Kranton, 2000; Ostrom, 2000; López-Pérez, 2008; Krupka and Weber, 2013; d'Adda et al., 2019). Krupka and Weber (2013) introduced an experimental module, which has been used extensively in the behavioral economics literature, to empirically measure an individual's perceptions of the norms that pertain to a given situation. Norms elicited using this methodology have been shown to systematically predict actual behavior in a variety of contexts, from reciprocal behavior in workplaces to bribery and discrimination (e.g., Gächter et al., 2013;

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[4] Moreover, we also measured income and savings only for the individuals who were randomly selected to participate in the experiment (due to the length of this part of the questionnaire).

[5] These included an estimate of the claims that would be made by others in the event that the person would have cash savings at home (John, 2018), an estimate of the gifts and loans that have been transferred to others in the past month, and a measure of the individual's feeling of obligation to give money to other villagers asking for it (Dupas and Robinson, 2013).

Krupka and Weber, 2013; Nikiforakis et al., 2014; Banerjee, 2016; Gächter et al., 2017; Krupka et al., 2017; Barr et al., 2018; Chang et al., 2019).

Adapting this norm-elicitation module, we elicit the perceptions, among our sub-sample of participants, of the *norms of sharing* that prevail in their village. Specifically, participants were read one of two vignettes describing a hypothetical situation faced by a person in their own village. Each vignette was identical except in whether the knowledge of extra income was publicly known. In one vignette (PUBLIC), the person has recently earned extra income to the value of 900Ksh which everyone in the village is aware of (equivalent to approximately two-weeks per capita income among rural Kenyans at the time of the experiment). The person intends to save the money to grow their own business with the purpose of increasing their future household wealth. However, a friend approaches this person and asks for the money as they need it to pay their children's school fees. The person has to decide how much money to give to the friend, choosing among six actions: from giving the whole 900Ksh to the friend and saving nothing, to giving nothing to the friend and saving the whole 900Ksh for themselves. The six possible actions described in the vignette are: save 0%, 20%, 40%, 60%, 80% or 100% of the 900Ksh.

Participants were asked to rate the appropriateness of each of these six actions using a 4-point scale, ranging from "very socially appropriate" to "very socially inappropriate". Participants were told that, by "socially appropriate", we meant behavior that most people would agree is the "correct thing to do" (see OSM B for details about the instructions).

Importantly, this vignette focuses on the norm of sharing that prevails in situations where an individual's income is *observable* by other members of the village. This is common in rural, close-knit communities, such as the one where we ran our lab-in-the-field experiment, where

individuals can closely, and continuously do, monitor each other's yield from agricultural production (Platteau, 2006).

Given an important aim of the study was to examine the extent to which mechanisms or institutions that help individuals to keep information about their income private influences the norm of sharing, and hence saving behavior, we also designed a second version of the vignette in which the person's income was *not observable* by others in the village. This second vignette (which we call PRIVATE) was identical to the vignette described earlier, except that no other person in the village (including the friend asking for money) knows that the person has earned the extra income. In this version no one can infer from the person's decision how much of the 900Ksh they have saved for themselves. This implies that, in the PRIVATE vignette, the person's decision not to give a share of the 900Ksh to the friend could be interpreted by the friend as due to lack of financial means. This subtle variation in the context of the decision situation across the two vignettes allows us to study how norms of sharing are influenced by the information that others have on an individual's income.

Importantly, the task was incentivized both for the PUBLIC and PRIVATE conditions. Participants were told that, at the end of the experiment, one of the six actions they had rated would be randomly selected and their rating for that action would be compared to the rating of another randomly selected villager, who was also participating in the same experimental session and rating the same vignette. If the two ratings were the same, then both subjects were paid 900Ksh each, otherwise they were paid nothing.

Note, although participants are therefore incentivized to coordinate their ratings with other subjects who are in the same session as themselves, they are not allowed to communicate with each other, and so they need to rely on focal points present in the task to solve the

coordination problem. As discussed in Krupka and Weber (2013), if a social norm exists for the behavior described in the vignette, this constitutes a very salient focal point in the task, which participants may refer to when rating the actions in the vignette. Participants' ratings therefore allow us to (indirectly) measure the norms that are perceived to apply in situations that involve a tension between wealth accumulation and sharing money with other members of one's village.

In conjunction, we were also interested in studying how decreasing observability of one's own income affects *actual* saving behavior. As we discuss in the next sub-section, we can observe the saving decisions of our participants for one month after the lab-in-the-field experiment. To study how income observability affects their saving decisions, we randomly allocated participants to one of two treatments that varied in the way participants were paid at the end of the experiment.

In the PUBLIC treatment, payments were publicly announced to everyone in the session. We did this by writing the income of every session participant on a board placed in the front of the room where the experiment was conducted. We then called participants one-by-one to the front of the room to collect a paper slip on which their payment amount was written. In contrast, in the PRIVATE treatment, payments were made in a separate room, and each participant was privately informed of their own earnings.[6] No one else in the session was informed of other participants' earnings and so this information could be kept private as long as a participant chose not to disclose.

Importantly, in order for participants in the PRIVATE treatment to be truly able to maintain private information over their earnings, it was essential that the amount earned by

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[6] Participants in PRIVATE also received a paper slip with their payment amount written on it, but we then made them destroy it so that no one could know how much they had earned.

subjects in the experiment varied sufficiently across individuals. This ensured that – just as the person in our norm-elicitation task – participants in PRIVATE could credibly deny having received high earnings and thus possibly escaping the demands that others in the village may make over their income. To achieve this variation in earnings we embedded the norm-elicitation task into a larger study consisting of 4 tasks in total (a public goods game, a cognitive ability task, a financial literacy task, and the norm-elicitation task – see below and OSM C for details). Payments depended on the choices that a subject made in one of these tasks, randomly selected for each subject at the end of the experiment. Moreover, in the norm-elicitation task earnings also depended on a random component, namely, which of the six actions was selected and whether it matched that of another participant. Overall, we achieved sufficient variation in subjects' earnings, which, including a 300Ksh participation fee, ranged from 300Ksh to 1500Ksh, averaging 900Ksh. We believe this guaranteed sufficient privacy of earnings for participants in the PRIVATE treatment.

Using community buildings, within each village the two treatments were run on the same day, in two separate sessions, one after the other to avoid contamination, with each lasting for approximately 4.5 hours.[7] Participants were randomly assigned to either the PUBLIC or the PRIVATE treatment. To avoid confusion, participants assigned to the PUBLIC treatment received the PUBLIC vignette in the norm-elicitation task, while those assigned to the PRIVATE treatment received the PRIVATE vignette. We have 106 participants in PRIVATE and 122 in PUBLIC, the small imbalance being due to variation in the number of people who showed up to the experimental sessions.

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[7] The morning session lasted between 9:30am and 2:00pm and the afternoon session between 2:00pm and 5:30pm. Participants in the afternoon session were strictly prevented from interacting with participants in the morning session before the start of the afternoon session. The order of the treatments was randomized across villages.

As mentioned above, the experiment also included three other incentivized tasks in addition to the norm-elicitation task: a two-person, one-shot linear public goods game; a cognitive ability task where participants solved three Raven's matrices; and a financial literacy task based on Cole et al. (2011). (See OSM C for a more detailed description of these tasks. In all sessions, the tasks were played in the listed order, with the norm-elicitation task last). The three other tasks were identical across treatments. Choices in these additional tasks are not the focus of this paper, but are included as controls in the analysis below.

All instructions were read to participants aloud by an experimenter. Instructions for each game were complemented by publicly-displayed visual aids that two other experimenters used to illustrate the content of the instructions. In all games, before collecting decisions, participants were asked a few questions about the game to test their understanding. The experimenters checked participants' answers on an individual basis so that any clarification needed could be made in private. The experiment was run with pen-and-paper. During the experiments all choices and answers were taken individually. Anonymity was ensured by providing each participant with a squared box with tall edges. Participants had to make all choices inside their box without ever removing any material from the box. (See OSM B for further details on the experimental instructions, visual aids and the script used to run the experiments).

2.3 Saving Behavior

After all tasks had been played, participants were informed of their experimental earnings, with payment procedures varying across treatments as described above. Participants then left the experimental room and individually met an officer of our partner bank who helped them open (at no cost and in private) a standard bank account in their own name. On the following day, their

bank account was activated, and their experimental earnings were paid directly, and in full, into their bank account.

Subjects were promised a very competitive interest rate for the experimental money deposited in their new account. They were told that throughout the month following the experiment we would track any experimental money they withdrew from the account. At the end of the period, we would deposit an additional sum to the value of 50% of the money remaining in the account.[8] This generous interest rate was chosen so that it would be unlikely that subjects could find a more lucrative way to save the money. We use the share of experimental money *not* withdrawn by a subject at the end of the first month as a measure of their saving behavior. In the analysis of section 4, we check whether our treatment intervention (PUBLIC or PRIVATE payments) had an impact on the amount of money saved in the month after the experiment.

We took great care to explain the mechanism for calculating the interest to subjects at the end of the experiment (see OSM B). Moreover, we also sent each participant two text messages (one on the day when the money was paid into the account, the other 15 days later) to remind them about how the interest would be determined and when it would be paid out. Other practical information about account usage, including the fees associated with account activity such as depositing, withdrawing and transferring money via the mobile-money-transfer service M-Pesa, was explained to participants directly by bank officers when they opened the account.[9]

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[8] Very few subjects deposited extra money in the account during the period of the study. The instructions made it clear ex-ante that we would not pay any interest on extra money deposited in the account.

[9] For example, the most common way of withdrawing money, i.e., through M-Pesa, was charged a fee of 55Ksh. Since subjects were informed of these usage fees, we include them in the calculation of the share of experimental money withdrawn. Our results are robust to not counting fees as withdrawals.

3 ATTRITION, BALANCE CHECK AND SUBJECT CHARACTERISTICS

Table 1 presents balance checks and subject characteristics that will be used in the analysis in the next section. We use data on socio-demographic characteristics: age, gender, marital status, education level, income, and savings levels reported in the household survey. Variables measuring behavioral preferences collected in the household surveys include: patience, risk taking, altruism, positive and negative reciprocity, trust – all unincentivized and measured using Likert scales from 0 to 10 where higher values indicate stronger traits. They are described in more detail in OSM D. Variables measuring behavioral preferences collected in the experimental tasks include: fraction of endowment contributed in the public goods game, number of correct answers to the 3 Raven matrices and 4 financial literacy questions - all incentivized. We also include variables measuring subjects' perceptions of the financial demands on their income by other village members: a measure of their feeling of obligation to give in to others' demands, rated between 0 and 10; an estimate of the percentage of money they think others would ask for if they had an extra 900Ksh cash; and an estimate of the gifts and loans transferred to relatives and friends over the past one month, net of any gift and loans received. Finally, we also include data on network characteristics: clustering and degree – explained in section 4 in more detail.

Table 1 (Column 1) shows that the individuals who participated in the experiment were predominantly female (69%) and with an average age of 41 years. They had on average around 8.6 years of formal education. Their aggregate monthly earnings were approximately 24,000Ksh (US$240), which compares with an average per-capita income of around 84,000Ksh in Kenya at the time of the experiment.

Table 1 Balance check and sample characteristics

Variable Column	Variable Mean [SD] (1)	Balance check: Participate		Balance check: PRIVATE	
		Coefficient (2)	(SE) (3)	Coefficient (4)	(SE) (5)
1 if Male	0.31 [0.46]	-0.47*	(0.28)	-0.47	(0.29)
1 if Married	0.79 [0.41]	-0.22	(0.35)	0.03	(0.33)
Age	41.27 [12.75]	2.70	(1.87)	-0.61	(1.71)
Years in education	8.63 [3.54]	-1.04**	(0.45)	-0.08	(0.47)
Savings (in Ksh1000)	19.46 [125.91]	3.51	(11.14)	-1.22	(16.72)
Income (in Ksh1000)	23.63 [31.21]	-6.24	(4.38)	4.11	(4.28)
Patience	6.93 [1.94]	0.27	(0.23)	0.18	(0.26)
Risk Aversion	3.23 [2.11]	-0.03	(0.26)	-0.13	(0.28)
Altruism	7.05 [2.27]	-0.23	(0.25)	0.17	(0.30)
Positive Reciprocity	7.51 [1.92]	0.20	(0.28)	0.12	(0.26)
Negative Reciprocity	4.35 [3.20]	0.21	(0.43)	-0.56	(0.43)
Trust	6.47 [1.93]	0.17	(0.27)	-0.04	(0.26)
PGG Contribution (% endow.)	0.32 [0.241]			-0.27	(0.64)
Cognitive ability	1.86 [0.82]			0.06	(0.11)
Financial literacy	2.72 [1.06]			-0.09	(0.14)
Feel obligated to give	7.62 [1.56]	0.06	(020)	0.13	(0.21)
Claim estimate (% of 900Ksh)	0.57 [0.28]	0.02	(0.04)	0.01	(0.04)
Gifts & Loans (in Ksh1000)	0.25 [1.75]	-0.30	(0.38)	-0.06	(0.23)
Clustering	0.18 [0.14]	-0.03	(0.02)	-0.00	(0.17)
Degree	12.25 [4.94]	0.57	(0.62)	0.18	(0.65)
P-value – Joint Test		*0.346*		*0.947*	

Note: Standard deviations in brackets. Robust standard errors in parentheses, derived from OLS regressions (apart from the variables male and married for which we used logit regressions) of the variable listed in the corresponding row of the table on whether an individual participated in the experiment (Columns 2 and 3) or was assigned to the PRIVATE treatment (Columns 4 and 5). **Significant at the 5 percent level. *Significant at the 10 percent level. 302 subjects initially agreed to participate in the experiment while 228 showed up to the experiment and participated. Due to missing data for specific variables (negative reciprocity, trust, feel obliged to give), some variable means/regressions are based on slightly smaller samples.

Regarding attrition, although 228 individuals participated in our experiment, 302 were initially invited to take part. Columns 2 and 3 test whether those 228 who participated were significantly different from the 74 that did not. We report coefficients and robust standard errors from regressions where the independent variable takes value 1 if an individual participated in the experiment and the dependent variable is the corresponding characteristic listed in each table row. We find that only two variables are significantly different between participants and non-participants. Men and those with more years of education were less likely to participate in the experiment. Despite these differences, the joint test of the hypothesis that all coefficients are equal to zero cannot be rejected (p = 0.346). We conclude that surveyed individuals who participated in our experiment are not systematically different from those who did not participate.

In Columns 4 and 5, we test whether the experimental participants in the PUBLIC treatment are different from those in the PRIVATE treatment. Similarly, we report coefficients and robust standard errors from regressions of the corresponding characteristic listed in each table row on whether a subject was assigned to the PRIVATE treatment. As one would expect, given the random assignment to treatment, none of the individual characteristics are significantly different across treatments. The joint test confirms this (p = 0.947).

4. RESULTS

4.1 Social Norms of Sharing

We start with the analysis of subjects' responses in the norm-elicitation task of our experiment. As is common practice in the norms literature, we convert subjects' ratings in the task to numerical values, by assigning evenly-spaced values of +1 to the rating "Very socially appropriate", +0.33 to the rating "Somewhat socially appropriate", -0.33 to the rating "Somewhat

socially inappropriate", and -1 to the rating "Very socially inappropriate". This allows us to construct a *norm function*, which assigns a value of social appropriateness to each action. The function takes positive values for actions that, on average, are evaluated as socially appropriate, and negative values for inappropriate actions.

Figure 1 plots the norm functions elicited in the experiment. It consists of 4 panels. Panel 1 (top-left, black lines) shows the norm functions constructed by averaging the appropriateness ratings across the whole sample, and separately for subjects in the PUBLIC (solid lines) and PRIVATE treatment (dashed lines). The panel shows that, in both treatments, the most appropriate action is for the person in the vignette to give the whole 900Ksh to the friend in need and thus save nothing of the extra money earned. Small (20%) amounts of savings are perceived as somewhat appropriate in PUBLIC, but any larger amount is viewed as inappropriate in both treatments. The action that is least appropriate, in either treatment, is to save the whole 900Ksh and give nothing to the friend. Overall, this suggests the existence of a norm of sharing in the villages of our study. Moreover, the norm seems to differ only minimally across information conditions. In fact, we do not detect any significant differences in the ratings of any action between PRIVATE and PUBLIC (p > 0.192, Mann-Whitney rank-sum test).[10]

However, this result masks substantial heterogeneity in the way that different subgroups of participants rated the actions in the vignette. This is shown in the remaining three panels of Figure 1. To divide subjects in subgroups, we use hierarchical cluster analysis (Fallucchi et al., 2018), a technique that does not rely on arbitrary ex-ante classifications of types, but is instead

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[10] Tests are conducted using the individual as the unit of observation. Reported p-values are two-sided. When we test for differences in the norm function between treatments, we perform multiple comparisons across treatments at various points of the function (for actions "Save 100%", "Save 80%", etc.). To correct for the increased likelihood of type I errors, we use the Benjamini-Hochberg procedure and report corrected p-values in the paper.

data-driven and exploits patterns of similarity in the data to classify subjects into homogeneous

groups. Specifically, the analysis constructs subgroups of individuals ("clusters") based on the

similarity between their norm functions: clusters are selected in order to minimize the differences

between norm functions within a cluster and to maximize the differences between clusters.

Further details on the clustering procedure are provided in OSM E.

Figure 1 – Norms of sharing in PUBLIC and PRIVATE
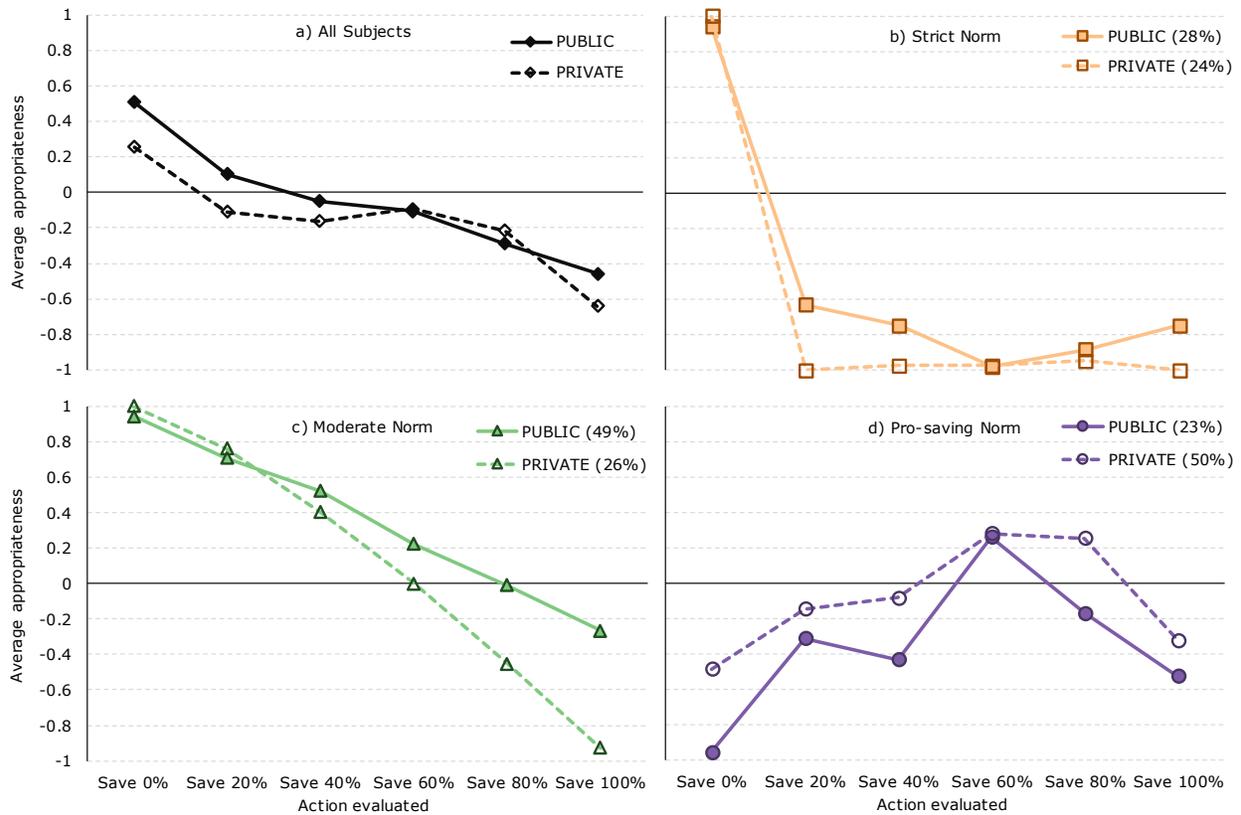
Note: Each panel plots the average social appropriateness of the six actions evaluated by subjects in the vignette (ranging from 1, "very socially appropriate", to -1, "very socially inappropriate"). The solid lines indicate the PUBLIC treatment, the dashed lines the PRIVATE treatment. The top-left panel contains data for the whole sample, while the remaining three panels show averages constructed on subgroups of subjects defined using hierarchical cluster analysis (see OSM E for details). The percentages shown in parentheses in the legend represent the fraction of participants classified as one of the three norm types in each treatment.

The analysis reveals the presence of three distinct subgroups, both in the PUBLIC and

PRIVATE treatment. The first subgroup (top-right, orange lines with squares) contains subjects

who perceive what we call a "*strict norm*" of sharing. According to these subjects, saving nothing and giving everything to the friend is the *only* appropriate action, every other action is rated as highly inappropriate. This norm maximally penalizes any type of wealth accumulation. The norm is rather similar in the two treatments: we only detect one significant difference in the norm function across treatments, for action "*Save 20%*" ($p = 0.025$, Mann-Whitney rank-sum test; in all other cases $p > 0.237$).

The second subgroup (bottom-left, green lines with triangles) contains subjects who also view full sharing as the most appropriate action, but who are more permissive regarding small deviations from full sharing. Moderate savings (i.e., 20%-40% of the total) is viewed as acceptable. We call this a "*moderate norm*" of sharing. In this cluster we detect a difference between norms in PUBLIC and PRIVATE for the action "*Save 100%*", which is penalized more harshly in the PRIVATE case ($p = 0.021$, Mann-Whitney rank-sum test). No other action is evaluated differently across treatments ($p > 0.112$).

Finally, the third subgroup (bottom-right, blue lines with dots) contains subjects who do *not* perceive full sharing as the most appropriate action. Here, the norm functions are hump-shaped: in both treatments, the most appropriate action is to save 60% of the money and give the remaining 40% to the friend. Full sharing is viewed as the *least* appropriate action. Sharing nothing is also viewed as inappropriate. Given these patterns in the norm function, we call this a "*pro-saving norm*" since saving most of the money is encouraged, and not proscribed, by the norm. We only find a difference between treatments for the action "*Save 0%*" ($p = 0.021$, Mann-Whitney rank-sum test; in all other cases $p > 0.112$).

It is also interesting to examine the percentages of subjects who fall into each subgroup in the two treatments. In PUBLIC most subjects (49%) recognize the existence of a moderate

sharing norm, 28% perceive the strict sharing norm, and 23% the pro-saving norm. In PRIVATE these shares differ markedly: the most popular norm is now the pro-saving norm (50% of subjects), while 26% perceive a moderate sharing norm and 24% a strict sharing norm. These differences in proportions across treatments are highly significant (p < 0.001, Fisher's exact test).

These results provide evidence that the information condition has a strong impact on norms, which was not clearly visible in the aggregate data. When privacy over income is guaranteed, and other village members cannot distinguish whether deflecting requests for money are due to lack of financial means or an unwillingness to share, most subjects view saving (and refusing to share) as socially appropriate. In contrast, in the absence of privacy, most subjects believe a stricter norm applies. This suggests that interventions and mechanisms that allow individuals to shield their income from the eyes (and claims) of others have the potential of increasing saving behavior, by tempering the norm of sharing that would otherwise prevail in the community.[11] We will return on this point later, in section 4.2.

The results also show that it would be incorrect to talk about the existence of "a" norm of sharing – a plurality of norms clearly exists in our setting, both in the PUBLIC and PRIVATE information conditions. Although in the PUBLIC condition a majority of people perceive that full sharing is the most appropriate thing to do, the share of people who disagree with this is not negligible (about a quarter of subjects). Moreover, the full sharing norm is no longer majoritarian in PRIVATE. In this sense, our study reveals that, at least in our context, the norm of sharing hypothesized in the literature, is not as strong as previously thought.

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[11] The finding that information asymmetries can influence the perception of what constitutes appropriate behavior, chimes in with analogous results from the broader experimental literature on norm compliance. Krupka and Weber (2013), for instance, show that giving nothing in the dictator game is viewed as relatively more acceptable if the recipient is kept in the dark about the possibility of receiving positive amounts. In a labor context, Nikiforakis et al. (2014) show that it is relatively more acceptable for senior workers to exploit junior workers if the latter are not fully aware of the extent of the exploitation.

An interesting question that follows from this result, is whether there are any systematic individual and network characteristics that can explain the differences in norms across different subgroups of subjects. We address this question by performing multinomial logit regression analysis. In the regression model, the dependent variable is a categorical variable describing whether a subject perceives a strict sharing norm, a moderate sharing norm, or a pro-saving norm. As regressors, we include a treatment dummy (1 if PRIVATE, 0 otherwise), the socio-demographic variables, behavioral preferences measurements, and social pressure indicators listed in Table 1, as well as village and enumerator fixed-effects.

We also include the social network data collected in the household survey. For each subject, we have data on 12 types of interactions with other members of their village: social activities with relatives or friends; borrowing/lending money or food; visiting or being visited by other village members; receiving or giving advice to others; going to church or medical facilities with others. We combine these data to construct, for each individual, a measure of the *degree* and *clustering* of their aggregate social network.[12] Degree captures the number of direct connections that each subject has in the village, that is, their immediate network. Clustering measures the fraction of these connections that are themselves connected with one another, that is, a measure of how interconnected an individual's network is. Intuitively, degree may matter for the type of norm one perceives because the higher the degree, the more people (and normative ideals) a subject may be exposed to. We suspect that this may work against the more traditional and strict norms, since individuals may be tempted to abandon these norms once they become aware of the existence of the pro-saving norm. Clustering may also matter for the formation of normative

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[12] See OSM A for details on the formal derivations.

ideals, especially in a situation with plurality of social norms, since it may be easier to support one's norm within self-contained cliques of like-minded people.

Table 2 reports the regression results. Although the model has been estimated with the full list of regressors mentioned above, for ease of readability, the table only reports variables with statistically significant coefficients in at least one of the three possible bilateral comparisons (the full regression is reproduced in OSM, Table F1). Results are reported as percentage changes in the odds of being classified within a certain norm type rather than an alternative type: a "pro-saving norm" type rather than a "moderate norm" type in the first column; a "pro-saving norm" type rather than a "strict norm" type in the second column; and a "moderate norm" type rather than a "strict norm" type in the third column.

We see three clear patterns in the data. First, the regression confirms that the private information condition increases dramatically the odds of being classified as someone who perceives the pro-saving norm rather than either of the two stricter norms of sharing. These effects are significant at the 1% level and confirm the results of our earlier univariate analysis.

Second, focusing on the socio-demographic, preference and social pressure variables, we find that subjects who perceive the strict norm are on average older, poorer, more negatively reciprocal, less willing to contribute to public goods, and more financially literate. The regressions show that these factors increase the odds of being classified as a "strict norm" type as opposed to both the "moderate norm" and the "pro-saving norm" types. We find it intuitively

Table 2 – Determinants of Sharing Norm Types

	Pro-saving norm vs. Moderate norm	Pro-saving norm vs. Strict norm	Moderate norm vs. Strict norm
1 if PRIVATE	890.7*** (0.000)	512.3*** (0.003)	-38.2 (0.323)
Age	-7.7 (0.751)	-56.4*** (0.008)	-52.8*** (0.009)
1 if Married	170.3** (0.047)	-36.6 (0.530)	-76.6** (0.018)
Income (in Ksh1000)	-10.3 (0.581)	88.8* (0.079)	110.5** (0.030)
Positive Reciprocity	114.1* (0.057)	80.2 (0.205)	-15.8 (0.585)
Negative Reciprocity	38.0 (0.419)	-82.9*** (0.001)	-87.6*** (0.000)
PGG Contribution	6.8 (0.770)	79.5** (0.050)	68.1** (0.041)
Financial Literacy	34.2 (0.351)	-52.7** (0.046)	-64.8*** (0.001)
Gifts & Loans (in Ksh1000)	-19.9 (0.287)	25.7 (0.351)	57.0* (0.061)
Degree	27.4 (0.359)	130.7** (0.030)	81.1* (0.064)
Clustering	43.8* (0.091)	122.3** (0.014)	54.6 (0.151)

Note: Multinomial logit regression with robust standard errors. The dependent variable is a categorical variable measuring the type of norm that a subject perceives (as defined by the hierarchical cluster analysis). Each column shows the percentage changes in the odds ratios of being classified as type *m* (listed first in the column heading) rather than type *n* (listed second in the column heading). For dummy variables (PRIVATE and Married in the table), we compute the change in the odds for a unit increase in the variable. For continuous variables, we compute changes for a standard deviation increase in the explanatory variable (standard deviations are: 12.8 for Age, 31.4 for Income, 1.9 for Positive Reciprocity, 3.2 for Negative Reciprocity, 4.8 for PGG Contributions, 1.1 for Financial Literacy, 1.8 for Gifts & Loans, 4.9 for Degree and 0.1 for Clustering). Other control variables included in the model but not reported in the table are: gender, education, savings, patience, risk aversion, altruism, trust, number of correct answers in the Raven matrix task, feeling of obligation to share, perceived claims by others. A constant is also included in all models, but omitted from the Table. P-values are reported in parentheses (*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level). The number of observations is 224 because we have missing values in the explanatory variables of 4 subjects. The pseudo R^2 value is 0.394.

plausible that the strict norm, that harshly penalizes deviations from full sharing, is positively associated with age and traits like the willingness to retaliate against others at a cost to oneself, and negatively associated with income and willingness to contribute to public goods (implying that these subjects are probably on the demand side of the sharing market, namely, they are in need of financial help from others).[13]

We also find some factors that explain the differences between the "moderate norm" type and the other types. Perceptions that one is exposed to greater financial demands by other village members (captured by the variable *Gifts & Loans*) increases (perhaps self-servingly) the odds of being a "moderate norm" type rather than a "strict norm" type. Moreover, we find some negative associations between the "moderate norm" type and positive reciprocity and marital status.

Finally, the third set of results that emerges from the regressions concerns the network data. First, we find that individuals who are connected to a higher number of people in the village are less likely to be classified as a "strict norm" type – possibly reflecting the fact that, as discussed above, more connected people are more likely to come into contact with the plurality of norms and opinions that exist in their villages, and switch away from the more traditional norms. In support to this interpretation, the regression models estimated separately for each type of network show that this aggregate effect is partly driven by the number of people a subject turns to in seeking advice (available upon request).

We also find that individuals who belong to networks that are more clustered are more likely to embrace the "pro-saving" norm. This could reflect the fact that it is easier to sustain such a norm – especially one that goes against tradition – in self-contained cliques. To find

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[13] We were somewhat surprised by the positive association between strict norm type and financial literacy. Upon further investigation, we found that the effect is driven by answers to two of the four questions that underlie the variable, about borrowing from money lenders and risk associated with planting crops.

support for this interpretation, we checked whether, compared to subjects who perceive the two

stricter norms, subjects who perceive the "pro-saving" norm are indeed more likely to be

connected with individuals who support the same type of norm (i.e., to be cliquish). Using the

networks data, we identified, for each subject in our experiment, the individuals who are part of

their immediate network and who took part in the experiment (so that we have data on their

norms). For each subject, we then compute the share of connections who support either type of

norm.[14] Figure 2 reports these shares, averaged across our subjects.

Figure 2 – Share of Subjects' Connections Who Support Each Norm
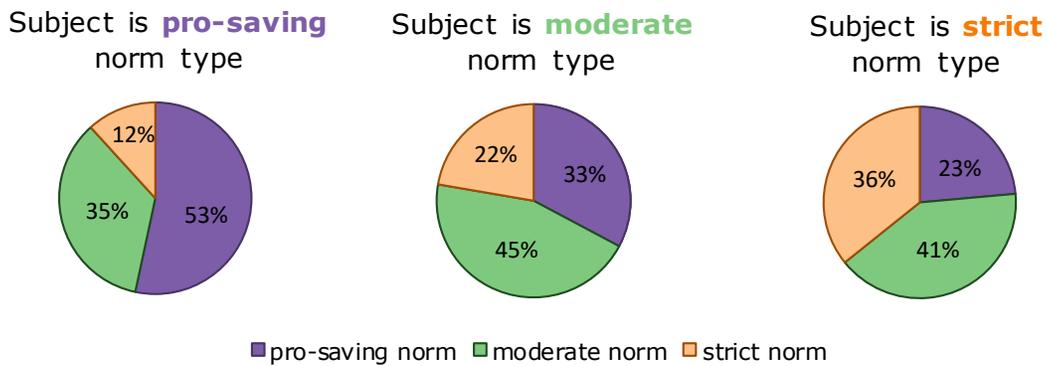
Note: Each pie-chart shows, disaggregated by subjects' type, the share of subjects' connections who are classified as a "pro-saving norm", "moderate norm" or "strict norm" type. Eleven subjects have no connection who participated in the experiment, so the figure is based on averages across 79 subjects classified as "pro-saving norm" type, 83 classified as "moderate norm" type, and 55 classified as "strict norm" type.

The figure shows that subjects of each type are relatively more likely to be associated

with those who uphold their same norm, reflecting a tendency for homophily that is typical of

self-formed social groups (McPherson et al., 2001). However, it is also evident that "pro-saving

norm" types tend to be relatively more homophilous than other types: 53% of their connections

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[14] Ideally one would like to perform this exercise using all the connections that a subject has named in the network survey. This, however, is not possible since only a subset of village members were invited to take part in the experiment (where we measured norms), and so we can only check the type of norms associated with this subset of connections. However, since subjects were randomly invited to the experiment and attrition was small, this should not be a problem.

are "pro-saving norm" types too, which is significantly different from the proportion of "pro-saving norm" connections of the other two norm types (pro-saving norm vs. strict norm: $p <$ 0.001; pro-saving norm vs. moderate norm: $p < 0.001$; these and the subsequent p-values are corrected for multiple comparisons using the Benjamini-Hochberg procedure). Moreover, "pro-saving norm" types are significantly less likely to associate with "strict norm" individuals: only 12% of their connections support the strict norm compared to 22% for "moderate norm" types ($p < 0.001$) and 36% for "strict norm" types ($p = 0.009$). There are instead fewer differences between the type of connections of "moderate norm" and "strict norm" types (we only detect a significant difference in the share of "strict norm" connections, which is higher among "strict norm" types; $p = 0.012$).

This result is remarkable: it suggests that the distinctions between norm types that we measure in the experiment correspond to differences in the composition of the social networks of the subjects outside of the experiment. Moreover, it supports the interpretation that, in the context of our villages, the pro-saving norm is likely to have developed within self-contained cliques of like-minded people who interact with one another and are relatively isolated from village members who instead support the strictest norm of sharing.

Overall, these results show that our classification of subjects into norm types reflects some intuitive characteristics of the individual as well as the network in which they are embedded. We find this reassuring since it suggests that the classification captures some genuine underlying differences between individuals assigned to different social norm types. In the next section, we will analyze how individuals belonging to each norm type responded in terms of saving behavior to our treatment manipulation regarding the observability of experimental earnings.

4.2 Saving Behavior and the Impact of Observability of Earnings

The previous sub-section has shown that observability of income affects the perception of the obligations to share with others. When income can be kept private, so that one can plausibly refuse to share with others without appearing unwilling to do so, nearly half of the subjects think that a person ought to resist pressures to share and instead should save one's income. When income is observable, however, a majority of people think that full sharing is the most appropriate behavior. In this sub-section, we ask how observability of income affects actual saving behavior.

To do so, we use the data that our partner bank shared regarding bank account usage of the subjects who successfully opened an account with the bank at the end of the experiment. Note that, in this analysis of savings behavior, we include 217 of the 228 participants. Eleven of the participants experienced problems with their bank accounts: 1 subject experienced a delay in the activation of their bank account of more than one month resulting in no available data; and 10 subjects had loan arrears from previous financial activities which were automatically deducted from their balance after the opening of their account.[15]

We paid the money that a subject had earned in the experiment directly into their new bank accounts, and promised that, after one month, we would increase these earnings by 50% after first subtracting any money they had withdrawn during the period. Thus, we use the share of experimental money that a subject left in the bank account as a measure of their saving behavior in the month following the experiment. We examine whether subjects who were assigned to the PUBLIC treatment, in which experimental earnings were publicly observable by other

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[15] Comparison of variables in our balance test between these 11 and the 217 participants were insignificant, except for variable on obligation to share. Here the 11 were significantly (p = 0.011) more likely to respond with a lower rating on how obliged they felt to share money with someone else. Excluding these 11 from the previous analysis does not alter the results in any material way.

participants in their session, are more or less likely to save their earnings compared to subjects in the PRIVATE treatment, whose earnings were kept completely private during the experiment.

Two effects are potentially at play when income is observable by other village members. On the one hand, pressures to share income may be stronger when others in the village know the amount of money that a person has earned in the experiment. This is because there may be more demands to share and/or it may be harder to resist these demands without being able to plausibly deny having earned much money in the experiment. This mechanism would lead to lower savings in PUBLIC than in PRIVATE. On the other hand, observability may also have a positive effect on savings, as argued in a recent literature showing that making saving amounts observable to others can have beneficial effects on savings by creating reputational pressures on the individual to stick to one's saving goals (e.g., Kast et al., 2018; Breza and Chandrasekhar, 2019). Although in our setting individuals do not set any specific saving goal for themselves, it is likely that the very generous interest rate that we offered on their savings could trigger analogous reputational pressures, since one may be viewed as irresponsible and short-sighted if they withdraw money from the account.

Importantly, the relative strength of these two opposing effects may depend on the type of norm that an individual perceives being upheld in their social network. In particular, pressures to share income should have less bite for subjects who perceive a "pro-saving norm". As we have seen, resisting the pressures to share is considered socially appropriate by these subjects, even when others have full observability of income. This suggests that, among "pro-saving norm" subjects, the negative effect of observability may be small and the PUBLIC treatment may have a *positive* net effect. In contrast, the negative effect of observability may be stronger for the remaining subjects, who perceive either a moderate or strict saving norm; such a negative effect

could compensate, or even outweigh, any positive effect of observability, and could be amplified by their social network characteristics.

We start by examining these specific effects in Figure 3, which plots the share of experimental money that a subject had in the account at the end of the month following the experiment (i.e., the amount that we increased by 50%), in the PRIVATE and PUBLIC treatments. Generally, subjects managed to save a fairly large share of their experimental money (around 70% on average) – which is a likely reflection of the substantial interest rate we paid on their savings.

Figure 3 – Saving Behavior, by Norm Type and Gender
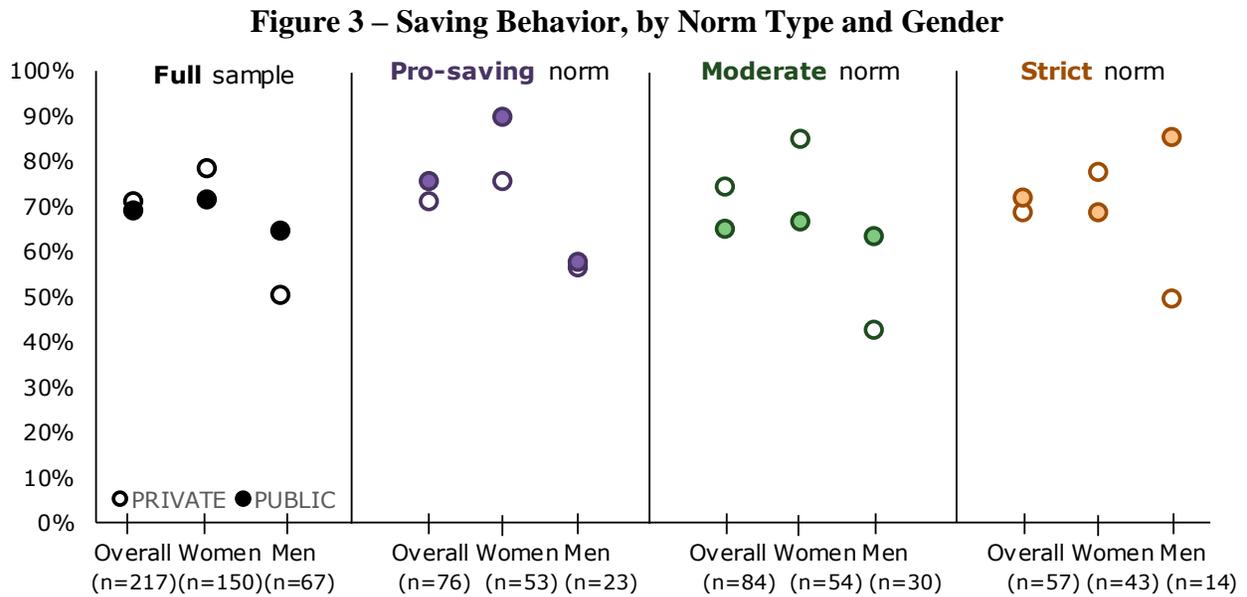
Note: The figure shows the share of experimental money saved by subject in the month following the experiment, disaggregated by treatment (full dots = PUBLIC, hollow dots = PRIVATE). The first panel shows aggregate data from the full sample. The second panel focuses on subjects who support the pro-saving norm, the third panel on subjects who support the moderate norm and the fourth on subjects who support the strict norm. In each panel we report average saving behavior across all subjects in the first column, for women in the second, and men in the third. The number of observations underlying each comparison are reported below the figure.

The first column in the first panel of the figure shows the aggregate treatment effect among our 217 subjects. Income privacy has a slightly more positive effect on savings but is very

small in magnitude. In acknowledgement of the existing empirical literature which shows the effect of social pressure to share is particularly marked among women (e.g., Jakiela and Ozier, 2016; Boltz et al., 2019), we also report data disaggregated by gender. The first finding is that women save more than men. The second finding is that the effect of privacy differs by gender: women save more in the PRIVATE treatment, whereas men save more in the PUBLIC treatment.

The remaining three panels show the effect of income privacy disaggregated by the type of norm that a subject upholds. For subjects upholding the pro-saving norm, we find that income privacy has a *negative* effect on savings, which is driven by the large effect among women. Privacy has instead a *positive* effect among women who uphold the moderate or strict norm. We observe the reverse pattern among men, although it should be noted that these averages rely on a very small number of observations.

To explore the statistical significance of these effects, we conduct regression analysis of saving behavior. To account for the fact that savings are censored, we use Tobit regression models where the dependent variable is the share of experimental money saved by the subject in the month after the experiment. As regressors, we use a treatment dummy and the controls shown in Table 1. To account for the fact that – as seen in Figure 3 – income privacy has different effects depending on subjects' norm type and gender, in a second specification we also include dummy variables for the moderate and strict norm types, with the pro-saving norm type serving as base category, and interact these dummies with the treatment dummy PRIVATE. We report models that include all subjects, as well as separate models for women and men.

Table 3 presents the results. In the table we only report the coefficients of the treatment dummy, the norm type dummies and the interaction terms, but all models have been run with the full set of covariates (the full regression is reproduced in OSM, Table F2). In all regressions

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without interaction terms (columns 1, 3 and 5), the treatment dummy is not significantly different from zero. Thus, without taking into account the heterogeneity in norms, the aggregate evidence is that removing observability of earnings has no effect on saving behavior.

Table 3 – Effect of Observability of Earnings on Savings

	All subjects		Women only		Men only	
	(1)	(2)	(3)	(4)	(5)	(6)
1 if PRIVATE	-0.01 (0.089)	-0.22 (0.154)	0.06 (0.117)	-0.50** (0.197)	-0.21 (0.141)	-0.21 (0.194)
Moderate norm		-0.23 (0.161)		-0.67*** (0.227)		0.07 (0.198)
Moderate norm * PRIVATE		0.43** (0.210)		0.94*** (0.268)		0.15 (0.317)
Strict norm		-0.00 (0.200)		-0.38 (0.265)		0.57 (0.342)
Strict norm * PRIVATE		0.18 (0.245)		0.55 (0.310)		-0.39 (0.361)
N. Observations	215	215	148	148	67	67
Pseudo R^2	0.127	0.141	0.180	0.223	0.378	0.431

Note: Tobit regressions with robust standard errors in parentheses. The dependent variable is the share of experimental money left in the bank account at the end of the month following the experiment. The first two columns contain data from all subjects; the subsequent two columns contain data from women; and the last two columns contain data from men. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level. Control variables: gender (only in columns 1 and 2), married, age, education, income, savings, patience, risk aversion, altruism, positive and negative reciprocity, trust, contributions to public goods, number of correct answers in the Raven matrix and financial literacy tasks, feeling of obligation to share, perceived claims by others, amount spent on gifts and cash in the past month, degree and clustering. All models also include village fixed effects (we do not include enumerator fixed effects to avoid overfitting, especially in the male-only regressions where we have only 67 observations). A constant is also included in all models but not displayed in the table. We have 215 observations (instead of 217) due to missing values in some of the control variables.

In columns 2, 4 and 6, we report regressions that account for the plurality of norms that we observe in the experiment. Starting with column 2, where we include all subjects, we confirm that privacy has a negative effect for the subjects classified as pro-saving norm type. The coefficient, however, does not reach statistical significance (p = 0.150). The coefficients of the

interaction terms indicate that privacy has the opposite effect for subjects who uphold the moderate norm, while it has an effect close to zero for subjects who uphold the strict norm. The interaction term, however, is only significant for the moderate types ($p = 0.043$; $p = 0.464$ for strict norm types).

The picture becomes sharper when we consider the effect of privacy among women (column 4), which the literature has repeatedly found to be a subgroup particularly susceptible to social pressure to share. Here, for pro-saving norm subjects, we estimate a negative effect of privacy on savings which is statistically significant ($p = 0.013$). In contrast, the interaction terms for subjects who support the moderate and strict norms take the opposite sign. Two F-tests reveal that the effect of privacy is significantly positive for moderate norm subjects ($p = 0.018$), whereas the effect is not significantly different from zero for strict norm subjects ($p = 0.830$).

Finally, column 6 reports estimates of the treatment effect among men. The sample is very small (only 67 subjects) and we do not find any significant effect of privacy among pro-saving norm subjects, nor any significant interaction term for the other norm types.

Overall, these results suggest that – in line with our conjecture – privacy can have different effects among subjects who support different types of norms. For subjects, particularly women, who represent around 70% of our sample, who perceive a moderate norm of sharing, making one's earnings unobservable to others is beneficial for savings. For subjects who however support a pro-saving norm the effect is detrimental: privacy substantially reduces their ability to save their income.

5. CONCLUSIONS

Our paper contributes to the emerging empirical and experimental literature on the social norms that govern the tension between wealth accumulation and sharing with kin, friends and neighbors among communities in developing countries (e.g., Baland et al., 2011; Di Falco and Bulte, 2011, 2015; Dupas and Robinson, 2013; Jakiela and Ozier, 2016; Goldberg, 2017; Boltz et al., 2019). One of the key findings of this literature is that individuals, especially those in poor communities in sub-Saharan Africa, are prepared to incur significant monetary costs in order to keep income and wealth accumulation unobservable by others in their community – a behavioral pattern that is consistent with the existence of strong "sharing norms" in these communities. We complement this evidence by eliciting these norms directly in several small rural communities in Kenya.

Unexpectantly, we find evidence of a plurality of sharing norms in our setting: while some individuals perceive any form of wealth accumulation at the expense of kin, friends and neighbors as completely inappropriate, others find moderate accumulation of wealth acceptable, and a third group even view keeping most of one's earnings for oneself as the most appropriate behavior. This pro-saving norm becomes even majoritarian in settings where income remains unobservable by others.

These results suggest that the norms that prevail in the communities we visited are not as shared, widespread, or as strong as the previous literature suggests. It is interesting to compare our findings with those of Dupas and Robinson (2013) and Jakiela and Ozier (2016), who also ran their experiments in Kenya and found strong social pressure to share income with kin and neighbors. Dupas and Robinson (2013) show that informal saving technologies that allow individuals to turn down requests to share with others substantially increase investment in preventative health. Jakiela and Ozier (2016) find that women in their lab-in-the-field experiment

are prepared to follow financially suboptimal investment strategies if these allow them to conceal their income – particularly when relatives are present in the same session.

We can only speculate as to why our evidence points towards weaker sharing norms, especially given that neither Dupas and Robinson (2013) nor Jakiela and Ozier (2016) measured the norms that prevailed in their settings. We cannot therefore examine how different these norms are relative to those elicited in our context. One interesting difference between our study and those by Dupas and Robinson (2013) and Jakiela and Ozier (2016), is that their studies were run with subjects with lower income and education levels. The average weekly income was approximately US$8 and individuals had on average 6-7 years of schooling. Our sample is substantially richer, with the average weekly income reported in the survey around US$80, earned mostly from farming activities, and individuals spent a longer period in formal education. On average subjects had 8.5 years of schooling, with 70% of the sample reporting at least 8 years of schooling. These differences could potentially explain why the stricter and more traditional sharing norms may have a weaker hold in the communities we visited, compared to those in the previous studies. Indeed, in our analysis we do find evidence that having a lower level of income correlates with the likelihood of upholding a stricter norm. An interesting avenue for further research would be to directly measure sharing norms across a variety of locations within the same country in order to exploit natural variations in socio-demographic and economic characteristics.

Our results also suggest that it is important to directly measure norms due to the presence of heterogeneity in treatment effects, which may threaten the efficacy and scalability of interventions aimed at encouraging investment and savings (e.g., Al-Ubaydli et al., 2017). We show that income secrecy, a feature that the empirical literature has suggested as a potentially

effective remedy against sharing norms to encourage investment and savings, can have very different effects on saving behavior depending on the type of norm that an individual upholds. For the sizeable fraction of individuals (particularly women) who uphold a pro-saving norm, reducing income observability has a *perverse* effect on savings. Thus, introducing saving technologies that reduce observability of wealth accumulation decisions may actually backfire in communities where sharing norms may have a weaker hold. It is therefore important to be able to observe – and not just assume – the type of norms that prevail in a community before designing and implementing interventions that are engineered to withstand those norms.

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ONLINE SUPPLEMENTARY MATERIALS FOR THE PAPER

"ONE SIZE DOESN'T FIT ALL:
PLURALITY OF SOCIAL NORMS AND SAVING BEHAVIOR IN KENYA"

BY HANNA FROMELL, DANIELE NOSENZO, TRUDY OWENS AND FABIO TUFANO

- Appendix A contains details about the social networks elicitation.

- Appendix B contains scripts, instructions and materials used in the experiment.

- Appendix C contains details about the additional experimental games.

- Appendix D contains details about the survey preference questions.

- Appendix E contains details about the hierarchical cluster analysis.

- Appendix F contains regression tables containing the regression models reported in the paper but displaying all control variables

Appendix A - Social networks elicitation

To elicit social network information we used the module designed by Banerjee et al. (2013). This consists of a series of questions that measure the number of connections that an individual has across a variety of social dimensions. For each dimension, respondents provide the names of the people in the village with whom they have a particular relationship or engage in a particular activity. The eight dimensions were: 1) kinship; 2) friendship; 3) visiting one's house or being visited by someone at home; 4) asking advice from someone or giving advice to someone; 5) borrowing or lending money from/to someone; 6) borrowing or lending food from/to someone; 7) going to pray with someone; 8) being accompanied to a medical facility by someone.

We use the names mentioned in the survey to construct, for each of the eight dimensions, an undirected, unweighted network at the household level. This makes use of information provided by the individual in their own questionnaire, but also information that others provided about the individual in their questionnaires (e.g., if person A names individuals B and C as people who visit his/her home, but individual D names person A as someone they visit, we consider the network of "home visits" of person A as comprised of individuals B, C, and D). Following Banerjee et al. (2013), in the paper, we report information on individuals' "aggregate social network", computed by aggregating the information obtained for each type of social network.

We focus on two types of network characteristics, degree and individual clustering. Degree measures the number of connections that an individual has in the village across the seven types of social settings. i.e., the number of nodes that individual i is connected to. Individual clustering measures the fraction of these connections that are themselves connected to one another, i.e., $\frac{\#pairs\ of\ nodes\ linked\ to\ i\ that\ are\ linked\ to\ one\ another}{\#pairs\ of\ nodes\ linked\ to\ i}$.

This section presents the script and instructions (translated in English, the originals were in Swahili and are available upon request) used in the experiment, as well as the sheets given to the participants during the instruction phase and decision-making phase.

INSTRUCTIONS READ ALOUD BY THE EXPERIMENTER

INSTRUCTIONS *[EXPERIMENTER 1 READS. ANOTHER EXPERIMENTER ILLUSTRATES USING SUBJECT SHEET]*

Welcome and thank you everyone for coming. We will play games today. In these games you will have the chance to earn money, which will be yours to keep. We will soon explain the games but first we wish to make a couple of things clear.

Please, everyone switch off your mobile phone. After having switched off your phone put it away. You may not in any way use your phone during this study. We ask you to remain seated during the whole study. If you leave the room, we will not be able to let you continue taking part in this study and we will not be able to pay you. However, in about two hours, there will be a break and you will be give some refreshments.

The money that you will receive today is not our money. The study is part of a research project at a university and the money has been given to us by a research institute. This project is for scientific research and not part of any development project.

If at any time you decide that you do not wish to take part in this study, you are free to leave.

We will play 4 different games in total and we will soon start the first game. We will explain each game before we play it. We will not start any game before we are sure that everyone understands. You will be given the chance to ask questions by raising your hand. Someone will come to you to answer your question in private. Only raise your hand to ask questions when we say it is time for questions. It is important that you do not talk out loud or talk to any of the other participants at any point during this study. Doing this will spoil the game for others and we may have to end the game without paying you.

In the games you will make decisions. How much money you earn will depend on your decisions, others' decisions, and on luck. You will only learn about your earnings at the end of the study. At the end we will randomly determine which game will be used to calculate your earnings. This will be done using this bag *[EXPERIMENTER 2: SHOW BAG]* in which there are 4 pieces of papers numbered 1 to 4. At the end of the study, each participant will draw one of the pieces of

paper out from the bag without looking and the number written on it will be the game that will determine that participant's earnings. After a participant has drawn a number from the bag, the number is put back into the bag again so that each participant has the same chance of selecting each of the four games. *[EXPERIMENTERS 2 AND 3: ILLUSTRATE BY DRAWING AND REPLACING PAPERS FROM THE BAG]* You will be paid your earnings after the study. Since the amount that you earn will depend on how you make decisions in the games and on which of the games you draw for payment, some of you will earn more than others and others will earn less. We will explain in detail how the payment is made to you at the end of the study.

In addition to the money that you earn from one of the games, each of you will receive a thank you payment of Ksh 300. This money is not part of the game and you will receive this money for certain, irrespective of which game is selected for payment.

We will now begin Game 1.

[Game 1]

This is Game 1. In this game you will play with another participant in this room. We will call this participant "your partner". You will not play any game with this participant afterwards. You will never find out who your partner is and they will not find out who you are. No-one except us will know who your partner is and how you have played the game, and we will not tell anyone else.

Your earnings in this game will depend on the decisions made by both you and your partner, so please listen carefully to the instructions.

You and your partner have 20 blue chips each in front of you. Each chip is worth Ksh 20. You and your partner also have one small and one large envelope each in front of you. Your task is to divide the 20 blue chips between the two envelopes.

The small envelope is your own envelope. Any blue chips you put into the small envelope will pay Ksh 20 per chip to you, and nothing to your partner.

The large envelope belongs to both you and your partner. At the end of the game the blue chips inside your large envelope and the large envelope of your partner will all be put into one common envelope *[EXPERIMENTER 2: SHOW ENVELOPE TO SUBJECTS]*. For each blue chip inside the common envelope, we will add one white chip that is worth Ksh 10 *[EXPERIMENTER 2: SHOW WHITE CHIP TO SUBJECTS]*. This means that for every blue chip you put in the large envelope, a value of Ksh 30 will result in the common envelope: 20 Ksh from the blue chip and Ksh 10 for the extra added white chip. The resulting sum of money from all the blue and white chips inside the common envelope will then be calculated and divided equally between you and your partner.

Your total earnings from this game will be the sum of the money from the chips that you've put in your small envelope and your share of the resulting money from the common envelope.

Now, let's look at some examples of how earnings will be determined between you and your partner.

Please turn over to page 1 in the document inside your box so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 1.]*

Example 1

In this example 1, you have put 20 blue chips into your own small envelope and no blue chips in the large envelope. You partner has also put 20 blue chips into his or her own small envelope and no blue chips in the large envelope.

Please listen to my colleagues who will show this example. *[EXPERIMENTER 2 AND 3 ILLUSTRATES ACTIONS].*

Since there are no blue chips in either of the large envelopes, there are no blue chips that are put in the common envelope and we will not add any white chips to the common envelope. *[ILLUSTRATE BY TAKING THE TWO BIG ENVELOPES, TURNING THEM UPSIDE DOWN AND THEN SHOWING COMMON ENVELOPE].*

Therefore, there is no money to share, between you and your partner, inside the common envelope. *[SHOW SUM-UP ENVELOPE].* Since for every blue chip that you put in your own small envelope will pay Ksh 20 to you, you would earn Ksh 400 from your own small envelope. *[ILLUSTRATE BY HOLDING UP THE SMALL ENVELOPE FROM EXPERIMENTER 2].* Your partner would also earn Ksh 400 from his or her own small envelope. *[ILLUSTRATE BY HOLDING UP THE SMALL ENVELOPE FROM EXPERIMENTER 3].* Your total earnings are therefore Ksh 400 *[POINT TO EXPERIMENTER 2]* and your partner's total earnings are Ksh 400 *[POINT TO EXPERIMENTER 3].*

Before we look at another example, does anyone have any questions?

Please turn over to the second page in the document inside your box so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 2.]*

Example 2

In this example 2, you have put all 20 blue chips in the large envelope. You partner has also put all 20 blue chips in the large envelope.

Please listen to my colleagues who will show this example. *[EXPERIMENTER 2 AND 3 ILLUSTRATES ACTIONS]*.

Since there are 40 blue chips in the two large envelopes together, these 40 blue chips are put in the common envelope. *[ILLUSTRATE BY TAKING THE TWO BIG ENVELOPES, EMPTYING THEM INTO COMMON ENVELOPE]*. Since for every blue chip that is put in the common envelope, one white chip is added, we will add 40 white chips to the common envelope. *[ILLUSTRATE BY ADDING WHITE CHIPS INTO COMMON ENVELOPE]* Since the blue chips are worth Ksh 20 and the white chips are worth Ksh 10, there is Ksh 1200 in total in the common envelope, which then is shared equally between you and your partner. You and your partner therefore receive Ksh 600 from the common envelope each. *[SHOW COMMON ENVELOPE AND POINT TO EXPERIMENTER 2 AND 3]*.

Since there are no blue chips in your own small envelope, you would not earn any money from this envelope. *[TAKE THE SMALL ENVELOPE FROM EXPERIMENTER 2 AND HOLD IT UPSIDE DOWN.]* Your partner would not earn any money from his or her own small envelope either. *[TAKE THE SMALL ENVELOPE FROM EXPERIMENTER 3 AND HOLD IT UPSIDE DOWN.]* Your total earnings are therefore Ksh 600 *[POINT TO EXPERIMENTER 2]* and your partner's total earnings are Ksh 600 *[POINT TO EXPERIMENTER 3]*.

Before we look at another example, does anyone have any questions?

Please turn over to the third page in the document inside your box so that you have this page up. [EXPERIMENTER 2: *HOLD UP PAGE 3.]*

Example 3

In this example 3, you have put 10 blue chips into your own small envelope and 10 blue chips in the large envelope. You partner has put 16 blue chips into his or her own small envelope and 4 blue chips in the large envelope.

Please listen to my colleagues who will show this example. *[EXPERIMENTER 2 AND 3 ILLUSTRATES ACTIONS]*.

Since there are 14 blue chips in the two large envelopes together, these 14 blue chips are put in the common envelope. *[ILLUSTRATE BY TAKING THE TWO BIG ENVELOPES, EMPYING THEM INTO COMMON ENVELOPE]*. Since for every blue chip that is put in the common envelope, one white chip is added, we will add 14 white chips to the common envelope. *[ILLUSTRATE BY ADDING WHITE CHIPS INTO SUM-UP ENVELOPE]* Since the blue chips are worth Ksh 20 and the white chips are worth Ksh 10, there is Ksh 420 in total in the common envelope, which then is shared equally between you and your partner. You and your partner

therefore receive Ksh 210 from the common envelope each. *[SHOW SUM-UP ENVELOPE AND POINT TO EXPERIMENTER 2 AND 3].*

Since for every blue chip that you put in your own small envelope will pay Ksh 20 to you, you would earn Ksh 200 from your own small envelope. *[ILLUSTRATE BY HOLDING UP THE SMALL ENVELOPE FROM EXPERIMENTER 2].* Your partner would earn Ksh 320 from his or her own small envelope. *[ILLUSTRATE BY HOLDING UP THE SMALL ENVELOPE FROM EXPERIMENTER 3].* Your total earnings are therefore Ksh 410 *[POINT TO EXPERIMENTER 2]* and your partner's total earnings are Ksh 530 *[POINT TO EXPERIMENTER 3].*

Before we continue, we want to make sure that everyone understands how your earnings in this game will be calculated. To do this we will read out three questions about the game, which you will answer in private using your pen and your paper. Please do not say the answer out loud. We want everyone to try answering the question on their own.

Please turn over to the fourth page in the document inside your box so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 4.]*

This is question 1: If you chose to put all your 20 blue chips into your own small envelope and your partner chose to put 15 of his or her blue chips into his or her small envelope and the other 5 into the large envelope, what would be your earnings? You will write down your answer inside the red box at the bottom of the page. In a short while we will come and look at your answers. Now please take your time to make your answers.

Please turn over to the fifth page in the document inside your box so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 5.]*

The second question is: If you chose to put all your 20 blue chips into the large envelope and your partner chose to put 5 of his or her blue chips into his or her small envelope and the other 15 into the large envelope, what would be your earnings? Please write down your answer inside the red box at the bottom of the page.

We will now come and look at your answers.

Before we begin with Game 1, does anyone have any questions?

Now, please take your time to make your choice using the chips and the envelopes.

[Game 2]

This is Game 2. In this game you will play on your own and your earnings will only depend on your answers. You will answer three questions to which there is only one right answer. You will earn Ksh 300 per correct answer.

For each question you have a number of different options to choose from. Only one of them is correct. You will indicate the option you believe is the right answer by circling that option using your pen. You must answer these questions on your own. Please remember not to talk or communicate with anyone else. Please always keep the sheet of paper inside the box in front of you. If we do see you communicating with anyone else, by talking or by making any type of signals, then we may not be able to pay you. If you have any questions, just raise your hand and one of us will come to you.

The questions in this game will all be very similar to each other. We will first go through two practice questions so that you will learn what the questions are like and how to answer them. You will not earn any money from the two practice questions. You will have the chance to ask questions before we start the game.

Please turn over to page 1 in the document inside your box so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 1.]*

This is practice question 1.

Look at the large figure in front of you. It is a pattern where a piece is missing. *[EXPERIMENTER 2: POINT TO THE PLACE WHERE THE PIECE IS MISSING]* Under the figure there are 8 small pieces that all look different from each other. The shapes would all fit in the missing piece of the figure. However, only one of the 8 pieces matches the overall pattern of the figure. The question is: which of the 8 pieces is the one that matches the overall pattern of the figure? You indicate which piece you believe is the right answer by circling that piece using your pen. Now please take your time to make your answer. Please do not turn the page until I tell you to do so.

Now, please turn over to page 2 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 2.]*

This is practice question 2:

Look at the large figure in front of you. Just like in the practice question before, it is a pattern where a piece is missing. *[EXPERIMENTER 2: POINT TO THE PLACE WHERE THE PIECE IS MISSING]* As you can see the pattern is different from the one in the question before. Just like before there are 8 small pieces under the figure that all look different from each other. Also this

time, the question is: which of the 8 pieces is the one that matches the overall pattern of the figure? You indicate which piece you believe is the right answer by circling that piece using your pen. Now please take your time to make your answer. Please do not turn the page until I tell you to do so.

We will now come and look at your answers.

Now everyone has answered the two practice questions correctly. In each of the three questions in Game 2 you will have a large figure in front of you. Just like in the practice questions you have done, the figure will have a pattern where a piece is missing. Under the figure, there will be 8 small pieces that all look different from each other.

In each of the three questions, you will be asked the same question: Which of the 8 pieces is the one that matches the overall pattern of the figure? You will indicate which piece you believe is the right answer by circling that piece using your pen.

Before we begin Game 2, does anyone have any questions?

Please turn over to page 3 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 3.]*

This is Question 1:

Which of the 8 pieces is the one that matches the overall pattern of the figure? You indicate which piece you believe is the right answer by circling that piece using your pen. Now please take your time to make your answer. Please do not turn the page until I tell you to do so.

Now, please turn over to page 4 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 4.]*

This is Question 2:

Which of the 8 pieces is the one that matches the overall pattern of the figure? Please take your time to make your answer. Please do not turn the page until I tell you to do so.

Now, please turn over to page 5 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 5.]*

This is Question 3:

Which of the 8 pieces is the one that matches the overall pattern of the figure? Please take your time to make your answer.

We will now collect your answers.

[Game 3]

This is Game 3. Similar to the previous game, in this game you will also play on your own and your earnings will only depend on your answers. You will answer four questions to which there is only one right answer. You will earn Ksh 250 per correct answer.

For each question you have a number of different options to choose from. Only one of them is correct. You will indicate the option you believe is the right answer by circling that option using your pen. You must answer these questions on your own. Please remember not to talk or communicate with anyone else. Please always keep the sheet of paper inside the box in front of you. If we do see you communicating with anyone else, by talking or by making any type of signals, then we may not be able to pay you. If you have any questions, just raise your hand and one of us will come to you.

Before we begin with Game 3, does anyone have any questions?

Please turn over to page 1 in the document inside your box so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 1.]*

This is Question 1:

Suppose you borrow Ksh 1000 from a money lender at an interest rate of 2% per month, with no repayment for 3 months. *[POINT TO THE ILLUSTRATION OF THE QUESTION ON TOP OF THE PAGE.]* After 3 months, do you owe less than Ksh 1020, exactly Ksh 1020, or more than Ksh 1020? *[POINT TO THE RESPECTIVE OPTIONS ON THE PAGE WHILE MENTIONING THEM.]*

Please circle the red box if you think that the answer is "I owe less than Ksh 1020". Circle the blue box if you think that the answer is "I owe exactly Ksh 1020". Circle the green box if you think that the answer is "I owe more than Ksh 1020". Now please take your time to make your answer. Please do not turn the page until I tell you to do so.

Now, please turn over to page 2 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 2.]*

This is Question 2:

If you have Ksh 1000 in a savings account earning 1% interest per annum, and prices for goods and services rise 2% over a 1-year period *[EXPERIMENTER 2: POINT TO THE ILLUSTRATION OF THE QUESTION ON TOP OF THE PAGE],* can you buy more than, less than, or the same amount of goods in 1 year as you could today, with the money in the account?

[EXPERIMENTER 2: POINT TO THE RESPECTIVE OPTIONS ON THE PAGE WHILE MENTIONING THEM.]

Please circle the red box if you think that the answer is "In 1 year, I can buy more than the amount of goods I could buy today". Circle the blue box if you think that the answer is "In 1 year, I can buy less than the amount of goods I could buy today". Circle the green box if you think that the answer is "In 1 year, I can buy the same amount of goods I could buy today".

Now please take your time to make your answer. Please do not turn the page until I tell you to do so.

Now, please turn over to page 3 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 3.]*

This is Question 3:

Is it riskier to plant multiple crops or one crop? *[EXPERIMENTER 2: POINT TO THE ILLUSTRATION OF THE QUESTION ON TOP OF THE PAGE.]*

Please circle the red box if you think that the answer is "It is riskier to plant multiple crops". Circle the blue box if you think that the answer is "It is riskier to plant one crop".

Now please take your time to make your answer. Please do not turn the page until I tell you to do so.

Now, please turn over to page 4 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 4.]*

This is Question 4:

Suppose you need to borrow Ksh 5000. Two people offer you a loan. One loan requires you to pay back Ksh 6000 in 1 month. The second loan requires you to pay back in 1 month Ksh 5000 plus 15% interest. Which loan represents a better deal for you? *[EXPERIMENTER 2: POINT TO THE ILLUSTRATION OF THE QUESTION ON TOP OF THE PAGE.]*

Please circle the red box if you think that the answer is "The loan that requires me to pay back Ksh 6000 in 1 month is a better deal for me". Circle the blue box if you think that the answer is "The loan that requires me to pay back Ksh 5000 plus 15% interest in 1 month is a better deal for me". *[EXPERIMENTER 2: POINT TO THE RESPECTIVE OPTIONS ON THE PAGE WHILE MENTIONING THEM]*

Now please take your time to make your answer.

We will now collect your answers.

[Game 4]

This is Game 4 and thus the last game we play. In this game you will play with another participant in this room (we will call this participant "your partner"). You have not played any game with this participant before now. You will never find out who your partner is and they will not find out who you are. No-one except us will know who your partner is and how you have played the game, and we will not tell anyone else.

In this game you can either earn Ksh 1200 or nothing. Whether or not you earn Ksh 1200 depends on your decisions and the decisions of your partner, so please listen carefully to the instructions.

Both you and your partner will hear the same short story about a given person. The person in the story will have to decide how to act. The person can choose among several possible actions. Your task is to judge, for each action, how socially appropriate that action is. An action is "socially appropriate" if most people would agree it is the "correct" thing to do. Another way to think about what we mean is that if the person were to act in an *inappropriate* way, then someone else might be angry with the person.

Let's give an example of how you will hear a story and how to judge the actions in the story.

EXAMPLE STORY

Imagine that a person enters a shop. On the floor they notice a handbag that has been dropped. The person can choose one of the two following actions: *give the handbag to the shop owner*, or *take the handbag*.

Please turn over to Page 1. *[EXPERIMENTER 2: HOLD UP PAGE 1]* As you can see, the action "*give the handbag to the shop owner*" is shown on this page. Now turn over to Page 2. The action "*take the handbag*" is shown on this page. Now turn back to Page 1 again.

If this were the story in Game 4, you would judge the appropriateness of each action that the person can choose by circling a box: "*Very Inappropriate*"; "*Somewhat Inappropriate*"; "*Somewhat Appropriate*"; or "*Very Appropriate*". *[EXPERIMENTER 2: INDICATE ON PAGE 1]*

Imagine that you think that giving the handbag to the shop manager is "*very appropriate*". Then you would indicate your response as done in the example. *[EXPERIMENTER 2: INDICATE ON PAGE 1]*

Please turn to Page 2. *[EXPERIMENTER 2: HOLD UP PAGE 2]*

Imagine that you think that taking the handbag is "*somewhat inappropriate*". Then you would indicate your response as done in the example. *[EXPERIMENTER 2: INDICATE ON PAGE 2]*

This story was only an example story. The story you and your partner will hear is different. Therefore, the actions that you and your partner will judge will also be different from this example. Remember that your partner will be another participant in this room. Whether or not you earn Ksh 1200 in this game will depend on *your* judgments and the judgments of your *partner*. At the end of the study, you will pick one action that the person in the story can choose. You will do this without looking, by using a bag that contains one different piece of paper for every action the person in the story can take *[SHOW BAG]*.

Each piece of paper has one of the actions that the person can take written on it. *[ILLUSTRATE BY PULLING ONE FROM BAG.]* We will draw one of the pieces of paper out from the bag without looking. We will then compare how you and your partner have judged the selected action. If you and your partner have judged the action in the exact same way, you will earn Ksh 1200 each; otherwise you will earn nothing in this game.

For example, imagine that this example story was the real story in this game. You would first have judged how socially appropriate each of these actions were. Then, at the end of the study, you would have picked, without looking, only one of the actions that you decided on before, by picking a piece of paper from the bag. *[ILLUSTRATE BY PULLING ONE FROM BAG.].* For example, say you would have selected the action "Take the handbag". We would then have compared the judgements made by you and your partner. For example, say that your partner had judged the action 'somewhat inappropriate'. Then you would both have earned Ksh 1200 if you also had judged the action as 'somewhat inappropriate'. If you had given another judgment, you and your partner would have earned nothing in this game.

Remember that you are not allowed to talk to or communicate with any other participant. You have to make your judgement without knowing what judgement your partner will make. Instead, you have to make the judgement that you think that your partner will make.

Before we continue, we want to make sure that everyone understands how your earnings in this game will be calculated. To do this we will read out two questions about what *your* earnings would be if you and your partner have judged the selected action in a certain way. Please answer by writing the amount of earnings that you think you would earn on the piece of paper in front of you under the question. Please do not say the answer out loud. We want everyone to try answering the question on their own. We will come around and check your answers before we continue.

Please turn over to page 3 in the document inside your box so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 3.]*

Let's look at the first question. As we have already explained, only one of the actions that the person in the story can take will be selected. Imagine that for the action that is selected, you have

judged that action '*Very appropriate*' and that your partner has judged that action '*Very appropriate*'. Then, how much would your earnings be? Please write down your answer inside the red box.

Now, please turn over to page 4 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 3.]*

The second question is: Imagine that for the action that is selected, you have judged that action '*Very appropriate*' and that your partner has judged that action '*Somewhat inappropriate*'. Then, how much would your earnings be? Please write down your answer inside the red box.

We will now come and look at your answers.

Before we begin with Game 4, does anyone have any questions?

You will now hear the story. Please listen carefully as you soon will be asked to judge different actions that the person in the story can take.

Now, this is the story

Consider a person in your village who has had good earnings over the last month and as a result has accumulated an extra Ksh 900 in addition to their normal income. **Furthermore, every person in the village knows the amount of money that the person has earned. [PUBLIC]** *Furthermore, there is no person in the village who will ever know the amount of money that the person has earned. [PRIVATE]* The person would like to save the Ksh 900 in order to grow their business and generate a greater income for themselves in the future.

One of the person's friends has had poor earnings and is now in need of Ksh 1050 to be able to pay for their children's school fees. So the friend asks the person if they could give them the money.

The person must decide how much of their Ksh 900 to save for themselves and how much to give to their friend who is in need of money. The person can save *all*, *part*, or *none* of their money for themselves.

Since every person in the village will know how much money the person has accumulated and therefore everyone will know how much the person decides to save for him or herself [PUBLIC].

Since no one in the village will ever find out how much money the person has accumulated and therefore no-one will ever find out how much the person decides to save for him or herself [PRIVATE].

Now, please turn over to page 5 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 5.]*

Your task is to judge, for each action, whether that action is "Very Inappropriate", "Somewhat Inappropriate", "Somewhat Appropriate", or "Very Appropriate". *[EXPERIMENTER 2: SHOW THE DIFFERENT RATINGS ON THE PAGE]* You will do so by circling only one box per action on your sheet of paper. After having judged this action you will have to judge all other actions in the story as well. *[EXPERIMENTER 2: INDICATE WHERE EACH CHOICE IS MADE WITHOUT GIVING EXAMPLES]*

Remember that by "appropriate" we mean an action that most people would agree is the "correct" thing to do. The person can choose one of six actions. Each of the actions is shown on a different page in your document. We will look at each of these six actions together, one by one. My colleague will show you what each of these pages look like. You do not have to follow by turning your own pages. Just look at my colleague.

One of the actions that the person can take is "Save all for him or herself and give nothing to their friend". This action is shown on the page in front of you and also shown here by my colleague. *[EXPERIMENTER 2: SHOW PAGE]*

Another action that the person can take is "Save Ksh 720 for him or herself and give their friend 180". This action will be on the next page but you will not go there now. Just look at this page shown by my colleague. This is what this action looks like. *[EXPERIMENTER 2: SHOW PAGE]*

Another action that the person can take is "Save Ksh 540 for him or herself and give their friend 360". This is what this action looks like. *[EXPERIMENTER 2: SHOW PAGE]*

Another action that the person can take is "Save Ksh 360 for him or herself and give their friend 540". This is what this action looks like. *[EXPERIMENTER 2: SHOW PAGE]*

Another action that the person can take is "Save Ksh 180 for him or herself and give their friend 720". This is what this action looks like. *[EXPERIMENTER 2: SHOW PAGE]*

Another action that the person can take is "Save none of the money for him or herself and give all to their friend". This is what this action looks like. *[EXPERIMENTER 2: SHOW PAGE]*

At the end of the study, if Game 4 is selected for payment, you will select one of the possible actions that the person can choose. For the selected action, we will compare your judgment with the judgment of your partner. If you and your partner have judged the action in the exact same way, you will be paid Ksh 1200 each; otherwise you and your partner will be paid nothing.

Does anyone have any questions?

Now, we are ready to play Game 4. Make sure you have page 5 up *[EXPERIMENTER 2: HOLD UP PAGE 5]*. We will go through one action at a time. You will start by making your judgement of this action. This action is "Save all for him or herself and give nothing to their friend". You judge this action by indicating whether it is "Very Inappropriate", "Somewhat Inappropriate", "Somewhat Appropriate", or "Very Appropriate". *[EXPERIMENTER 2: INDICATE EACH OF THE BOXES]*. Now take your time to make your judgement of this action by circling only one of the boxes. Please do not turn the page until I tell you to do so.

Please turn over to page 6 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 6]*. This action is "Save Ksh 720 for him or herself and give their friend 180". You judge this action by indicating whether it is "Very Inappropriate", "Somewhat Inappropriate", "Somewhat Appropriate", or "Very Appropriate". *[EXPERIMENTER 2: INDICATE EACH OF THE BOXES]*. Now take your time to make your judgement of this action by circling only one of the boxes. Please do not turn the page until I tell you to do so.

Please turn over to page 7 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 7]*. This action is "Save Ksh 540 for him or herself and give their friend 360". Now take your time to make your judgement of this action by circling only one of the boxes. Please do not turn the page until I tell you to do so.

Please turn over to page 8 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 8.]* This action is "Save Ksh 360 for him or herself and give their friend 540". Now take your time to make your judgement of this action. Please do not turn the page until I tell you to do so.

Please turn over to page 9 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 9.]* This action is "Save Ksh 180 for him or herself and give their friend 720". Now take your time to make your judgement of this action. Please do not turn the page until I tell you to do so.

Please turn over to page 10 so that you have this page up. *[EXPERIMENTER 2: HOLD UP PAGE 10.]* This action is "Save none of the money for him or herself and give all to their friend". Now take your time to make your judgement of this action.

We will now collect your answers.

We have now finished with all the games. Next you will learn how much money you will earn from today's study.

[EXPERIMENTER 3: LIST ALL PARTICIPANTS NAMES ON TWO A2 SHEETS.][PUBLIC]

We will call you one by one here to the front where we will compute your earnings.

When we call your name, please come up to the front and follow my colleague to another room, where you will be helped by another of my colleagues. [PRIVATE]

When we call your name, please come up to the front where you will be assisted by my colleague. [PUBLIC]

You will then select the game that will be used to compute your earnings by drawing a piece of paper from this bag. *[EXPERIMENTER 2: SHOW THE GAME BAG WITH THE FOUR PIECES OF PAPER INSIDE IT].* You will show the number that you draw to the person holding the bag and then put the number back into the bag. In Game 1 and in Game 4 you were matched with another participant in this room. We have just selected the participant that was your partner in Game 1 and the participant that was your partner in Game 4. We did this completely by chance by using a computer that made the selections of participants for us. This means that we did not have any influence on which participants have been selected as your partners. The computer did this automatically on its own. If you draw Game 1 or Game 4, your earnings are computed using both your partner's decision and your decisions. If you draw Game 4, you will make another draw from a different bag to select which of the four actions in the story in Game 4 that will be used for your payment. *[EXPERIMENTER 2: SHOW THE ACTION BAG WITH SIX FOUR PIECES OF PAPER INSIDE IT].*

No-one will see you up here, except us, since you will be behind the wall, so there is no one who will learn which game you have drawn. We will compute your final earnings by adding what you earned in the game that you have drawn to the thank you payment of Ksh 300. The amount that you will earn will depend on your decisions in the games and on which game you draw for payment. Therefore, some of you will earn more than others and some of you will earn less. However, no one else, apart from us up here, will ever know how much you earned and we will not tell anyone else. This means that if you choose to tell someone else how much you earned, they cannot know if this is true or not. We will write your final earnings on a piece of paper and show this to you without showing anyone else in the room. We will then destroy this piece of paper. A paper slip will then be given to you as a proof of participation in this study. Thereafter you may return to your seat. So since you will learn your earnings in private, no one will know how much you earned in today's study. We will now begin calling you up one by one to compute

and inform you of your earnings. When you have learnt your earnings and received your proof of participation, please go back to your seat. It is important that you do not speak to anyone else. If you have any questions, please raise your hand. When you hear your name please come up to the front with the invitation note that you brought with you today. [PRIVATE]

We will compute your final earnings by adding what you earned in the game that you have drawn to the thank you payment of Ksh 300. The amount that you will earn will depend on your decisions in the games and on which game you draw for payment. Therefore, some of you will earn more than others and some of you will earn less. Everyone will know how much you earned. We will announce your final earnings and write them on this board next to your name. We will then write your final earnings on a paper slip. This paper slip will be given to you as proof of participation in this study. Thereafter you may return to your seat. So since we write your earnings on the board, everyone will know how much you earned in today's study. We will now begin calling you up one by one to compute and inform you of your earnings. When you have learnt your earnings and received your receipt and your proof of participation, please go back to your seat. It is important that you do not speak to anyone else. If you have any questions, please raise your hand. When you hear your name please come up to the front with the invitation note that you brought with you today. [PUBLIC]

[CALL FIRST NAME, USING PARTICIPATION LIST]

SCRIPT FOR DESCRIPTION OF SAVING ACCOUNTS

Now each of you knows how much you have earned in today's study. In order to receive your earnings you will have to open a savings account in your name with KCB. There are bank officers here with us today who will assist you with opening the account.

Your earnings will be paid into your savings account tomorrow. To be able to receive your payment you must also show us registration of M-Pesa or an equivalent mobile-banking service. If you do not have such a registration, the bank officer will assist you with this as well. Finally, we will ask you to sign a consent form approving that we may access information about how you are using this savings account.

You can continue to use this account for as long as you want. You can withdraw and deposit money from the account, either by going to a KCB branch or an ATM. You can also withdraw and deposit money via your M-Pesa account on your mobile phone and an M-Pesa agent. The bank officer will explain to you how to use your account and what charges apply for different services. If you have any questions about the account or the interest that it pays you may ask the bank officer today or someone at a KCB branch directly. You will soon be called one-by-one to meet the bank officer to open your account and to learn how to use it.

Before you do so, there is one important piece of information about your earnings in your savings account that you need to know.

We will increase your payment in your account in one month after you have received your payment. This increase will be equal to half the amount of your payment from today. For example, if your payment is Ksh 1000, then you would receive your payment of Ksh 1000 tomorrow. Half of 1000 is 500. So we would increase your payment by Ksh 500 in one month from tomorrow, this being a total of Ksh 1500.

However, we will only increase your whole payment by half if you have not withdrawn any money from your account during this one month, so between tomorrow and **DD__ MONTH_____**.

If you choose to withdraw money in this period, we will reduce the amount that we increase. We will deduct all your withdrawals from the amount that we increase. So only an amount equal to your payment minus your withdrawals will be increased by half after one month.

Let us go through an example.

Imagine that your payment of today is Ksh 500 and you have not withdrawn any money from your account between tomorrow and **DD__ MONTH_____**. You would receive your payment

of Ksh 500 tomorrow. Then we would increase your whole payment by half in one month from tomorrow. Half of 500 is 250. So you would receive another Ksh 250 on **DD__ MONTH_____**.

Let us go through another example.

Your payment of today is Ksh 500 but you have withdrawn money twice from your account between tomorrow and **DD__ MONTH_____**: one of Ksh 100 and another of Ksh 200. So, you have withdrawn Ksh 300 in total. You would receive your payment of Ksh 500 tomorrow. We will deduct your withdrawals of 300 from the amount that we increase. So only an amount equal to your payment of 500 minus your withdrawals of 300 will be increased by half after one month. This means that only an amount of 200 would be increased. Half of 200 is 100. So you would receive another Ksh 100 on **DD__ MONTH_____**.

It does not matter if you add money to your account later. It could be that your payment is Ksh 500, you withdraw Ksh 300 and before the end of the month you deposit Ksh 300 in your account. We would still calculate the amount we are supposed to add by half like this: a payment of Ksh 500, minus a withdrawal of ksh 300 which is Ksh 200. Half of Ksh 200 is Ksh 100. This Ksh 100 is the amount you would receive on **DD__ MONTH_____**.

What will decide the amount you will receive on **DD__ MONTH_____**.is your total payment from today subtracting your total withdrawals made between tomorrow and **DD__ MONTH_____**.

If anyone has any question about how the account works, please raise your hand now.

As we have said before, no one knows how much you will receive into your account tomorrow. This also means that no one knows how much you would be able to withdraw in cash tomorrow. Also, no one knows how much you have the opportunity to receive in one month if you leave everything in the account. [PRIVATE.]

As we have said before, everyone in here knows how much you will receive into your account tomorrow. This also means that everyone in here knows how much you would be able to withdraw in cash tomorrow. Also, everyone knows how much you have the opportunity to receive in one month if you leave everything in the account. [PUBLIC.]

You will now be called one by one to meet with the bank officer who will open your account and show you how to use it. When you are done, you will come back to your seat and wait for final instructions. Please do not talk to any one during this whole time.

[CALL FIRST NAME, USING PARTICIPATION LIST]

SCRIPT FOR ENDING

We have now come to the end of this study. We wish to thank you for taking part in this study. You will all leave together shown by my colleague. Thank you and good-bye.

ID: ☐☐☐☐☐

Game 1

Example 1

YOU

YOUR PARTNER

Small envelope

Large envelope

Large envelope

Small envelope

20	20	20	20	20
20	20	20	20	20
20	20	20	20	20
20	20	20	20	20

20	20	20	20	20
20	20	20	20	20
20	20	20	20	20
20	20	20	20	20

Common envelope

YOU
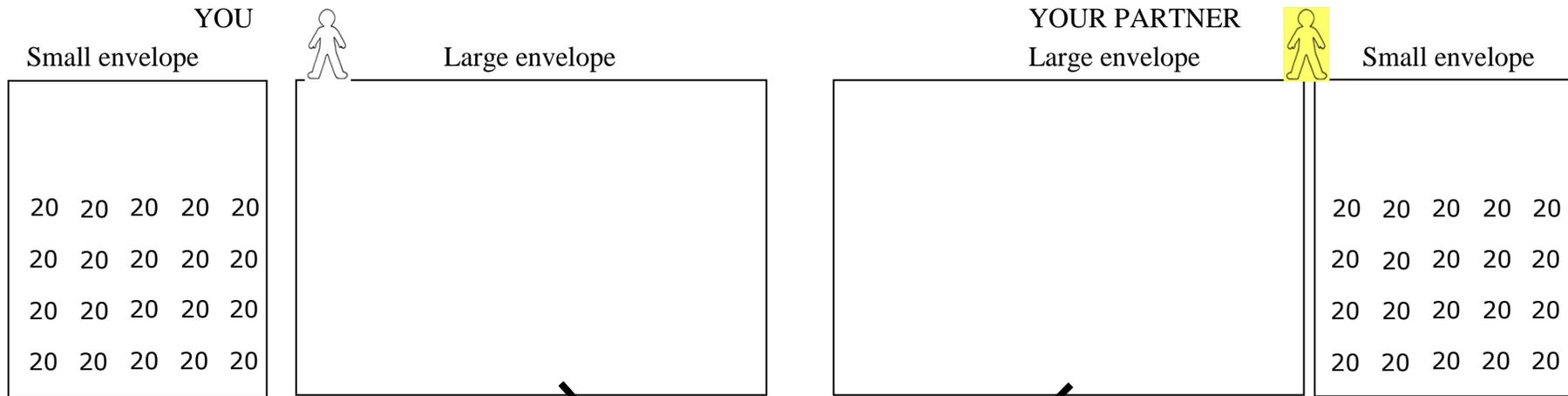
YOUR PARTNER

Ksh 400

Ksh 0

Ksh 0

Ksh 400

Total: Ksh 400

Total: Ksh 400

Example 2

YOU

YOUR PARTNER

Small envelope   Large envelope   Large envelope   Small envelope

| |
| 20 20 20 20 20 |
| 20 20 20 20 20 |
| 20 20 20 20 20 |
| 20 20 20 20 20 |

| |
| 20 20 20 20 20 |
| 20 20 20 20 20 |
| 20 20 20 20 20 |
| 20 20 20 20 20 |

Common envelope

10 10 10 10 10 10 10 10 10 10
10 10 10 10 10 10 10 10 10 10
10 10 10 10 10 10 10 10 10 10
10 10 10 10 10 10 10 10 10 10

20 20 20 20 20 20 20 20 20 20

20 20 20 20 20 20 20 20 20 20

20 20 20 20 20 20 20 20 20 20

20 20 20 20 20 20 20 20 20 20

YOU

Ksh 0   Ksh 600

Total: Ksh 600

YOUR PARTNER

Ksh 600   Ksh 0

Total: Ksh 600

Page 3

Example 3

YOU

Small envelope

Large envelope

YOUR PARTNER

Large envelope

Small envelope

Common envelope

YOU

Ksh 200

Ksh 210

Total: Ksh 410

YOUR PARTNER

Ksh 210

Ksh 320

Total: Ksh 530

YOU

YOUR PARTNER

Small envelope

Large envelope

Large envelope

Small envelope

20 20 20 20 20

20 20 20 20 20

20 20 20 20 20

20 20 20 20 20

20 20 20 20 20

20 20 20 20 20

20 20 20 20 20

20 20 20 20 20

Common envelope

20 20 20 20 20

My earnings:

YOU

YOUR PARTNER

Small envelope

Large envelope

Large envelope

Small envelope

20 20 20 20 20

20 20 20 20 20

20 20 20 20 20

20 20 20 20 20

20 20 20 20 20

20 20 20 20 20

20 20 20 20 20

20 20 20 20 20

Common envelope

20 20 20 20 20

20 20 20 20 20 20 20 20 20 20

20 20 20 20 20 20 20 20 20 20

20 20 20 20 20 20 20 20 20 20

My earnings:

ID: □□□□□

Game 2

Page 1

Practice question 1

Which of the 8 pieces is the one that matches the overall pattern of the figure?

Page 2
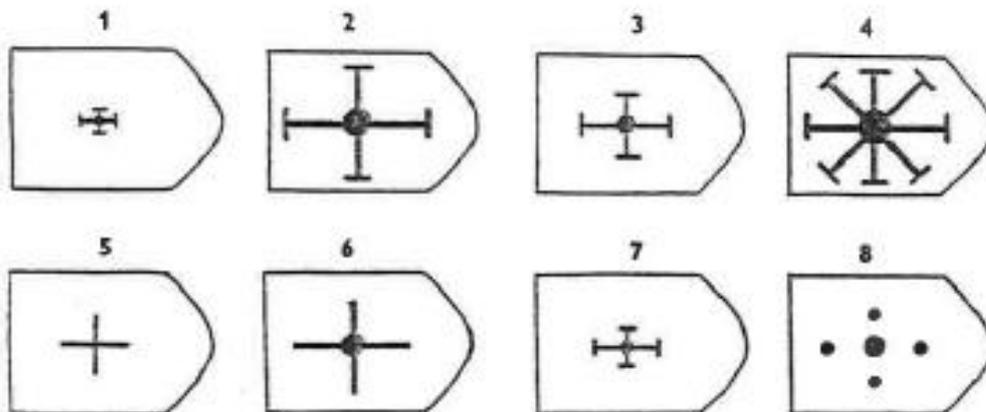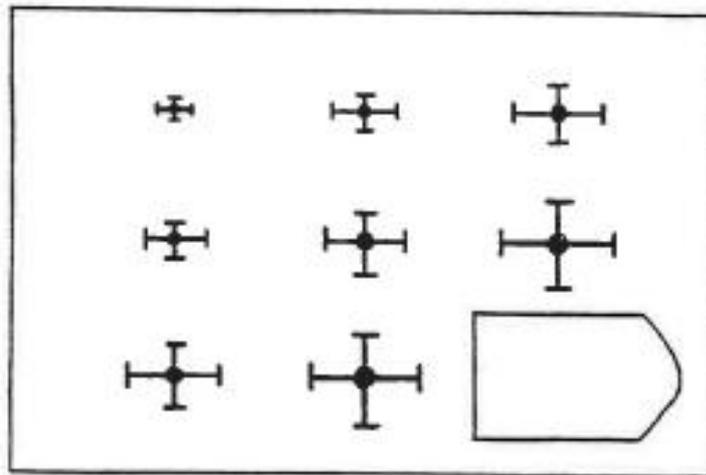
Practice question 2

Which of the 8 pieces is the one that matches the overall pattern of the figure?
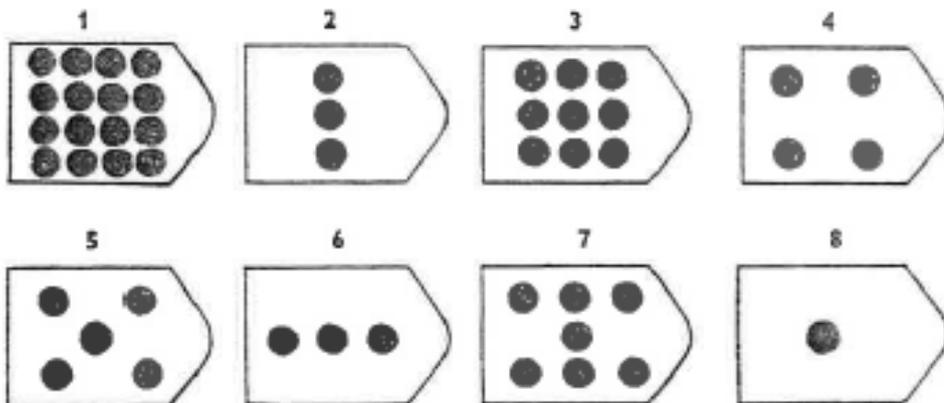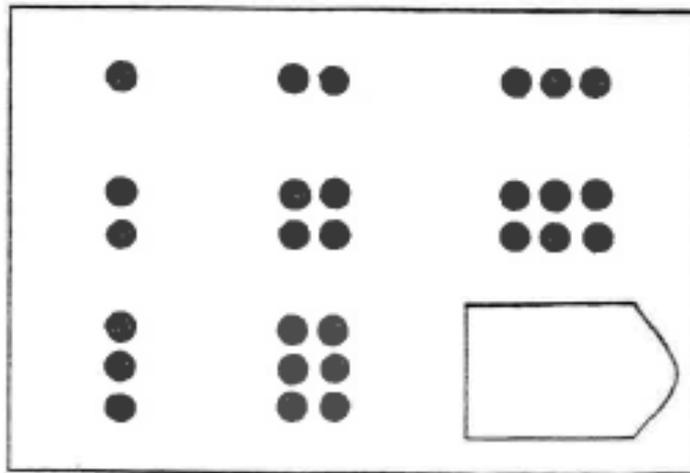
Question 1

Which of the 8 pieces is the one that matches the overall pattern of the figure?
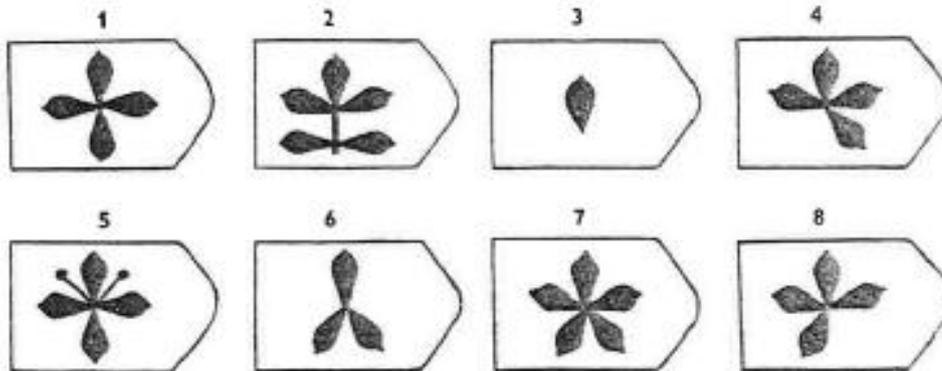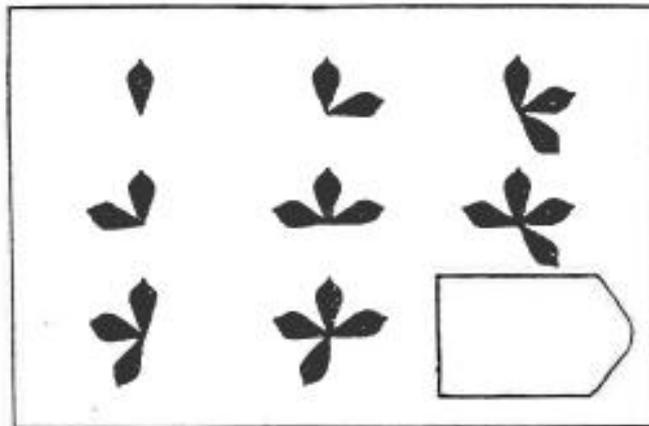
Page 4

Question 2

Which of the 8 pieces is the one that matches the overall pattern of the figure?
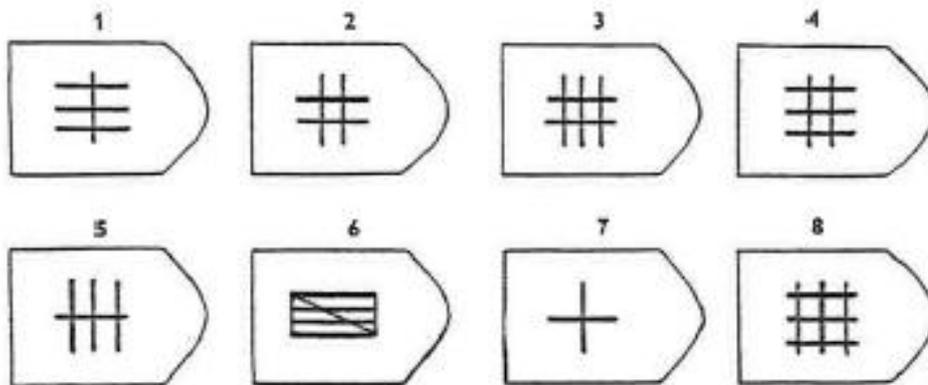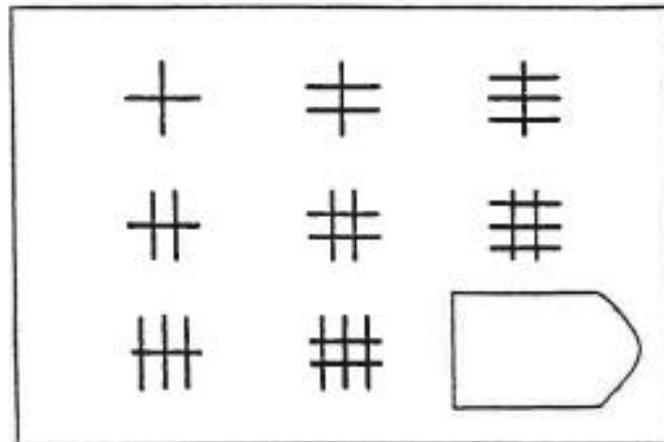
Question 3

Which of the 8 pieces is the one that matches the overall pattern of the figure?
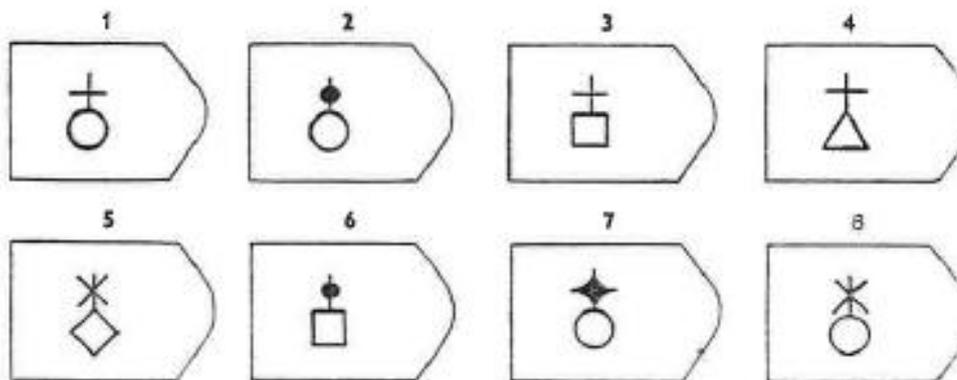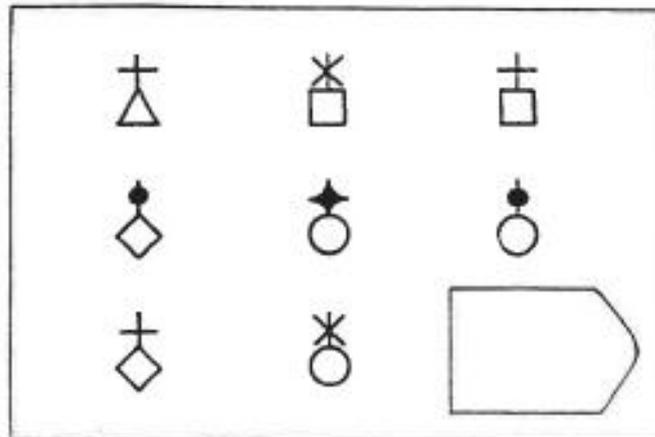
Game 3

Page 1

Question 1

Suppose you borrow Ksh 1000 from a money lender at an interest rate of 2% per month, with no repayment for 3 months. After 3 months, do you owe less than Ksh 1020, exactly Ksh 1020, or more than Ksh 1020?

You borrow Ksh 1000	Interest rate of 2% per month
	2%

I owe less than Ksh 1020

I owe exactly Ksh 1020

I owe more than Ksh 1020

Page 2

Question 2

If you have Ksh 1000 in a savings account earning 1% interest per annum, and prices for goods and services rise 2% over a 1-year period, can you buy more than, less than, or the same amount of goods in 1 year as you could today, with the money in the account?

Ksh 1000 in a savings account   1% interest per annum   Prices rise 2% every year

1%   ↑ 2%

In 1 year, I can buy more than the amount of goods I could buy today

In 1 year, I can buy less than the amount of goods I could buy today

In 1 year, I can buy the same amount of goods I could buy today

Question 3

Is it riskier to plant multiple crops or one crop?
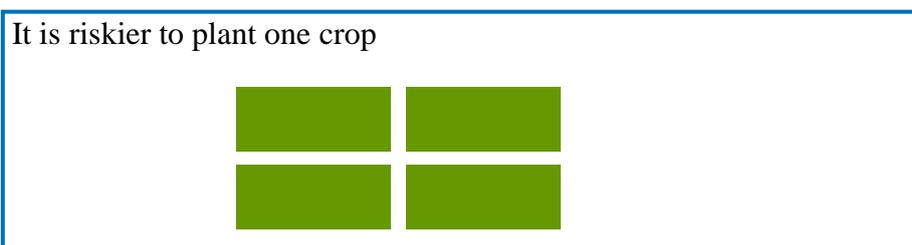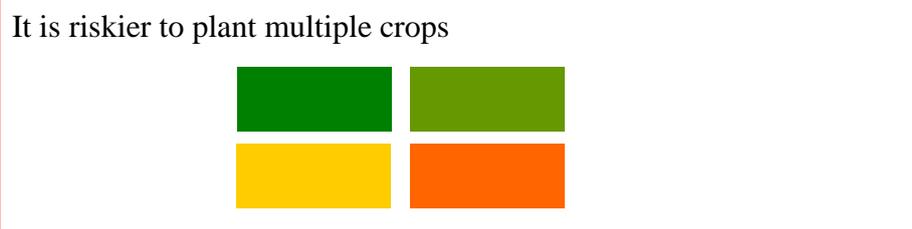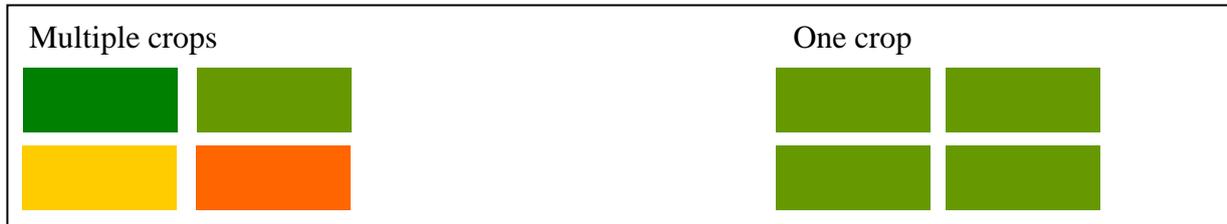
Multiple crops   One crop

It is riskier to plant multiple crops

It is riskier to plant one crop

Page 4

Question 4

Suppose you need to borrow Ksh 5000. Two people offer you a loan. One loan requires you to pay back Ksh 6000 in 1 month. The second loan requires you to pay back in 1 month Ksh 5000 plus 15% interest. Which loan represents a better deal for you?

Borrow Ksh 5000

The loan that requires me to pay back Ksh 6000 in 1 month
is a better deal for me

The loan that requires me to pay back Ksh 5000 plus 15% interest in 1 month
is a better deal for me

15%

Game 4

Page 1

Give the handbag to the shop owner

Person	Shop owner

Very Inappropriate	Somewhat Inappropriate	Somewhat Appropriate	Very Appropriate

Page 2

Take the handbag

Person

Very Inappropriate | Somewhat Inappropriate | Somewhat Appropriate | Very Appropriate

Page 3

Question 1

YOU   YOUR PARTNER

Very Inappropriate	Somewhat Inappropriate	Somewhat Appropriate	Very Appropriate
			(circled)

Very Inappropriate	Somewhat Inappropriate	Somewhat Appropriate	Very Appropriate
			(circled)

My earnings:

Page 4

Question 2

<table>
<tr><td>YOU</td><td></td><td></td><td></td><td>YOUR PARTNER</td></tr>
</table>

Very Inappropriate	Somewhat Inappropriate	Somewhat Appropriate	Very Appropriate

Very Inappropriate	Somewhat Inappropriate	Somewhat Appropriate	Very Appropriate

My earnings:

Save all for him or herself and give nothing to their friend.
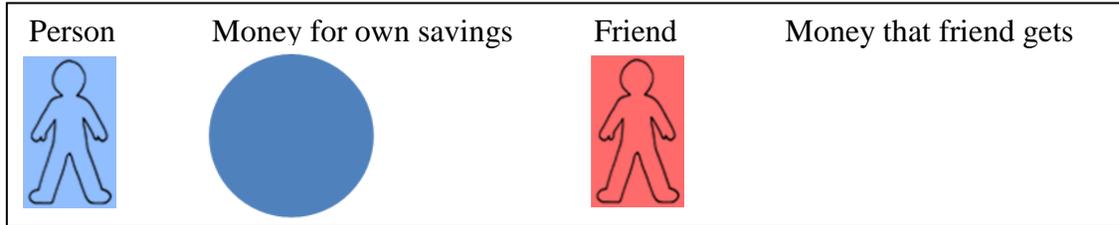
Person	Money for own savings	Friend	Money that friend gets

Very Inappropriate	Somewhat Inappropriate	Somewhat Appropriate	Very Appropriate

Save Ksh 720 for him or herself and give their friend 180.
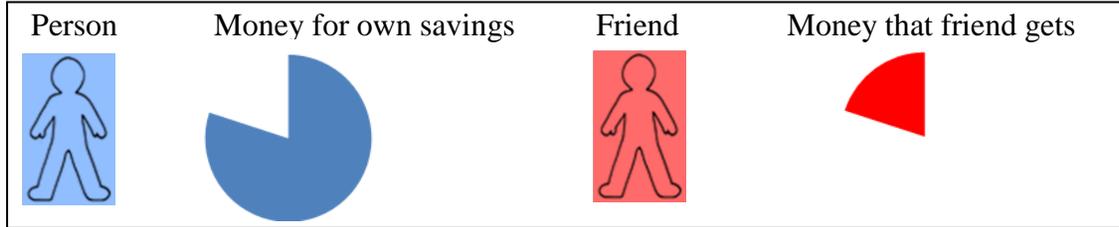
Person	Money for own savings	Friend	Money that friend gets

Very Inappropriate	Somewhat Inappropriate	Somewhat Appropriate	Very Appropriate

Save Ksh 540 for him or herself and give their friend 360.
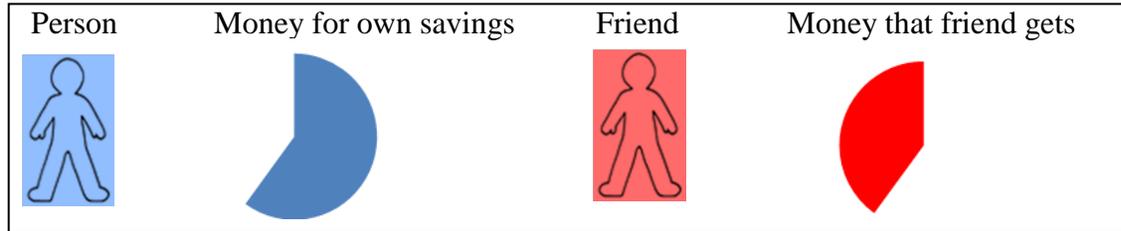
Person	Money for own savings	Friend	Money that friend gets

Very Inappropriate	Somewhat Inappropriate	Somewhat Appropriate	Very Appropriate

Save Ksh 360 for him or herself and give their friend 540.
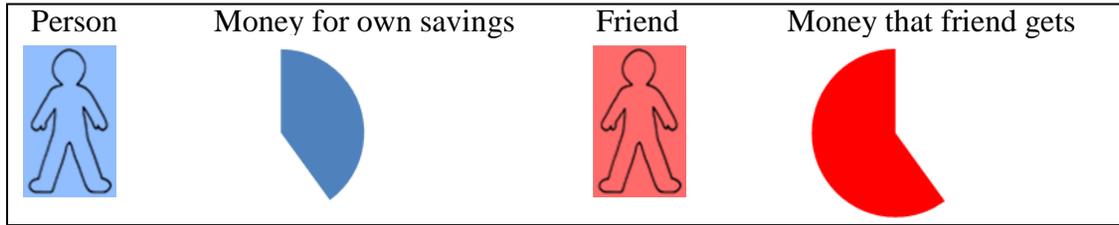
Person	Money for own savings	Friend	Money that friend gets

Very Inappropriate	Somewhat Inappropriate	Somewhat Appropriate	Very Appropriate

Save Ksh 180 for him or herself and give their friend 720.
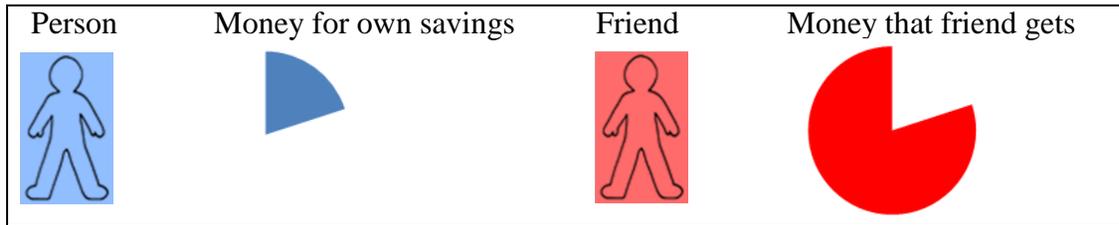
Person	Money for own savings	Friend	Money that friend gets

Very Inappropriate	Somewhat Inappropriate	Somewhat Appropriate	Very Appropriate

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Save none of the money for him or herself and give all to their friend.

Person	Money for own savings	Friend	Money that friend gets
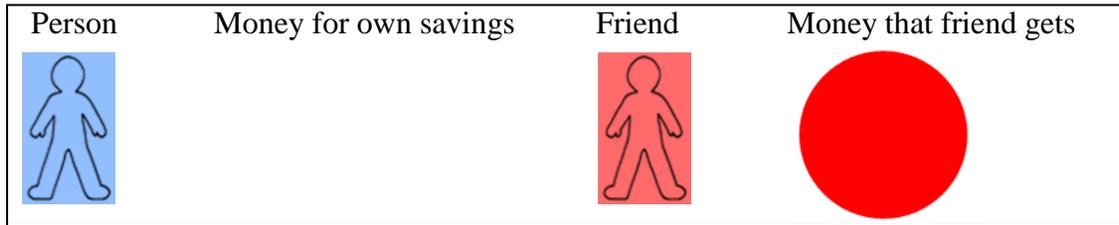
Very Inappropriate	Somewhat Inappropriate	Somewhat Appropriate	Very Appropriate

Appendix C – Description of additional experimental tasks

The experiment consisted of four tasks in total: a public goods game to measure cooperativeness, a cognitive ability task, four questions about financial literacy, and the norm-elicitation task. These tasks were played in the order specified above. We selected this order since the norm-elicitation task varies across treatments and could have had a differential effect on other tasks if it were played before the others. In order to minimize spillovers across tasks, participants received feedback on the individual tasks and accumulated earnings only at the end of the experiment.

The first task was a one-shot simultaneous public goods game. Participants were randomly and anonymously allocated into pairs. Each participant was endowed with 400Ksh and had to decide how much to contribute to a common pot in intervals of 20Ksh. Plastic markers were used to represent money and the participants made their contribution decision by distributing their markers between a small envelope, representing the money they wished to keep, and a large envelope, representing the common pot. The sum of contributions made by the two players was then multiplied by a factor of 1.5 and distributed equally between them.

The second task was a cognitive ability test based on Raven's matrices. A Raven's matrix depicts a 3x3 matrix containing different shapes, with the ninth shape missing. Below the matrix there are 8 candidate shapes, of which only one completes the pattern of the matrix. The task is to indicate which of the 8 shapes is the missing one. Participants were first asked to solve two matrices for practice, and then to solve three matrices that counted for their earnings. Participants earned 300Ksh for each correctly solved matrix.

The third task was a set of four questions developed by Cole et al. (2011) to measure financial literacy. Participants earned 250Ksh for each correctly given answer. The four questions were: 1) "Suppose you borrow 1000Ksh from a money lender at an interest rate of 2% per month, with no repayment for 3 months. After 3 months, do you owe less than 1020Ksh, exactly 1020Ksh, or more than 1020Ksh?"; 2) "If you have 1000Ksh in a savings account earning 1% interest per annum, and prices for goods and services rise 2% over a 1-year period, can you buy more than, less than, or the same amount of goods in 1 year as you could today, with the money in the account?"; 3) "Is it riskier to plant multiple crops or one crop?"; 4) "Suppose you need to borrow 5000Ksh. Two people offer you a loan. One loan requires you to pay back 6000Ksh in 1

month. The second loan requires you to pay back in 1 month 5000Ksh plus 15% interest. Which loan represents a better deal for you?"

Appendix D – Survey preference questions

We used the survey questions developed by Falk et al. (2018) to measure a variety of behavioral preferences. Below we list the English version of the questions included in the survey (administered in Swahili).

RISK AVERSION: "Please tell me, in general, how willing or unwilling you are to take risks, using a scale from 0 to 10, where 0 means you are "completely unwilling to take risks" and 10 means you are "very willing to take risks." You can also use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10".

PATIENCE: "How willing are you to give up something that is beneficial for you today in order to benefit more from that in the future? Please again indicate your answer on a scale from 0 to 10. A 0 means "completely unwilling to do so," and a 10 means "very willing to do so." You can also use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10"

ALTRUISM: "How willing are you to give to good causes without expecting anything in return? Please again indicate your answer on a scale from 0 to 10. A 0 means "completely unwilling to do so," and a 10 means "very willing to do so." You can also use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10"

POSITIVE RECIPROCITY: "When someone does me a favour, I am willing to return it. Please indicate your answer on a scale from 0 to 10. A 0 means "does not describe me at all," and a 10 means "describes me perfectly." You can use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10."

NEGATIVE RECIPROCITY: "If I am treated very unjustly, I will take revenge at the first occasion, even if there is a cost to do so. Please indicate your answer on a scale from 0 to 10. A 0 means "does not describe me at all," and a 10 means "describes me perfectly." You can use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10."

TRUST: "I assume that people have only the best intentions. Please indicate your answer on a scale from 0 to 10. A 0 means "does not describe me at all," and a 10 means "describes me perfectly." You can use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10."

Appendix E – Hierarchical clustering analysis

We categorize subjects into norm types using hierarchical clustering analysis (see Fallucchi et al., 2018 for a recent use of the technique applied to experimental data). The technique does not rely on a-priori classifications of types, but is data-driven and aims to construct clusters of participants so that the difference within each cluster is minimized and the difference across clusters is maximized.

Formally, we start by constructing, for each participant i, a *normative vector* that describes the rating n that the participant assigned to each of the 6 actions evaluated in the vignette, $N^i = \{n_1, n_2, n_3, n_4, n_5, n_6\}$. Denoting N^i and N^j the normative vectors of participants i and j, respectively, we construct a measure of the similarity between the two vectors by computing the Euclidean distance between N^i and N^j, $d(N^i, N^j) = \sum_{a=1}^{6}(n_a^i - n_a^j)^2$ where n_a^i is a-element of the normative vector of subject i, i.e., the rating of appropriateness of action a by subject i.

Using Ward's minimum variance method, we then divide subjects' normative vectors into $\#C$ categories ("clusters") which are chosen in order to maximize the similarity among the normative vectors that are included within each cluster. We repeat the exercise for various sizes of $\#C$ (i.e., we divide subjects into 1, 2, 3, 4, 5, ... clusters) and then select the optimal number of clusters using Duda and Hart (1973) criterion (see Fallucchi et al., 2018 for details).

We perform the analysis separately across our two treatments (PRIVATE and PUBLIC). In either case, the Duda and Hart criterion suggests that the optimal number of clusters is 3. In PRIVATE, for 1 subject we have a missing observation for one element of the normative vector and so the subject is excluded from the clustering analysis. We visually inspected the vector of that subject and assigned it to the pro-saving norm cluster based on (perceived) similarity.

In the paper, we plot the average normative vector of the subjects who are included in each cluster (Figure 1). The table below reports the averages used to construct the Figure as well as standard deviations in parentheses. A value of +1 indicates the action is evaluated as "Very socially appropriate", +0.33 as "Somewhat socially appropriate", -0.33 as "Somewhat socially inappropriate", and -1 as "Very socially inappropriate". The most appropriate action for each type of norm is shown in bold in the table.

PRIVATE	Save 0%	Save 20%	Save 40%	Save 60%	Save 80%	Save 100%
Strict Norm (n=25)	**1.00** **(0.00)**	-1.00 (0.00)	-0.97 (0.13)	-0.97 (0.13)	-0.95 (0.18)	-1.00 (0.00)
Moderate Norm (n=28)	**1.00** **(0.00)**	0.76 (0.33)	0.40 (0.71)	-0.01 (0.76)	-0.45 (0.75)	-0.93 (0.21)
Pro-saving norm (n=53)	-0.48 (0.79)	-0.14 (0.88)	-0.08 (0.86)	**0.28** **(0.84)**	0.26 (0.70)	-0.32 (0.88)
PUBLIC	Save 0%	Save 20%	Save 40%	Save 60%	Save 80%	Save 100%
Strict Norm (n=34)	**0.94** **(0.34)**	-0.63 (0.62)	-0.74 (0.59)	-0.98 (0.11)	-0.88 (0.35)	-0.74 (0.66)
Moderate Norm (n=60)	**0.94** **(0.19)**	0.71 (0.50)	0.52 (0.65)	0.22 (0.83)	-0.01 (0.90)	-0.27 (0.95)
Pro-saving norm (n=28)	-0.95 (0.18)	-0.31 (0.86)	-0.43 (0.65)	**0.26** **(0.71)**	-0.17 (0.82)	-0.52 (0.81)

Appendix F – Regression tables

The tables below show the coefficients and standard errors of all control variables included in the regressions reported in the paper.

Table F1 – Determinants of Sharing Norm Types

	Pro-saving norm vs. Moderate norm 1vs2	Pro-saving norm vs. Strict norm 1vs3	Moderate norm vs. Strict norm 2vs3
1 if PRIVATE	890.7*** (0.000)	512.3*** (0.003)	-38.2 (0.323)
Age	-7.7 (0.751)	-56.4*** (0.008)	-52.8*** (0.009)
1 if Married	170.3** (0.047)	-36.6 (0.530)	-76.6** (0.018)
Income (in Ksh1000)	-10.3 (0.581)	88.8* (0.079)	110.5** (0.030)
Positive Reciprocity	114.1* (0.057)	80.2 (0.205)	-15.8 (0.585)
Negative Reciprocity.	38.0 (0.419)	-82.9*** (0.001)	-87.6*** (0.000)
PGG Contribution	6.8 (0.770)	79.5** (0.050)	68.1** (0.041)
Financial Literacy	34.2 (0.351)	-52.7** (0.046)	-64.8*** (0.001)
Gifts & Loans (in Ksh1000)	-19.9 (0.287)	25.7 (0.351)	57.0* (0.061)
Degree	27.4 (0.359)	130.7** (0.030)	81.1* (0.064)
Clustering	43.8* (0.091)	122.3** (0.014)	54.6 (0.151)
Male	-4.1 (0.920)	16.7 (0.784)	21.80. (0.714)
Education	-3.4 (0.885)	-34.5 (0.131)	-32.2 (0.139)
Savings	22.5 (0.218)	144.1 (0.406)	99.4 (0.515)
Patience	7.6 (0.783)	-28.1 (0.342)	-33.2 (0.158)
Risk aversion	28.2 (0.526)	-20.8 (0.560)	-38.2 (0.135)

	Pro-saving norm vs. Moderate norm 1vs2	Pro-saving norm vs. Strict norm 1vs3		Moderate norm vs. Strict norm 2vs3
Altruism	-22.3 (0.329)	-25.4 (0.426)		-4.0 (0.903)
Altruism	-22.3 (0.329)	-25.4 (0.426)		-4.0 (0.903)
Trust	-20.1 (0.564)	-3.3 (0.941)		21.0 (0.549)
Raven's matrix task	3.1 (0.891)	2.7 (0.928)		-0.5 (0.986)
Obligation to share	49.7 (0.361)	106.9 (0.170)		38.3 (0.458)
Perceived claims by others	-8.7 (0.740)	35.1 (0.393)		48.0 (0.157)

Note: Multinomial logit regression with robust standard errors. The dependent variable is a categorical variable measuring the type of norm that a subject perceives (as defined by the hierarchical cluster analysis). Each column shows the percentage changes in the odds ratios of being classified as type *m* (listed first in the column heading) rather than type *n* (listed second in the column heading). For dummy variables (PRIVATE and Married in the table), we compute the change in the odds for a unit increase in the variable. For continuous variables, we compute changes for a standard deviation increase in the explanatory variable. All models include village fixed effects and enumerator fixed effects and a constant (omitted from the Table). P-values are reported in parentheses (***Significant at the 1 percent level. **Significant at the 5 percent level. *Significant at the 10 percent level). The number of observations is 224 because we have missing values in the explanatory variables of 4 subjects. The pseudo R^2 value is 0.394.

Table F2 – Effect of Observability of Earnings on Savings

	All subjects		Women only		Men only	
	(1)	(2)	(3)	(4)	(5)	(6)
1 if PRIVATE	-0.01 (0.089)	-0.22 (0.154)	0.06 (0.117)	-0.50** (0.197)	-0.21 (0.141)	-0.21 (0.194)
Moderate norm		-0.23 (0.161)		-0.67*** (0.227)		0.07 (0.198)
Moderate norm * PRIVATE		0.43** (0.210)		0.94*** (0.268)		0.15 (0.317)
Strict norm		-0.00 (0.200)		-0.38 (0.265)		0.57 (0.342)
Strict norm * PRIVATE		0.18 (0.245)		0.55 (0.310)		-0.39 (0.361)
Married	0.15 (0.119)	0.13 (0.118)	0.01 (0.141)	-0.00 (0.138)	0.23 (0.184)	0.28 (0.172)
Age	0.00 (0.004)	0.00 (0.004)	-0.01 (0.005)	-0.00 (0.005)	0.01 (0.006)	0.01 (0.005)
Education	0.01 (0.015)	0.01 (0.015)	-0.01 (0.019)	-0.01 (0.018)	0.05*** (0.019)	0.05*** (0.017)
Income	0.00 (0.112)	0.00 (0.002)	0.00 (0.004)	0.00 (0.004)	0.00 (0.002)	0.00 (0.002)
Savings	-0.00 (0.001)	0.00 (0.001)	0.00 (0.00)	0.00 (0.000)	-0.01** (0.002)	-0.00 (0.003)
Patience	0.01 (0.033)	0.00 (0.033)	0.02 (0.040)	0.02 (0.037)	-0.05 (0.052)	-0.04 (0.052)
Risk aversion	0.05* (0.026)	0.04 (0.025)	0.05* (0.030)	0.05* (0.029)	0.10** (0.041)	0.10** (0.040)
Altruism	-0.02 (0.031)	-0.02 (0.029)	-0.02 (0.053)	-0.03 (0.047)	-0.043 (0.032)	-0.06* (0.033)
Positive Reciprocity	-0.05 (0.033)	-0.05 (0.032)	-0.05 (0.042)	-0.05 (0.039)	-0.042 (0.053)	0.01 (0.057)
Negative Reciprocity	-0.01 (0.015)	-0.012 (0.015)	-0.00 (0.019)	-0.00 (0.019)	-0.01 (0.022)	-0.03 (0.025)

Table F2 – Effect of Observability of Earnings on Savings - continued

	All subjects		Women only		Men only	
	(1)	(2)	(3)	(4)	(5)	(6)
Trust	0.03	0.03	0.033	0.03	-0.042	-0.05
	(0.027)	(0.027)	(0.034)	(0.033)	(0.033)	(0.036)
Public goods contribution	0.00	-0.00	0.01	0.00	0.01	0.01
	(0.010)	(0.011)	(0.013)	(0.013)	(0.013)	(0.015)
Raven matrix task	0.02	0.01	0.14*	0.013*	-0.28***	-0.29***
	(0.060)	(0.060)	(0.071)	(0.070)	(0.086)	(0.077)
Financial literacy	-0.03	-0.05	-0.02	-0.081	0.033	-0.01
	(0.051)	(0.051)	(0.074)	(0.068)	(0.056)	(0.054)
Obligation to share	0.00	0.01	0.00	0.01	0.212***	0.17**
	(0.043)	(0.041)	(0.062)	(0.057)	(0.070)	(0.071)
Perceived claims by others	0.09	0.10	-0.01	0.02	0.66***	0.73***
	(0.174)	(0.174)	(0.226)	(0.223)	(0.254)	(0.236)
Gifts & Loans (in Ksh1000)	-0.00	-0.00	0.01	0.00	-0.044*	-0.06**
	(0.024)	(0.024)	(0.039)	(0.038)	(0.026)	(0.024)
Degree	-0.01	-0.01	-0.01	-0.01	-0.00	-0.01
	(0.010)	(0.010)	(0.012)	(0.012)	(0.016)	(0.017)
Clustering	-0.215	-0.10	0.10	0.37	-1.34***	-1.072**
	(0.399)	(0.410)	(0.522)	(0.504)	(0.488)	(0.499)
Constant	0.81	0.97*	1.02	1.22*	-0.514	-0.73
	(0.545)	(0.560)	(0.690)	(0.675)	(0.033)	(0.768)
N. Observations	215	215	148	148	67	67
Pseudo R^2	0.127	0.141	0.180	0.223	0.378	0.431

Note: Tobit regressions with robust standard errors in parentheses. The dependent variable is the share of experimental money left in the bank account at the end of the month following the experiment. The first column contains data from all subjects, the subsequent columns contain data from women and men separately type. ***Significant at the 1 percent level. **Significant at the 5 percent level. *Significant at the 10 percent level. All models also include village fixed effects (we do not include enumerator fixed effects to avoid overfitting, especially in the male-only regressions where we have only 67 observations). A constant is also included in all models but not displayed in the table. We have 215 observations (instead of 217) due to missing values in some of the control variables.