How Market Access Shapes Wellbeing and Values: Experimental Evidence from the D.R. Congo

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Abstract

Classical liberals argue that the expansion of market access promoted prosociality, hard work, and thrift, while according to more critical schools of thought, markets ushered in a more self-interested, secular, and unsatisfied homo economicus. We examine these ideas in a field experiment involving 4,200 individuals across 300 Congolese villages that provided free motorcycle transportation to the largest urban market in the province one day per week for six months. Market access increased household income by 16% nine months after the intervention by facilitating enduring connections to urban traders and stimulating trade in cash crops. However, it eroded subjective wellbeing on average and made participants feel further away from their desired income, likely by generating within-village inequality and altering the reference points of market participants. Market access also had a secularizing effect: participants viewed religious faith as a less important value and instead placed more value on hard work, productivity, education, income, and saving. This shift in values does not appear to reflect exposure to more secular urban individuals but rather an increase in perceived agency linked to the higher returns to effort available through market exchange. An urban placebo treatment arm helps attribute these effects to market access, separate from exposure to the city and urban social networks more generally.

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1 Introduction

Urban markets have long been viewed as a key nexus in the process of economic development. They feature prominently in economic histories of the ancient world (e.g., entrepôts like Piraeus and Carthage), the Medieval period (e.g., fairs like that in Bruges and Champagne), and the early modern period (e.g., market cities like Venice and Amsterdam — or, in the African context, Timbuktu and Mombasa). In contemporary Africa, major trading centers such as Lagos, Nairobi, Abidjan, and Dar es Salaam, are often seen as engines of recent African growth. By connecting local and regional trade networks, urban markets help households shift from producing for subsistence to producing for exchange (Smith, 1937; Braudel, 1949).[1] This shift is thought to raise household incomes, consumption levels, and product variety. It can also increase inequality if the gains from market integration are heterogeneous — e.g., when higher-productivity households are better positioned to shift out of subsistence production and specialize in cash crops for sale in more profitable regional markets (Verhoogen, 2008).

Alongside these economic effects, social theorists have argued that the expansion of markets reshaped the values and perceived wellbeing of populations exposed to them (Hirschman, 1982). On the one hand, thinkers like Montesquieu, Smith, and Hume advanced the *doux-commerce* view: that markets promote prosociality and "bourgeois values" like hard work, saving, and open-mindedness.[2] "Commerce changes the manners of men," Hume (1752) wrote. "It renders them more industrious, more frugal, more liberal." On the other hand, thinkers like Rousseau, Marx, and Durkheim advanced a more critical *homo economicus* view: that markets promote selfish materialism, erode religious ties and traditional communities, and fuel a sense of individual alienation. Market society "drowned the most heavenly ecstasies of religious fervour... in the icy water of egotistical calculation," wrote Marx and Engels (1848).[3]

This paper investigates the causal effects of access to urban markets in a rural developing society today. We study a field experiment providing transportation to a

[1] Urban market density is further thought to facilitate knowledge spillovers and technology diffusion (Lucas, 1988).

[2] Following Schumpeter (1942), we use the term "bourgeois values" to refer to a set of values he believed the bourgeoisie particularly cared about, such as personal responsibility, self-reliance, work ethic, and thrift.

[3] Although these classic arguments were often made about markets generally, rather than urban markets per se, the examples discussed in the texts focus chiefly on urban markets.

large urban market in rural Democratic Republic of the Congo (DRC). In 100 randomly selected villages around the city of Kananga (population 1.6 million), a local NGO provided free motorcycle transportation to the largest market in the province one day per week for six months. Six adults from each selected village were invited to bring goods to sell in the market and then return the same day with the proceeds and any purchased items. The treatment thus impacts participants both (*i*) as a seller, in which they interact with more customers in markets with higher prices for agricultural produce, and (*ii*) as a consumer, in which they have access to more product varieties and lower prices for manufactured goods. We compare these 600 individuals in this *market treatment* arm with 600 comparable individuals in 100 *pure control* villages who did not receive free transportation to the city. Motivated by the aforementioned theories, our primary outcomes include income, wellbeing, and values.

To help isolate the impact of the urban market from urban exposure more broadly, we also compare the market participants with individuals in 100 *church treatment* villages. In these villages, randomly sampled households were offered transportation to Kananga along with an invitation to attend Sunday services at one of the city's largest 30 churches each week for six months.[4] In Kananga, as in most sub-Saharan African cities, churches are a vibrant hub of social interaction, with new members joining (and others leaving) frequently. We use the church treatment group as an "urban placebo" to help distinguish the effects of exposure to urban mores and social networks from the effects of urban market access per se.

To measure outcomes, an independent team of enumerators conducted a baseline survey before the transportation program and an endline survey 6-12 months after it concluded. These enumerators sampled the 1,800 main respondents as well as another 1,800 of their friends ("network respondents") and 600 non-network respondents — a total sample of 4,200 individuals across the 300 villages. We also have access to data from the transportation program on attendance, sales and purchases in the market, and experiences at church.

Participation rates were high in both treatment arms, with over 98% and 95% of invited individuals attending at least once in the market and church treatments, respectively. Of the total possible 26 trips offered to each participant — one trip per week for six months — 92% were taken up in the market treatment, and 84% were taken up in the church treatment. These participation rates create a strong "first

[4]The exception is Catholic churches, which held their Tshiluba services too early in the morning on Sundays for villagers to arrive on time.

stage": an average intensive-margin increase of 23 and 21 trips to Kananga in the market and church treatment, respectively. Put differently, while the median control respondent went to the city roughly every other month during the study period, treated respondents went almost every week.[5] During the program, participants in the market arm experienced a nearly 200% increase in reported market sales, up from an average of roughly $10 of sales income at baseline. They also reported high levels of satisfaction with the program in both arms during the six months of the intervention.

We study the impacts of the program nine months after its conclusion. Market participants reported total household monthly income that were 16% or 0.2 SDs higher than control participants. Church participants' income, by contrast, were not statistically different from control, and the difference between market and church participants was 0.14 SDs ($p = 0.056$). This total income increase stems chiefly from higher sales income (by 0.16 SDs) specifically. Participants were more likely to report having trading partners in Kananga and to report selling cash crops like palm oil and coffee, two of the most profitable crops as rural vendors in Kananga, according to the transportation program data. In sum, the market treatment appears to have caused a persistent increase in income by allowing villagers a chance to form commercial relationships in the city through which they continue to sell profitable cash crops. We detect no impacts on formal employment or asset ownership.

How does the program shape the wellbeing of its participants? To measure subjective wellbeing, we rely on the Self-Reporting Questionnaire (SRQ-20), a WHO-validated 20-question survey module for measuring mental wellbeing and depression. According to this measure, we find evidence that the market treatment in fact eroded subjective wellbeing on average. Using a standard 10-out-of-20 cutoff, the market treatment increased the probability of depression among participants by 5.6 percentage points.[6] Quantile regression estimates indicate that the treatment effect is concentrated in the upper quartiles of the SRQ-20 score distribution — i.e., among participants with worse mental wellbeing.

We examine four possible explanations for this decrease in average subjective wellbeing: (*i*) greater responsibility and redistributive pressure from the income effect fueling stress; (*ii*) greater stress from the hustle and bustle or the income volatility

[5]The villages in our sampling frame are all within a 4-hour motorcycle ride of Kananga, and most respondents already make several trips to the city each year. The treatment is thus an intensive-margin shock in urban access rather than an extensive-margin first exposure to the city.

[6]The corresponding effect for the church treatment is 4.6 percentage points, but it is not statistically significant.

of commercial work; (*iii*) greater inequality and social comparisons to new reference groups in the village or the city creating jealousy; and (*iv*) wistful regret for a period of good fortune that subsequently ended. The evidence is most consistent with the inequality mechanism. Subjective wellbeing notably declined in villages where income inequality increased from baseline to endline among market participants. Moreover, market participants who fell in their relative income rank compared to other participants in the village had worse subjective wellbeing. Friends of market participants also experienced lower wellbeing. Each of these observations is consistent with the idea that higher incomes of the "winners" of the market access program fueled jealousy among the "losers" (as well as others in the village), leading to decreases in average subjective wellbeing.

Another key dimension of wellbeing is perceived need: how much money do you believe you need to be happy? Rousseau (1752) argued that market society raised consumption yet simultaneously multiplied the number of perceived "needs" — thereby paradoxically making people *feel* worse off. When we asked participants how much income they need to be happy, market participants reported amounts on average 15% higher (or 0.14 SDs) than the control group. This could reflect the income effect if market participants simply adjusted their income goal proportionally. We thus computed the gap between their target income for happiness and current income, providing a measure of how far they feel from their target income. Using this measure, we still observe a 14% increase in the market arm. That is, despite their income gains, market participants still felt further from the amount of money needed to be happy, as compared to the control.[7] This treatment effect is more pronounced in market villages that experienced larger increases in income variance among participants. This is, again, consistent with an inequality story: the market intervention appears to have shifted the reference point for most participants, making them feel relatively worse off.

We then investigate how market access shaped participants' core values: the components of a good life, the qualities of a good person, and the most important values to inculcate in children. Across a broad set of questions and measurement techniques, we observe a consistent erosion of religious values toward "bourgeois values" — e.g., the importance of income, education, hard work, productivity, and saving. Religion remains the top value overall, but declines in relative ranking by 0.19 SDs to 0.25 SDs

[7]The estimated treatment effect for church participants (6.5 log points) is not statistically significant. The market-church difference is about 9 log points, though this difference is not quite significant at conventional levels (p=0.18).

depending on the measure, and is surpassed by family at endline in the market arm. We do not observe the same pattern in the church arm, and the difference between market and church is statistically significant in most comparisons. We observe corresponding reductions in reported religious participation, with women reporting less private prayer and men reporting less frequent participation in peripheral church activities. One natural concern is that these survey-based value shifts reflect cheap talk rather than genuine change. We address this using the Dictator Game, in which we find that market participants give significantly less to members of their religious in-group — Christians, members of their own denomination, and members of their own church — and expect less generosity in return. When there are real stakes to their decisions, the erosion of religious ties is visible in behavior as well as stated values.

We investigate four potential mechanisms for this secularizing effect. The evidence rules out three: income effects (positive income shocks within the market arm are uncorrelated with the importance of religious values), socialization (urban vendors in Kananga are no less religious than our baseline respondents, and effects on religious values are no more pronounced among inside-market participants who had greater contact with urban customers), and insurance (market participants show no decrease in church-based informal insurance demand or ROSCA participation). The evidence instead points to an *agency* mechanism, in the spirit of Bénabou and Tirole (2002): by raising the return to individual effort, the market treatment led participants to attribute outcomes to their own actions rather than to divine control. Consistent with this interpretation, market participants shift away from "god" toward "self" as the perceived driver of outcomes in their personal lives, and toward "friends" and "luck" in their professional lives. They also score 0.17 SDs higher on locus of control and 0.13 SDs higher on grit. In sum, the evidence suggests that by raising the return to individual effort, market access crowds in beliefs about personal efficacy — and correspondingly crowds out the sense of divine control and accompanying religious values.

In sum, our evidence is more consistent with the homo economicus theory of markets and their impact on wellbeing and values. Despite increasing incomes, market access undermines subjective wellbeing on average and makes participants feel further away from their desired income — likely by generating within-village inequality and altering the reference points of market "losers." Market access also has the anticipated secularizing effect: participants view god and religion as less important in their lives and a weaker determinant of success in life; they are also less generous (and more skeptical)

toward members of their religious community.[8] Although market participants are not more selfish on average in behavioral games, they do believe more in their own agency and in the importance of hard work.[9] A broader implication of our results is that markets are not value-neutral: if preferences themselves are endogenous to market access, welfare analysis of market integration will depend critically on which preferences — those held before or after exposure — are used to evaluate the policy.

We first contribute to the literature on how markets shape values and prosociality. A lab experimental literature has illustrated that markets make people more likely to impose negative externalities on others (e.g., Falk and Szech, 2013; Bartling et al., 2023), and that market competition can shape honesty, views about morality, and trust (e.g., Benistant et al., 2022; Chen and Reinhart, 2024; Choi and Storr, 2020). There is also an emerging literature on the subject beyond the lab. Henrich et al. (2001) find that market integration is positively associated with prosociality across fifteen small-scale societies around the globe. Enke (2023) documents a robust positive correlation between market exposure, trust, and universal morality. Rustagi (2025) exploits historical variation in exposure to the livestock trade in Ethiopia and estimates that markets created demand for civic values and prosociality. We contribute to this literature by providing the first credible causal estimates from a contemporary field experiment of the impacts of market access on wellbeing and values, which are more consistent with the homo economicus view of markets.

Second, we contribute to the literature on secularization. There is a well-established negative correlation between income and religiosity (Barro and McCleary, 2003), though the causality of the relationship has been questioned (Becker and Woessmann, 2013). The quasi-experimental literature reaches mixed results: Gruber and Hungerman (2008) find that church attendance decreases after the repeal of state-level "blue laws" prohibiting retail activity of Sundays; Chen (2010) finds that households hit harder by the Indonesian financial crisis increase their engagement at Koran schools; Buser (2015) exploits a change in the eligibility threshold for a government cash transfer program in Ecuador to estimate a positive impact of income on (evangelical) church participation. We contribute to this literature by documenting the negative impact of access to urban markets — a key institution in the process of economic development (Braudel, 1949)

[8]The doux-commerce theory did not anticipate a secularizing effect of markets, only an impact on tolerance and religious open-mindedness.

[9]Both theories overlap in their prediction that access to markets would inculcate bourgeois values like the importance of hard work, income, productivity, and saving.

— on the relative importance of religion in individuals' deeply held values.

Third, we contribute to the literature investigating the importance of developing welfare metrics going beyond income and consumption. While a longstanding observational literature documented a divergence between welfare metrics based only on income or consumption and broader measures (e.g., Easterlin, 1974; Sen, 1999; Layard, 2006; Jones and Klenow, 2016), a more recent literature using RCTs finds that unconditional cash transfers do not generally lead to increases in psychologically-grounded measures of wellbeing (e.g., Haushofer and Shapiro, 2018; Jaroszewicz et al., 2024; Miller et al., 2024). Our RCT instead examines the impact of market access and also finds a divergence between income and wellbeing measures. The role of inequality among program participants as an explanatory channel is consistent with other work showing strong reference-dependent preferences in narrow reference groups (Xu et al., 2025). The importance of inequality for wellbeing has implications for optimal taxation, as shown by a theoretical literature treating individuals' incomes as a negative externality on others' welfare (e.g., Boskin and Sheshinski, 1978; Ljungqvist and Uhlig, 2000).

Finally, we make a smaller contribution to the large literature on market access and economic development. Most of the literature has focused on reductions in transport and/or trade costs (e.g., Bryan et al., 2014; Aggarwal, 2018; Donaldson, 2018; Banerjee et al., 2020a; Asher and Novosad, 2020; Brooks and Donovan, 2020; Abebe et al., 2021; Lagakos et al., 2023). Our main contribution is the existence of an urban placebo treatment to help distinguish the impact of urban markets separately from exposure to urban mores and social networks more broadly. We also have rich data to explore mechanisms, e.g., how market participants specialize in more profitable cash crops.

2 Setting

The study takes place in the city of Kananga, in the Kasaï Central Province of the Democratic Republic of Congo (DRC). Kananga, a city of roughly 1.6 million (the fourth largest in Congo), is the seat of the Provincial Government of Kasaï Central. Transport infrastructure in the region is in severe disrepair due to heavy rain and a lack of maintenance. Transportation in rural areas is difficult even for 4x4 vehicles. Traveling 50 kilometers out of the city can take up to 4 hours on a motorbike. But most villages are unable to afford motorbikes or other forms of transport, and so they

spend days walking to reach the city, or they remain in their villages.

Our sampling frame consists of permanent villages located 10-40 kilometers outside of Kananga (Figure A1).[10] These villages have 100 households on average with a self-reported monthly income of $23 (Table A1). The vast majority (92%) of individuals work in agriculture, and only 12% have any form of salaried employment. About 8% of these villages have a market (active typically one day per week), to which residents of other villages sometimes travel to buy and sell goods. Working as a market seller is an uncommon activity in these villages: 43% of a random sample of villagers reported any time selling goods in the past week; 5% reported more than 5 hours; and only 0.6% reported "selling" as their primary occupation.

3 Design

We study a transportation field experiment implemented by a local NGO called Congo Helping Hands (CHH) that has worked in Kasaï since 2004. Their City Access Program, as explained to potential participants, sought to "facilitate city access by providing transportation to Kananga for villagers in Kasaï Central." We worked with CHH to randomize these two versions of this program at the village level to facilitate an impact evaluation.

3.1 Interventions

3.1.1 Market Treatment

In the market arm of the experiment, participants were invited to receive free transportation to the central market in Kananga once per week for six months. The program occurred on Thursday, Friday, or Saturday, all active market days in Kananga. Participating households had access to an additional motorcycle on which they could transport goods to sell in the city.

How do urban markets compare to the village markets to which participants previously had access? Table A2 summarizes key differences. First, as a seller, urban markets provide access to more customers and higher prices for agricultural produce. Second, as a consumer, urban markets have many more goods available and lower prices

[10] Given the transportation program we study, villages further from Kananga would have required too long and difficult a motorcycle ride.

for manufactured goods.

So that CHH's participants would reflect a trivial share of total vendors, we also randomized the market location in Kananga at the village level.

- Inside Market. In villages assigned to this sub-treatment, participants were given access to the inside section of the *grand marché*. This market is organized by product in stalls, similar to a grocery store. In this market, vendors tend to have more customers and interactions; they also had access to slightly higher prices.
- Outside Market. In villages assigned to this sub-treatment, participants were transported to *Nkashama* market, a sprawling open-air market located across the street from the *grand marché*. In this market, vendors tend to sell larger quantities to fewer customers. Thus, it is more like a wholesale exchange.

3.1.2 Church Treatment

In the church arm, participants were similarly invited to receive free transportation to Kananga one day per week (Sunday) for six months, but they were invited to attend services at an urban church. Churches are the principal hub of social activity in Kananga and other urban centers in sub-Saharan Africa. During extensive piloting of the program with CHH in 2019-2020, we learned that access to urban churches was highly sought after in villages. Of all versions of the program we piloted, only the church-based version achieved as high a participation as the market.[11] The chief reason for this demand is the large and vibrant social networks to which villagers gain access: churches are where many friendships and relationships are formed. They also provide a clear source of consumption value, as urban churches have electricity, colorful paintings, skilled musicians, and upgraded sound systems.

Because CHH did not want to promote engagement at any particular church or denomination, we conducted a census of all churches in Kananga to identify the 30 largest churches for eligibility in the program.[12] The pastors of these churches were all keen to open their doors to village congregants. All participants from a given village were invited to the same church, randomly selected from the list of 30 churches, and no two villages were assigned to the same church in the same period of the program.

[11] Alternatives included sports, music, and dance groups, as well as transportation (without space for goods), without any clear "reason" for the invitation.

[12] These churches span the following Christian denominations: Pentecostal, Branhamist, Protestant, Neo-Apostolic, and Kimbanguist. The one missing denomination is that Catholic churches were not included in the program because their Tshiluba language services occurred too early in the morning for participants to arrive on time.

In Kananga (and much of sub-Saharan Africa), people change where they pray much more often than in Western societies and in club-good models of religious participation (Iannaccone, 1992). In focus groups, most participants reported praying at 2-3 different churches in the past five years. It is common to receive invitations from other churches, and people typically accept these and visit another congregation for a period of time before deciding where to continue praying.[13]

3.1.3 Pure Control

In pure control villages, participants were identified in an analogous fashion (prior to random assignment), but they only completed the baseline and endline survey without being invited to any transportation program. They could, of course, continue visiting Kananga at their own expense.

3.1.4 Other Program Details

Across both treatment arms, respondents were transported by the same driver each week. When they arrived in the city, they were greeted by CHH staff who recorded their attendance and, in the market arm, the goods they brought. They departed in the mid-afternoon after market activity had wound down and church services had concluded. Before leaving, CHH staff recorded information about their experiences that day, including goods sold and bought in the market arm. These CHH program data will help us more precisely characterize the treatment.

To avoid potentially swamping the markets or churches with CHH participants, the City Access Program was implemented progressively over a period of two years. In each of ten waves, CHH provided transportation to 60 market participants across 10 villages and another 60 church participants across 10 villages. These waves overlapped by two months, so that at any given point, three waves were running simultaneously. Market treatment villages each came to Kananga on a separate day (Thursday, Friday, or Saturday). Church treatment villages always came on Sundays, but they were partitioned among the thirty participating churches. Figure A2 shows the full project timeline.

[13]Because we anticipate that this treatment might raise questions among secular Western readers, we discuss the ethics of the study in Section A9.

3.2 Village Selection

To identify a set of villages eligible for the transportation program, we first identified all villages within a 3-hour drive from the city limits using satellite and driving time data. We then conducted a village census to collect basic information such as village size and accessibility (Figure A1). We worked with CHH to identify a set of 300 villages that would be eligible for their program according to the following criteria: (*i*) accessibility by motorbike, (*ii*) a population of fewer than 300 families, and (*iii*) continual settlement all year round (rather than only during harvest season). We selected the 300 villages closest to Kananga by straight line distance, but farther than 10 km from the city center — and thus well outside the metropolitan area — that fulfilled these criteria.

3.3 Sampling Participants

We sampled six participants per village using a two-step procedure. First, enumerators conducted a screening survey using a skip pattern to identify eligible households. Our research office then randomly selected baseline respondents from the pool of eligible individuals based on two criteria. First, CHH wanted to include women in the program and therefore enrolled couples rather than individuals.[14] We accordingly excluded single individuals in the screening survey sample. Second, if selected, participants would need to be able to undertake frequent, long motorbike rides on difficult terrain. We therefore also excluded individuals incapable of doing this. From the remaining eligible pool in each village, we randomly selected three couples (six respondents). Enumerators returned the following day to invite these respondents to complete the baseline survey, without mentioning the transportation program (which had not yet been assigned). Table A4 reports descriptive statistics for the baseline sample.

To enable estimation of spillovers, our enumerators also conducted a shorter baseline survey with additional individuals with and without connections to the main respondents. They interviewed (*i*) one close friend of each main respondent, as revealed in a social network module, and (*ii*) two additional randomly sampled individuals without connections to the main respondents in each village. They also interviewed the village chief. All respondents were identified prior to the village being assigned a treatment status to avoid endogenous sampling.

[14] In this setting, it is rare for a woman to travel alone for long distances.

3.4 Random Assignment

We then randomly assigned villages to the treatment or control. We stratified the randomization on (i) geographical region, and (ii) village size. For (i), we divided the villages shown in Figure A1 into ten geographic clusters of 30 villages, each corresponding to a wave of the program implementation. We used these clusters as strata to ensure the villages were nearby. We then binned villages into those above and below the median in the cluster. Finally, following Banerjee et al. (2020b), we conducted 100 randomizations and picked the one that maximized balance across a set of 15 covariates from the village census and baseline survey. Given the rolling nature of the program, we conducted the randomization of each cluster of 30 villages after the baseline survey was complete, just before the start of the interventions in that wave. In our re-randomization protocol, we append each allocation under consideration to all prior treatment assignments (for previous waves) and then take the randomization that achieves the best cumulative balance.

Table A3 summarizes the number of participants across all treatment arms. There are 100 villages in each treatment and in the control. With six main respondents, six network respondents, and two pure control respondents in each village, the full sample size is 4,200.

We test balance using a range of village and baseline characteristics (Table A4). We detect no imbalanced covariates, and an omnibus test of joint orthogonality fails to reject the null.

4 Data

We use data from several sources.

1. Village census (N = 1,384). Enumerators verified the location of villages around Kananga and recorded basic characteristics.
2. Baseline survey (N = 4,493). Enumerators completed a baseline survey with all respondents prior to treatment assignment.
3. Program data on the City Access Program collected by CHH staff (N = 68,414). These include daily data on attendance and other details on participation (e.g., the goods bought and sold).
4. Endline survey (N = 4,303). These surveys were administered roughly 6-12 months after the conclusion of the CHH program (in treatment villages and

nearby control villages).

Except for the program data, all surveys were conducted by an independent team of enumerators working for ODEKA (*L'Organisation des Études Économiques au Kasaï*), a nonprofit survey firm the PIs founded in 2015. ODEKA's objective, as explained to potential survey respondents, is to conduct academic research on "economic development and culture in Kasaï." ODEKA enumerators wore vests with the logo and clearly introduced themselves to prevent confusion with CHH staff.

5 Results

5.1 Take Up and First Stage

We begin our analysis by examining the take-up of the City Access Program and the first stage. According to CHH program data, extensive-margin participation was high across both arms: over 98% and 95% of invited main respondents chose to come to the city at least once in the market and church treatments, respectively. Intensive-margin participation was also high. The program represented an invitation of 26 trips to the city (each week for six months). Of these total trips, 92% and 84% were taken up in the market and church arm, respectively. Figure 1 shows the distribution of program days attended by treatment. The main reasons for not traveling were illness and travel.

These participation rates translate into a strong "first stage": an average increase of 23 and 21 trips to Kananga in the market and church treatment, respectively (Figure 2). Importantly, the median control respondent also went to the city roughly every other month during the study period (consistent with baseline city travel), while treated respondents went every week. The treatment is thus an intensive-margin increase in urban access rather than the first (extensive-margin) exposure to cities of remote, autarkic communities. This intensive-margin impact differentiates the City Access Program from studies of seasonal (Bryan et al., 2014) or longer-term migrants (Yang, 2005).

To characterize the treatment, we use CHH program data on the products sold and bought, as well as sales income reported. The most commonly sold goods by market participants include palm oil, maize, cassava, charcoal, and palm nuts (Figure A3). The most profitable goods (calculated by subtracting reported input price from sale price) were goat, *tshitshampa* (a local spirit), honey, caterpillars, and smoked fish. Al-

though weekly profits varied, market participants reported an average increase in gross sales income of roughly 200%, up from an average of $10 reported at baseline (Figure 3). As buyers, the goods in greatest demand among villagers at the urban market included clothes, meat, kitchenware, and medicines (Figure A4). Market participants' experience varied by whether they were randomly assigned to the inside or outside market (Table A5). Inside market participants sold to more customers at somewhat higher prices (not significant) to achieve higher total earnings, but bought fewer total products (compared to outside market participants). Consistent with their revealed preference (high participation rates), 98% of market and church participants reported being "very satisfied" or "satisfied" during the program (Figure A5).

In sum, the City Access Program generated exogenous variation in access to urban markets and churches that we can use to investigate its impacts on participants' wellbeing and values.

5.2 Estimation

To identify causal effects, we estimate the following equation using OLS:

$$Y_{ihvs} = \beta_0 + \beta_1 \mathbb{1}_{vs}^{Church} + \beta_2 \mathbb{1}_{vs}^{Market} + \alpha_s + \boldsymbol{X}_{ihvs}\boldsymbol{\Gamma} + \epsilon_{ihvs} \tag{1}$$

where i indexes individuals, h households, v villages, and s randomization strata.[15] The α_s are stratum FE (20 in total — a function of geographic region and village size). $\boldsymbol{X}_{ihvs}$ includes individual-level baseline covariates. Specifically, whenever we have baseline Y_{ihvs}, we control for it. To improve precision, we additionally include age, age squared, sex, house quality, years of education, household size, nights hungry in the past month, a dummy for majority ethnicity, a dummy for being born in the village, a dummy for having lived in the city, the log number of family members in the city, and a dummy for being an evangelical Christian. In the appendix, we show robustness to omitting these controls. We cluster standard errors at the village level (300 total).[16]

We consider four families of outcomes: economic effects, perceived wellbeing, values, and psychology. Unless otherwise noted, all outcomes are drawn from the endline

[15] For simplicity, we focus on the intent-to-treat effect. Given the high participation rates, the local average treatment effect is very similar.

[16] This is more conservative than clustering standard errors at the couple level. Multilevel clustering at the household and village level gives almost identical results to clustering at the village level.

survey that occurs on average 9 months after the conclusion of the program.

5.3 Economic Effects

To capture the economic impact of access to urban markets, we estimate Equation 1 using OLS. We observe a 0.2 SD (or 16%) impact of the market treatment on total household monthly income (Table 1, Column 1). The impact on income is robust to varying the controls and using a log or IHS transformation (Table A7). The increase occurs primarily in the upper two-thirds of the income distribution (Figure A6). The coefficient on the market treatment dummy is 0.14 SDs larger than the (insignificant) positive coefficient on the church dummy, a significant difference (p=0.056). This suggests that the income effect reflects urban market access rather than urban access more generally. The income effect is unlikely to reflect more accurate reporting of commercial income than for agricultural income because we observe no impacts on labor time allocation (Table A8). Market participants spend a similar amount of time selling (and farming), compared to their control counterparts, but they make more money from their commercial activities. This income effect does not translate into higher house quality or greater assets (Table A9, Columns 3-4). We also do not observe an average impact on formal employment (Table A9, Column 2).

Why do market participants still have higher incomes nine months after the city access program ended? This increase stems primarily from higher sales income, which is also higher in the market group by 0.16 SDs compared to the control (Table 1, Column 2). Sales increase at the extensive margin (by 8.6 ppts) and the intensive margin (by 0.19 SDs) (Table 1, Columns 3-4). Market participants report an insignificant increase in continuing to sell goods in the city directly (Column 5) and a significant increase in selling through trade partners in Kananga (Column 6). The effect on selling in Kananga is slightly larger in the inside market treatment, while the effect on selling through trade partners is slightly larger in the outside market treatment (Table A11, Columns 2 and 4). This heterogeneity is consistent with the idea that the inside market afforded more chances to become an established urban seller, while the outside market treatment led participants to form more connections with resellers. Market participants also seem to have learned which products are more profitable to sell in the city. They are more likely to sell cash crops like palm oil and coffee, which are in the top ventile and decile of profitability, respectively (Figure A12). The effects on these sales outcomes do not appear in the church arm, again allowing us to attribute them

to urban market activity specifically.

We find no evidence of average economic spillovers: network and non-network respondents show no significant changes in income, sales, formal employment, house quality, or possessions (Table A13). However, we do find evidence of business-stealing among baseline cash-crop sellers. Network and non-network respondents report lower cash crop sales (Table A14), and baseline cash-crop sellers in participants' networks experience lower incomes (Table A15). These patterns suggest that program participants displaced incumbent cash-crop sellers, consistent with the idea that the market treatment enabled participants to capture profitable market share from pre-existing sellers in their networks. However, such crowd-out was sufficiently uncommon that it did not manifest as an average negative spillover on income for network respondents.

5.4 Wellbeing

Market participants appear economically better off than their counterparts in control. But do they *feel* better off? To provide evidence, we study the Self-Reporting Questionnaire (SRQ-20), a 20-question survey module developed by the WHO for measuring mental wellbeing and depression. The module covers physical wellbeing, e.g., "do you often have headaches?" and "do you sleep badly?"; emotional wellbeing, e.g., "do you feel unhappy?" and "do you feel that you are a worthless person?"; and functional wellbeing, e.g., "do you find it difficult to make decisions?" and "are you unable to play a useful part in life?" All questions are "yes" or "no," allowing the researcher to sum the answers to have a raw score out of 20. Although the exact threshold varies by context, researchers often use a score greater than 10 to indicate evidence of depression. As we are unaware of past work validating the threshold in our setting, for completeness, we show results using the raw score, a dummy for scores over 10, and also quantile treatment effects.

According to the SRQ-20, there is evidence that the market treatment eroded subjective wellbeing on average (Table 2). Using the raw score as an outcome, the coefficient on the market dummy is positive (suggesting worse perceived wellbeing) but not significant (Column 1). However, using the 10-out-of-20 cutoff, the market treatment increased the probability of depression among participants by 5.6 percentage points (Column 2). Quantile regression estimates reveal that the treatment effect is concentrated in the upper quartiles of the SRQ-20 score distribution (Columns 3–6) — i.e., among participants with worse mental wellbeing. We observe similar but slightly

weaker effects in the church treatment, and the differences between the market and church arms are never statistically significant.

We consider four potential mechanisms through which the market arm might have undermined subjective wellbeing on average. First, the *income effect* generated by the market arm may have created more responsibility and redistributive pressure on participants, fueling stress. However, positive income shocks within the market arm are associated with improvements in perceived wellbeing from baseline to endline (Figure A7). In other words, the participants who gained the most income from market access are not the ones who report lower subjective wellbeing.

A second potential mechanism is that market participants found it *stressful to engage in commerce*. However, in line with the high satisfaction levels reported during the program, endline market participants also reported commercial work as easier (by 0.21 SDs) and more satisfying (by 0.24 SDs) (Table A16). There were no comparable increases for church participants or when asking about agricultural work. Another potential source of stress is the volatility in income from commerce week to week (visible in Figure 3). However, greater individual-level variance in weekly income during the market access program is, if anything, associated with improvements in wellbeing (Table A8). It does not appear that the stress or income volatility of commercial work is driving the erosion of subjective wellbeing.

Third, markets invariably benefit some more than others, fueling *inequality*. Could lower subjective wellbeing among participants reflect jealousy and social comparisons to different reference groups? There are two potential new reference groups created by the program. First, market participants could compare themselves to other participants in the program, some of whom may have benefited more from market sales. To assess if comparisons to other participants could fuel jealousy and discontent, we examine if greater income inequality among the set of market program participants within a village is correlated with worsening feelings of wellbeing (Table A17). Indeed, the market arm greatly increases income variance (relative to control or the church arm) within the set of participants (Columns 1–2), and this increase is associated with lower subjective wellbeing (Columns 3-4). Specifically, market arm villages that experienced an increase in income variance from baseline to endline experience a 1.2-point worsening of subjective wellbeing. Interestingly, the relationship between greater income variance and worse wellbeing only appears in the market arm: the slope becomes negative in control and the church treatment (Figure 4). This provides some evidence that different

mechanisms may explain the effects on wellbeing in the market and church arms.

There is also evidence that the increase in inequality fuels social comparisons and jealousy. If we rank all main respondents by their baseline and endline income, we can examine how individuals feel when they move up or move down relative to others. There is a strong negative relationship between the change in an individual's rank in the village and the change in their perceived wellbeing, and this relationship is significantly steeper in the market arm than in control (p=0.088) (Figure A9). This relationship flattens, but the slope remains negative and significant even when you control for the change in income. That is, even holding constant changes in income levels, the relative ranking vis-a-vis others in the village appears to co-move with perceived wellbeing. A further piece of evidence about the role of jealousy comes from examining the friends of the main respondents (i.e., our "network" respondents). We estimate heterogeneous treatment effects by respondent type (Table A18). The friends of market participants also experience a deterioration in their perceived wellbeing (Column 2). There is no similar effect among non-network respondents or among the friends of church respondents. This pattern of results is consistent with jealousy among the friends of market respondents fueling declines in wellbeing.

The other potential reference group is city dwellers, many of whom are likely richer than the village participants. Do participants in the City Access Program across both treatment arms feel worse because they now compare themselves to city folk? We cannot test this possibility well in the market arm because we do not know exactly which market participants interacted with in the city. However, we do have data on the other congregants of the churches that village participants attended. We examine whether church participants have worse perceived wellbeing when they were randomly assigned to a relatively more affluent religious community. There is no clear heterogeneity when we compare the effect of being assigned to congregations with greater wealth, education, or income (Table A19). This provides some evidence against the possibility that comparisons to city dwellers are fueling the observed declines in wellbeing.

A final *lost fortune* potential mechanism is that City Access Program participants may look back at a time in which they had higher incomes and feel relatively worse at endline as a result. Although many development programs bring temporary benefits, the perceived loss of good fortune could conceivably explain the decline in subjective wellbeing.

To test this, we first examine whether the effects are more pronounced for partic-

ipants who completed the program more recently. There is exogenous variation — due to administrative quirks — in the amount of time between the end of the program and the endline survey. Regret about losing the program would have presumably been more pronounced soon after its end. However, we detect no heterogeneity by the gap between the end of the program and the endline survey (Table A22). Second, we examine whether market participants whose incomes declined more after the end of the program experience greater erosion in wellbeing (Table A20). We first confirm that there is a meaningful correlation between market earnings (during the program) and endline income (Column 1) as well as better endline subjective wellbeing (Column 2). Moreover, those who experienced a relatively larger change in their income from baseline to the market program period have better, not worse, subjective wellbeing at endline (Column 3). Finally, there is no clear relationship between wellbeing and the change in income from the program period to endline (Column 4). Among those whose weekly income decreased in this period, there is a small positive coefficient that is not close to being statistically significant (Column 5). Figure A10 visualizes the insignificant relationship between changes in earnings from the market program to endline and wellbeing. There is little evidence, then, of a "lost fortune" mechanism.

In sum, the evidence is most consistent with an inequality mechanism in which market participants compared themselves with other "winners" of the program and feel frustrated that they did not manage to benefit as much.

5.4.1 Money Needed to be Happy

To further probe the implications of market access on perceived wellbeing, we take inspiration from Rousseau's famous argument that modern market society makes people feel they need more to achieve material wellbeing.[17] In the endline, we asked respondents 'In general, how much money per month does your family need to be happy?" Market participants respond that they need 0.15 SDs more income than control respondents (Table 3, Column 2). The church treatment has no statistically significant effects, and the gap between market and church is substantial (0.09 SDs), although not significant at conventional levels (p=0.18). The market treatment effect could, of course, be explained by the fact that market participants have more income now: they

[17]"Since these conveniences by becoming habitual had almost entirely ceased to be enjoyable, and at the same time degenerated into true needs," he writes, "it became much more cruel to be deprived of them than to possess them was sweet, and men were unhappy to lose them without being happy to possess them" (Rousseau, 1752).

may adjust their answer up proportionally. To assess this, we compute how far they feel they are from their target income by subtracting their current income from the money they think they need to be happy. Despite their income gains, market participants feel 0.14 SDs further from their target income than control respondents (Table 3, Column 3).

A first possible explanation for why the market access program increases the money its participants feel they need to be happy is the "hedonic treadmill": earning more makes them want even more. While there is a positive correlation between the income participants make and the money they believe they need to be happy, the slope is the same between the market and control (Figure A11). A second explanation is inequality and social comparisons. By observing others (in the village or the city) with greater means, participants may come to view the consumption of new goods as "needs" without which they cannot be happy. We find some evidence consistent with this view: in the market arm, there is a positive relationship between the change in income variance in a village and the amount of money viewed as necessary to be happy (marginally significant) (Table A21).

5.5 Values

We now turn to the ways in which market access shaped the deeply held values and social preferences of the market participants. We begin by examining a series of questions designed to elicit core values: "what are the components of a good life?" and "what are the qualities of a good person?" For both of these questions, we did extensive qualitative work with focus groups to generate a list of categories and a visual representation of each (Figure A12).[18] Enumerators then used laminated sheets as visual aids, partitioning the space in each of the seven categories. Respondents were asked to allocate ten buttons into the different categories according to their conception of a good life. They could put all their buttons on one category or spread them out, depending on their preferences. We designed these activities in this way to encourage respondents to think hard about the questions. Having a budget constraint (ten buttons) also nudged them to choose between the relative importance of competing values.

[18]For example, the categories for the "components of the good life" included: having a large and loving family, having a long life without illness or injury, living in a peaceful and harmonious community, having the possibility of pursuing advanced study, being close to god and belonging to an active church, having a job where I make steady income, and being close to one's ancestors and honoring their traditions.

We similarly elicited respondents' views of a good person with twelve categories. Finally, we administered the standard World Values Survey question about which values they think children should be encouraged to learn at home, but following the similar logic, required respondents to first pick five values and then rank them in order of importance.

Using this measure we observe a consistent reduction in the importance of religion and god — and a corresponding shift toward "bourgeois values," including income, education, productivity, hard work, and saving. Table 4 summarizes the main treatment effects across all three value exercises. Figures A13, A14, and A15 show the raw distributions at endline across treatments. Although religion/religiosity tends to remain the most important value, its relative importance drops substantially in the market arm across all three exercises. In fact, at endline, religion is surpassed by family in the market arm. The negative treatment effect on religion is substantial in magnitude, ranging from 0.19 SD for child values to 0.25 for the good person (Tables A23, A24, and A25). Across these different measures, respondents shift toward various bourgeois values. In the good life exercise, for instance, men shift to education, and women shift toward income.[19] In the good person exercise, men shift toward productivity and thrift, while women shift toward diligence and thrift. In the child values exercise, men shift toward thrift, while women shift toward generosity. We do not observe similar patterns in the church treatment arm, suggesting this revision of values occurs because of participants' experiences in the urban market specifically.[20]

Does the relative decline in the importance of religious values translate into lower engagement in church? It is not obvious that it would, given that religion remains among the most important values for most respondents. We observe no impact on attending regular Sunday services — unsurprising given the social importance of the church in the village — but erosion of other forms of religious participation (Table A26).[21] For example, men report less engagement in peripheral church activities, such as bible study groups, while women report less private prayer (Table A27). Using standard modules from Allport and Ross (1967), we also observe no change in self-reported intrinsic religiosity — e.g., the sense of god's presence in one's life (Table A28) — perhaps because it is top-coded for the great majority of respondents. We

[19] Some respondents also shift toward tradition, but this is a comparatively small effect that is significant because it is a very rare choice.

[20] The church arm does appear to cause an increase in the perceived importance of tolerance in the meaning of a good person, though there is no (detectable) corresponding increase for child values.

[21] These survey questions about religious participation come from Koenig et al. (1988).

do, however, find an increase in reported extrinsic reasons for church participation, e.g., being with friends and having social insurance during difficult times (Table A29). Admitting that you attend church for the social network it provides is, in this deeply religious context, consistent with a more secular view of the importance of church.

One natural concern is cheap talk: would we observe similar results with behavioral or incentivized outcomes? We address this concern using results from the Dictator Game (DG). Participants played twelve iterations of the DG, in which they chose how much to allocate of 1,000 CF to another party, which varied based on the iteration.[22] The DG allows us to measure altruism overall and toward each specific other party.[23] Respondents also played a version of the Choose Your Dictator Game (CYDG) in which respondents ranked these same other parties in the order in which they would prefer to have them play a dictator game with the respondent at the receiving end. This game provides a measure of respondents' beliefs about these other parties' altruism toward them.

Across all other parties, there is a negative but insignificant coefficient on the market arm indicator in the DG (Table 5). The market does not appear to have caused average impacts on altruism.[24,25] However, we observe a consistent decrease in altruism toward members of the religious in-group: market participants give less to Christians (-25 CF), to members of their own denomination (-17 CF), and to members of their own church (-33 CF). We similarly observe that market participants rank Christians lower than control participants in the CYDG, and the coefficients on own denomination and own church are negative but not significant (Table A30). In sum, when there are real

[22]These iterations included nuclear family member, extended family member, person in Kananga, person in village, Christian, non-Christian, member of own tribe, member of other tribe, member of own denomination, member of other denomination, member of own church, and person who does not go to any church. They were informed that one of these iterations would be randomly selected by the tablet and paid out.

[23]It also allows us to measure moral universalism, following Enke (2023): i.e., the gap between different in- and out-groups, such as nuclear versus extended family. The other pairs we have include person in the village versus person in Kananga, member of own tribe versus other tribe, person who is Christian versus a person who is non-Christian, and person from own denomination versus from other denomination. Using the five pairings of in- and out-group covered by our other parties, we observe no average change in moral universalism.

[24]While the *doux commerce* theory expects market access to promote generosity to others, the *homo economicus* theory expects that markets would make people more selfish. Our results provide support for neither.

[25]Even with the dictator game, one might be concerned that our results are influenced by experimenter demand effects. To test this, we included a round in which we added a prime instructing participants that "we expect someone like you to be more generous," following de Quidt et al. (2018). Reassuringly, this prime did not increase giving, and there is no differential impact in the market arm.

stakes to their decisions, market participants appear less willing to share resources with their religious communities and to expect less in return. These results make it appear unlikely that the shift from religious to bourgeois values reflects cheap talk alone.

5.6 Mechanism

We investigate four potential mechanisms for this secularizing effect of market access: income, socialization, insurance, and agency. First, given the well-known negative association between income and religion (Barro and McCleary, 2003), one might expect the value shifts we observe to move in tandem with the income effect from the market treatment. However, in the market arm, there is only a weak and insignificant negative association between endline income and the number of buttons respondents placed on religion in the good life exercise (Figure A16). More strikingly, the relationship between changes in income and changes in buttons on religion is, if anything, positive (though again the slope is not statistically significant). It does not appear that the positive income shocks enjoyed by many market participants explain the declines in the relative importance of religion.

Second, *socialization*: market participants may have interacted with more secular urban individuals, whose values rubbed off on them. To examine this, we administered surveys with a random sample of urban buyers and sellers, including identical exercises to elicit moral values. In fact, urban vendors in the Kananga markets are not less religious than our baseline respondents (Figure A17). As a second test, we leverage the inside-outside market sub-randomization. The goal of this cross-randomization was to generate a first stage in the number of customers that market participants would encounter: in the inside market, we anticipated a larger number of interactions than the fewer (wholesale) interactions in the outside market. The randomization did achieve a first stage in the number of buyers to whom market participants reported selling (Table A5). However, the effects on religious values are no more pronounced among inside-market participants, who had greater contact with urban vendors (Table A32), than outside-market participants. The socialization mechanism does not appear to explain the shift from religious to bourgeois values we observe.

A third possibility is an *insurance effect*: if markets provide an alternative to church-based informal insurance, demand for religious participation might fall. However, market participants show no significant decrease in agreement with "I go to church to be part of a community that supports me in difficult times" (Table A29), and there is no

significant decrease in church-based ROSCA participation (Table A31).

The evidence is most consistent with a fourth mechanism: *agency*. Following Bénabou and Tirole (2002), individuals rationally sustain beliefs about their own efficacy as a motivational device when the returns to effort are high. By raising the return to individual effort — participants learned that their own commercial decisions, crop choices, and trading relationships could substantially raise their incomes — the market treatment plausibly shifted participants toward attributing outcomes to their own actions rather than to divine control.

We find direct support for this interpretation across three sets of evidence. First, we administered two additional button-allocation exercises to unpack how market access reshaped participants' perceived sources of influence in different domains of life.[26] In both the personal life (marriage and family) and professional life (work and income) domains, "god" was the top category at baseline (Figure A18). In the market arm, however, respondents shifted away from "god" toward "self" in the personal domain, and toward "friends" and "luck" in the professional domain (Table 7). This mirrors the pattern in the core values exercises, where market participants placed less weight on religion and more on bourgeois values: the market appears to have substituted personal and social agency for divine control as the perceived driver of outcomes. If participants come to believe that their own choices and social networks — rather than god — determine their success, it is natural that religion would decline in relative importance as a core value.

Second, we elicited agreement between opposing viewpoints on standard psychological traits.[27] Market participants are more likely to agree that "most of the success or failure in people's lives result from their choices" (rather than "from forces beyond their control") by 0.17 SDs, indicative of a stronger locus of control (Table 6). They also exhibit more grit (by 0.13 SDs) compared to control respondents—a willingness to persist toward goals and overcome setbacks at work.[28] We find no treatment effects

[26]The full prompt for the marriage and family exercise was: "Now I want to talk about the forces that shape our lives. Please allocate these buttons according to the forces that were most important in shaping your life. What determines the happiness and harmony you experience in your marriage and in your family?"

[27]We have found that this enumeration technique generates more precise answers in this context (Bergeron et al., 2024).

[28]For grit, we had two sets of viewpoints that we combined into a single index increasing in grit. The first set is: "In the pursuit of my goals, I often get discouraged when I encounter setbacks" versus "in the pursuit of my goals, setbacks don't discourage me." The second set is: "I finish whatever projects I begin no matter how long they take" versus "I sometimes have trouble finishing projects that take more than a few months."

on optimism, self-control, or resilience.[29] The contrast between grit and resilience is itself informative: both concern the ability to overcome adversity, but grit questions specifically concern work and goal pursuit, while resilience questions are more general. The fact that market access strengthens only the work-specific trait is consistent with participants updating their sense of personal agency in the commercial domain in particular, rather than experiencing a broader shift in psychological disposition.

6 Conclusion

This paper studied a field experiment providing free transportation to urban markets to examine how market access shapes wellbeing and values. Our analysis was motivated by two long-standing theoretical traditions: the *doux commerce* view, which anticipates that markets promote prosociality and bourgeois virtues, and the *homo economicus* view, which anticipates that markets erode religious ties, fuel alienation, and promote a more self-interested orientation toward the world.

In contrast to past observational and lab-experimental work (Henrich et al., 2001; Enke, 2023; Rustagi, 2025), our evidence is ultimately more consistent with the homo economicus view.[30] Despite its positive impact on incomes, market access undermined subjective wellbeing on average and led participants to feel further away from their desired income. The mechanism behind this result appears to be within-village inequality: the market treatment generated heterogeneous income gains, and participants who fell in relative income rank within their village experienced the sharpest declines in wellbeing. Friends of market participants also experienced lower wellbeing, consistent with

[29] The corresponding questions for these three traits are as follows. Optimism: "In uncertain times in my life, I usually expect the worst outcome" versus "In uncertain times, I usually expect the best." Self-control: "I have a hard time breaking bad habits" versus "Breaking bad habits is no problem at all for me" and "I can always resist temptation" versus "I sometimes have a hard time resisting temptation." Resilience: "When bad things happen in my life, I know I will be able to endure and find my way again soon" versus "When bad things happen in my life, I often wonder how I will ever recover and find my way" and "I am usually not bothered by stressful events" versus "I have a hard time coping with stressful events."

[30] Although we find no evidence that markets promote prosociality, we note that our study can only test one potential mechanism behind this relationship: that many anonymous, ephemeral market transactions change people's beliefs about others and cultivate trust and generosity (Henrich et al., 2001). Our market arm approximates this mechanism, and it finds no evidence consistent with this prediction. An alternative mechanism, explored by Rustagi (2025), is that markets can create incentives to cultivate a reputation as a trustworthy type when products have an unverifiable quality dimension (e.g., the health of livestock). Given the goods we observe market participants trading, we cannot credibly test this mechanism.

jealousy spreading through social networks rather than any direct effect of market participation on non-participants.

Market access also had a pronounced secularizing effect. Across three independently elicited measures — the components of a good life, the qualities of a good person, and the values parents wish to instill in children — participants consistently placed less weight on religion and more weight on bourgeois values such as income, education, hard work, and thrift. This shift was corroborated by incentivized behavior: market participants gave less to members of their religious in-group in the Dictator Game and expected less generosity in return. We investigated four potential mechanisms and found evidence against income effects, socialization, and insurance as explanations. The evidence instead points to an agency mechanism: by raising the return to individual effort, market access led participants to attribute outcomes to their own choices rather than to divine control. Consistent with this interpretation, market participants shifted away from "god" and toward "self" as the perceived driver of outcomes in their personal and professional lives, and scored higher on locus of control and work-specific grit. In sum, the results suggest that a market-induced shock to the return on effort crowds in beliefs about personal efficacy and crowds out religious values.

These findings carry two broader implications. First, the gap between income and wellbeing we document — market access raises the former while lowering the latter — reinforces the importance of moving beyond income in welfare analysis of development policies. The channel here, within-village inequality and the reference-point shifts it generates, points toward the relevance of relative rather than absolute gains in determining how households experience economic integration. Second, and more fundamentally, our results show that markets are not value-neutral institutions. Standard welfare analysis assumes that preferences are fixed and exogenous to the policies being evaluated. But if market access causally reshapes the values, social preferences, and psychological traits of those exposed to it, a natural question arises: should welfare analysis of market integration be conducted using the preferences individuals hold before or after exposure? This paper cannot resolve that question, but suggests that the question is worth taking seriously.

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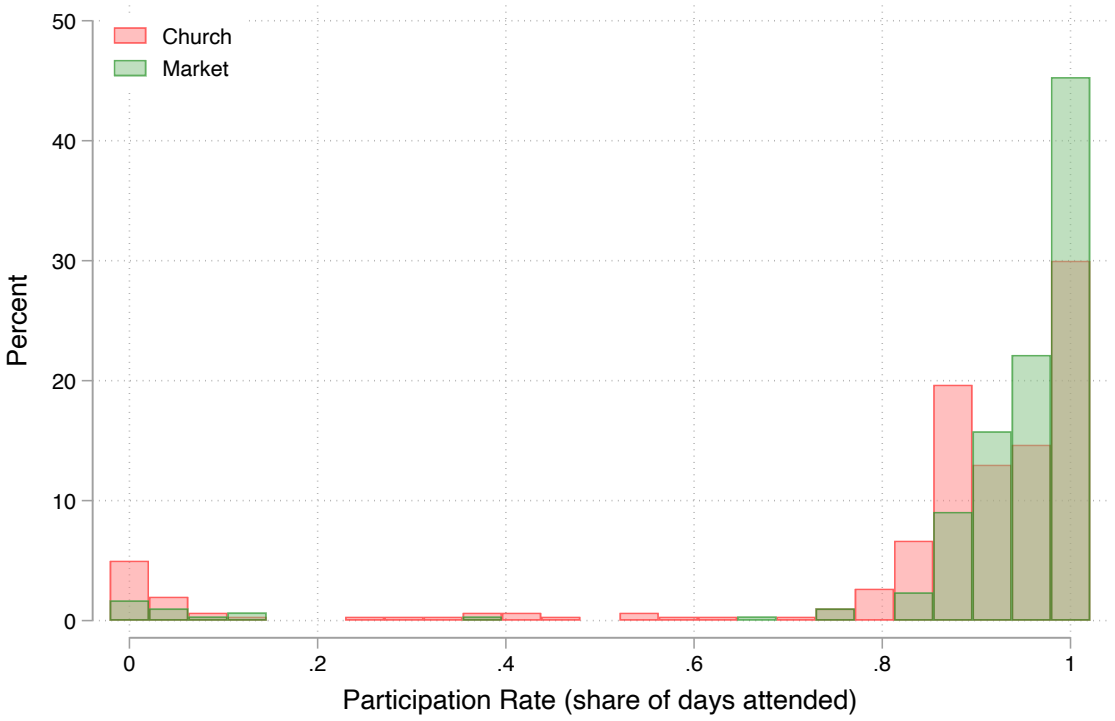
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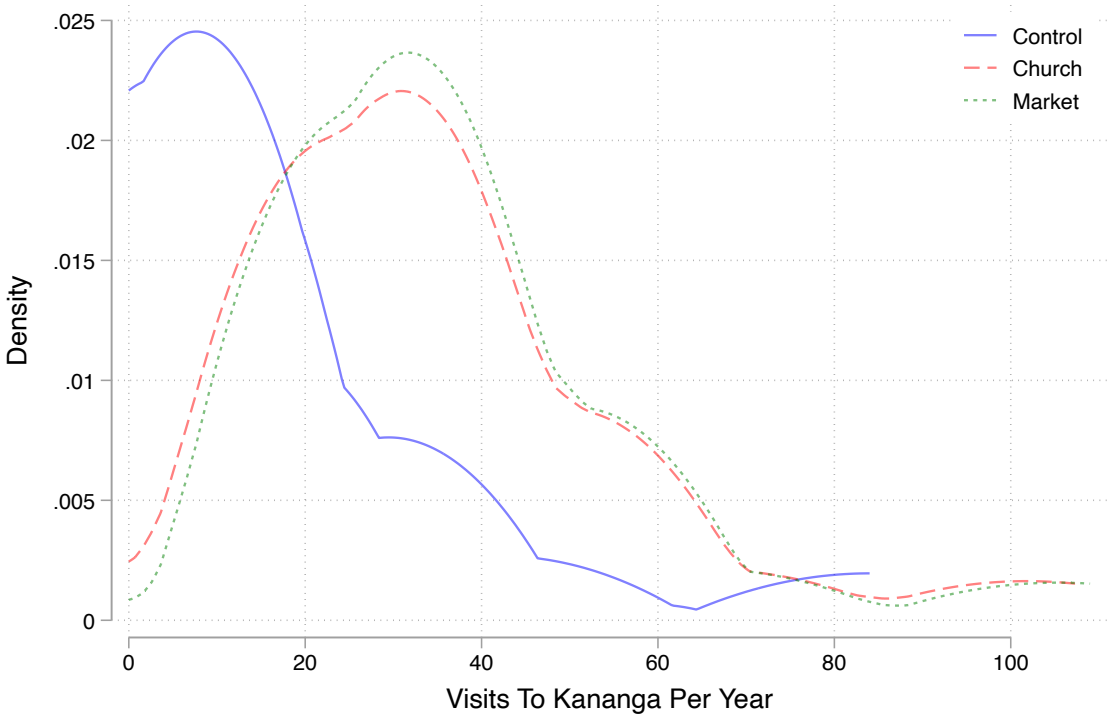
7 Exhibits

Figure 1: Participation Rates in the City Access Program by Treatment



Notes: This figure shows the share of all 26 possible treatment days that participants attended (i.e., went to Kananga) by treatment.

Figure 2: First Stage: ≈ 22 More Trips to Kananga



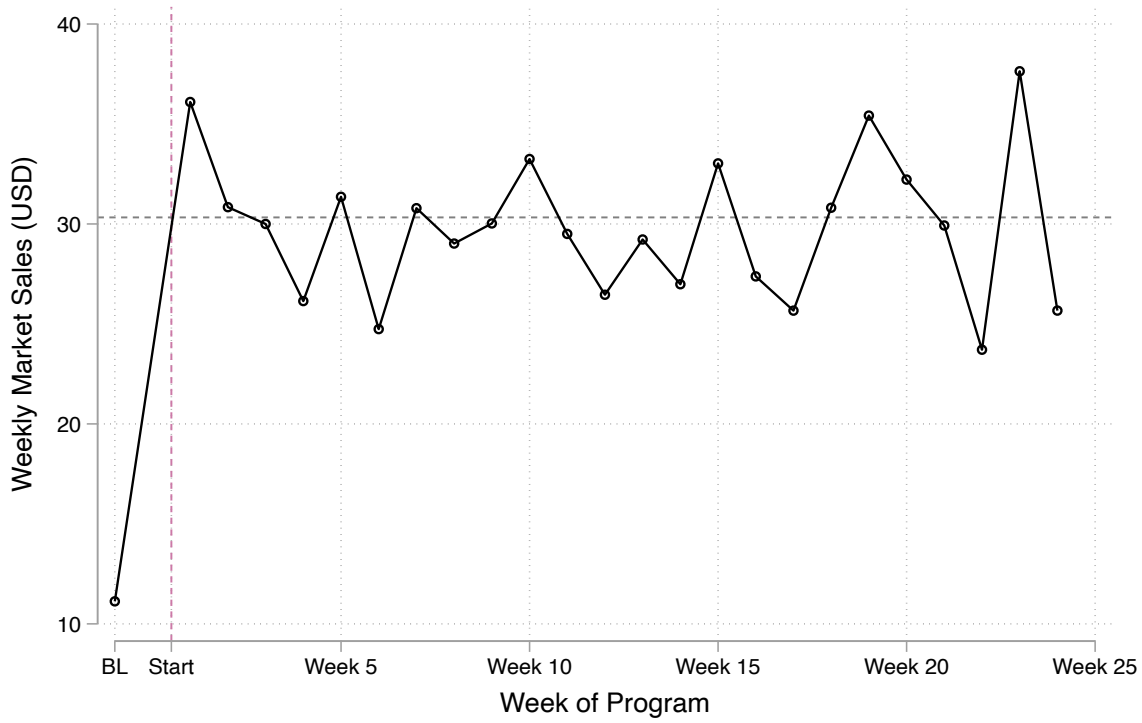
Notes: This figure shows the estimated number of trips made to Kananga each year by treatment. We use data from the baseline and endline survey on frequency of travel to Kananga to estimate the rate of travel to Kananga for the control group. We then supplement these data in the treatment group using CHH program data on recorded trips to the city. These visits thus include those under the auspices of the City Access Program as well as any additional private travel conducted by respondents.

Table 1: Treatment Effects on Income and Sales

	Total	Sales			Sales in Kananga		Products Sold		
	Income	Sales	Extensive	Intensive	Direct	Through Partner	Palm Oil	Any New Item	New Coffee Sales
Church	0.057	-0.027	-0.004	-0.083	-0.010	-0.002	-0.010	-0.016	-0.003
	(0.073)	(0.060)	(0.037)	(0.126)	(0.025)	(0.015)	(0.017)	(0.015)	(0.008)
Market	0.200***	0.156**	0.086**	0.193*	0.032	0.032**	0.042**	0.043**	0.033***
	(0.074)	(0.060)	(0.037)	(0.110)	(0.023)	(0.016)	(0.019)	(0.018)	(0.011)
Stratum FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Baseline Outcome	Y	Y	Y	Y	N	N	N	N	N
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1720	1727	1727	587	1727	1727	1728	1727	1727
Control_Mean	0	0	.47	.52	.14	.049	.082	.061	.018
R2	.15	.17	.16	.34	.08	.038	.03	.039	.037
Market_v_Church	.056	.0049	.011	.045	.06	.058	.0062	.00078	.0015

Notes: The table summarizes the results from estimating Equation 1 on total household income, sales, and products sold. All outcomes are measured in the endline survey. The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Figure 3: First Stage: ≈ 95% Increase in Weekly Market Sale Income



Notes: This figure shows gross weekly market sales (in USD) reported by market participants according to CHH program data. The baseline estimate (indicated "BL") comes from our baseline surveys prior to the intervention.

Table 2: Treatment Effects on Perceived Wellbeing

	SRQ >10	SRQ Total	Q1	Q2	Q3	Q4
Church	0.046	0.351	0.117	0.394	0.748**	0.526**
	(0.030)	(0.322)	(0.238)	(0.325)	(0.314)	(0.254)
Market	0.056**	0.366	0.176	0.670**	0.676**	0.576**
	(0.028)	(0.318)	(0.334)	(0.288)	(0.306)	(0.235)
Stratum FE	Y	Y	Y	Y	Y	Y
Baseline Outcome	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y
Observations	1727	1727	1727	1727	1727	1727
Control_Mean	.48	10	10	10	10	10
R2	.16	.26	.16	.19	.18	.14
Market_v_Church	.71	.96	.86	.35	.82	.84

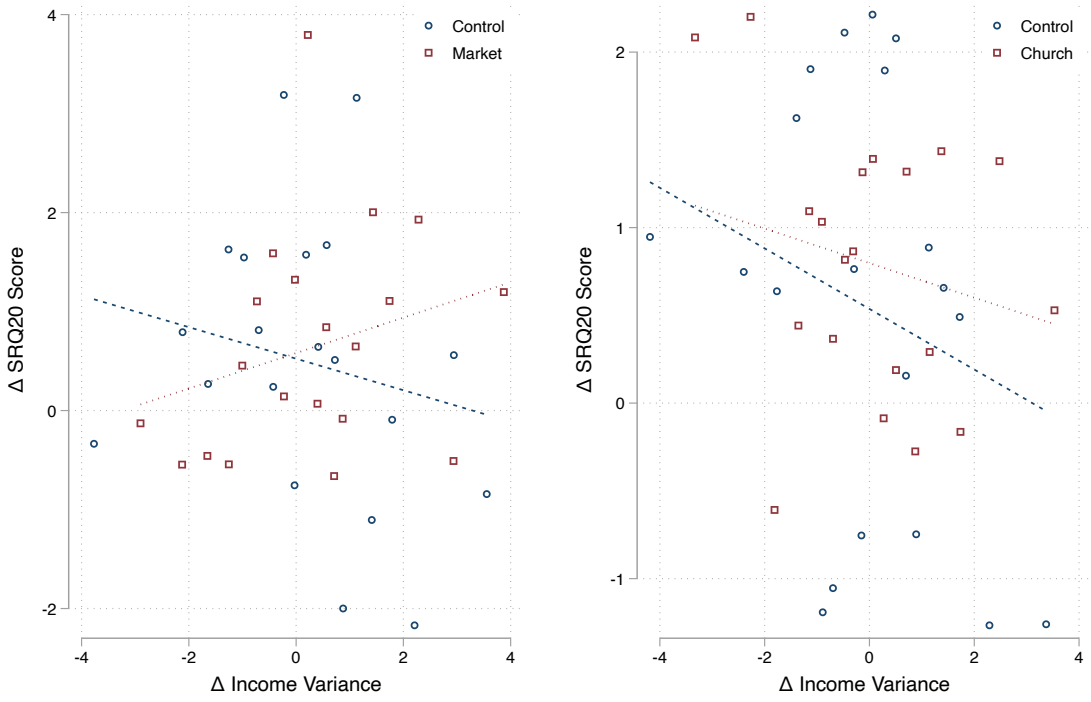
Notes: This table summarizes the results from estimating Equation 1 with self-reported wellbeing (as measured by the SRQ-20) as the outcome. In the first column, the dependent variable is the raw SRQ-20 score (out of 20), with higher values indicating worse wellbeing. In the second column, the dependent variable is a dummy for the SRQ-20 score being over 10, a widely used cutoff indicating evidence of depression. The next four columns summarize results of quantile regressions using quartiles of the SRQ-20 score. The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table 3: Treatment Effects on Money Needed to be Happy

	Income	Income to be Happy	Gap: Income to be Happy - Income
Church	0.057	0.065	0.063
	(0.073)	(0.062)	(0.062)
Market	0.200***	0.153**	0.141**
	(0.074)	(0.061)	(0.060)
Baseline Outcome	Y	N	N
Controls	Y	Y	Y
Observations	1720	1725	1719
R^2	0.149	0.056	0.055
Clusters	300	300	300
Control_Mean	0	0	0
Market_v_Church	.056	.18	.24

Notes: This table explores how the market access program shaped the amount of money participants believe they need to be happy. It summarizes results from estimating Equation 1 with the following outcomes: income, income to be happy, and the gap between the two (income to be happy - income). The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome (when available) and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Figure 4: Within-Village Income Inequality and Wellbeing



Notes: This figure shows the correlation of changes in within-village income variance (among main respondents) and changes in the SRQ-20 score from baseline to endline. A higher SRQ-20 score indicates worse wellbeing. The left panel shows the relationship for control and the market treatment; the right panel shows it for the control and church treatment.

Table 4: Treatment Effects on Moral Values

	Good Life			Good Person			Child Values		
	Religion	Education	Income	Religion	Productivity	Thrift	Religion	Independence	Thrift
Church	0.054	0.064	0.059	-0.142	0.054	-0.015	-0.027	-0.008	0.061
	(0.089)	(0.066)	(0.144)	(0.131)	(0.076)	(0.071)	(0.121)	(0.118)	(0.078)
Market	-0.358***	0.132**	0.179	-0.437***	0.239***	0.218***	-0.338***	0.154	0.121
	(0.081)	(0.061)	(0.140)	(0.121)	(0.072)	(0.066)	(0.107)	(0.110)	(0.084)
Stratum FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Baseline Outcome	Y	Y	Y	N	N	N	N	N	N
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1724	1724	1724	1721	1721	1721	1727	1727	1727
R^2	0.069	0.071	0.105	0.052	0.034	0.038	0.037	0.082	0.064
Clusters	300	300	300	300	300	300	300	300	300
Control_Mean	2.3	.94	1.6	2.4	.96	1	3.1	1.3	.74
Market_v_Church	6.5e-07	.3	.35	.0077	.016	.00082	.0089	.14	.49

Notes: This table summarizes treatment effects on moral values. It shows the results from estimating Equation 1 using as the outcome: the number of buttons allocated to religion and various "bourgeois values" for the good life, good person, and child values elicitation exercises. For the good life exercise, there were seven possible categories, and for the good person and child values there were twelve. For legibility, this synthetic table only shows three categories for each exercise. Full results can be found in Table A23 and A24, respectively. The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table 5: Treatment Effects on Altruism (DG)

	Nucl. Family	Extend. Family	Christian	Own Tribe	Other Tribe	Own Denom.	Other Denom.	Own Church	Avg
Church	1.144	11.613	6.474	7.360	-8.089	-0.820	6.089	-4.646	1.603
	(9.598)	(9.413)	(11.151)	(10.341)	(10.496)	(11.074)	(11.342)	(11.788)	(8.617)
Market	-2.574	6.314	-24.740**	-7.870	-16.454	-17.798*	-3.675	-32.891***	-9.378
	(10.144)	(9.048)	(10.422)	(9.851)	(10.189)	(10.117)	(10.757)	(10.495)	(7.889)
Stratum FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1720	1720	1720	1720	1720	1668	1669	1668	1720
R^2	0.041	0.033	0.036	0.037	0.035	0.029	0.033	0.038	0.036
Clusters	300	300	300	300	300	300	300	300	300
ControlMean	306	265	308	254	227	301	230	325	254
Ftest	.72	.56	.0028	.14	.45	.12	.38	.015	.21

Notes: This table summarizes the results from estimating Equation 1 with allocations to different other parties as the outcome. For each other party, the respondent chose how much to allocate to them out of 1,000 CF. The list of all other parties includes nuclear family member, extended family member, person in Kananga, person in village, Christian, non-Christian, member of own tribe, member of other tribe, member of own denomination, member of other denomination, member of own church, and person who does not go to any church. The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table 6: Treatment Effects on Psychological Traits

	Locus of Control	Grit	Optimism	Self-Control	Resilience
Church	0.068	0.089	0.026	0.013	0.076
	(0.069)	(0.066)	(0.065)	(0.060)	(0.061)
Market	0.175**	0.127**	0.042	-0.058	-0.069
	(0.069)	(0.060)	(0.066)	(0.060)	(0.064)
Stratum FE	Y	Y	Y	Y	Y
Baseline Outcome	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y
Observations	1717	1719	1676	1665	1368
R^2	0.023	0.053	0.038	0.071	0.025
Clusters	300	300	298	298	240
ControlMean	2.7	-.035	.00016	-.034	-.033
Ftest	.13	.57	.81	.22	.028

Notes: This table summarizes the results from estimating Equation 1 with various psychological traits as the outcome. Each outcome (and the underlying survey questions) is described in Section 5.6. The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table 7: Treatment Effects on the Forces Influencing Private Life and Work

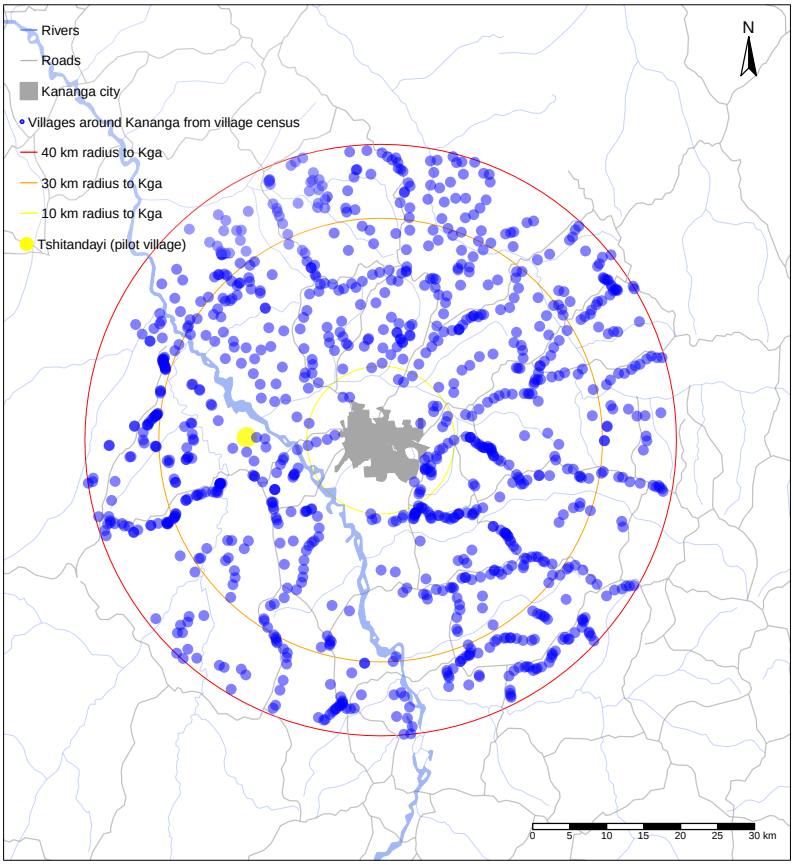
	Self	Family	Friends	God	Custom	Luck
Panel A: Marriage and Family						
Church	0.229**	0.062	0.050	-0.196	-0.059	-0.078
	(0.097)	(0.085)	(0.075)	(0.141)	(0.037)	(0.099)
Market	0.330***	0.002	0.068	-0.462***	0.067	-0.009
	(0.107)	(0.084)	(0.077)	(0.124)	(0.041)	(0.097)
Observations	1544	1544	1544	1544	1544	1544
R^2	0.040	0.031	0.061	0.081	0.088	0.034
Clusters	271	271	271	271	271	271
ControlMean	2	1.8	1.1	3.7	.23	1.1
Ftest	.33	.47	.82	.038	.0016	.46
Panel B: Work and Income						
Church	-0.096	0.032	0.124	-0.101	-0.001	0.058
	(0.116)	(0.089)	(0.078)	(0.148)	(0.053)	(0.089)
Market	0.055	-0.095	0.192***	-0.438***	0.083	0.223**
	(0.121)	(0.084)	(0.074)	(0.134)	(0.052)	(0.091)
Observations	1544	1544	1544	1544	1544	1544
R^2	0.057	0.030	0.048	0.093	0.078	0.056
Clusters	271	271	271	271	271	271
ControlMean	2.3	1.6	.9	4	.32	.95
Ftest	.21	.14	.39	.02	.13	.077
Stratum FE	Y	Y	Y	Y	Y	Y
Baseline Outcome	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y

Notes: This table summarizes the results from estimating Equation 1 with the number of buttons allocated to each of the possible forces shaping one's life as the outcome. The first panel shows results concerning the forces that shape "happiness and harmony you experience in your marriage and in your family," and the second panel shows results concerning forces that shape "the choice of work and amount of income that you have today." The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Appendix

A1 Additional Exhibits — Setting

Figure A1: Sampling Frame — Villages around Kananga



Notes: This map shows the 988 villages mapped in our village census that constitute the sampling frame.

Table A1: Village Characteristics

Variable	Mean	Std. dev.	Min	Max	N	J
Number of hhs per village	99.74	69.48	10	300	300	300
Villages has a market	0.08	0.27	0	1	300	300
Village has a church	0.88	0.33	0	1	300	300
Household monthly income (USD)	23.66	30.02	0	421	1,727	300
Work in agriculture	0.92	0.27	0	1	1,727	300
Salaried employment	0.12	0.32	0	1	1,728	300

Notes: The table summarizes information about the 300 villages in our sample. The data for the first three rows come from the initial village census conducted prior to the intervention. The data for the next three rows come from the baseline survey.

Table A2: Comparing Markets: Urban v. Rural

	Urban Market	Rural Market	Difference
Number of customers	5.23	2.19	3.04***
Number of people they speak with	7.35	5.82	1.53**
Number of products sold	1.48	1.42	.06
Total earnings (USD)	8.46	6.31	2.15***
Number of products bought	2.24	3.69	-1.45***
Number of vendors bought from	2.14	3.54	-1.4***
Share of these vendors known	0.19	0.35	-.16***

Notes: The table summarizes information about the two urban markets included in the City Access Program and the set of village markets present among sampled villages. Enumerators conducted surveys with a sample of vendors in rural market to provide comparable data to CHH program data with market participants during the program.

A2 Additional Exhibits — Design

To invite villages to participate in the City Access Program, CHH staff used the following scripts.

- **Common**:
  - "I am delighted to inform you that your village has been selected to take part in a project focused on providing urban access organized by Congo Helping Hands. CHH is a non-profit organization founded in 2004. CHH's main goal is to respond to critical needs in the province and to promote the wellbeing of its inhabitants. Past projects have focused on health and sanitation. The current project aims to facilitate access through providing transportation to Kananga for villagers in Kasai Central."

- **Treatment-specific**:
  - Market: "The reason to go to Kananga is that CHH would like to invite you and your spouse to go to the main market in Kananga to buy and sell goods as you please for the next six months. CHH will provide transportation for you and your partner in the morning and back to the village in the

afternoon."

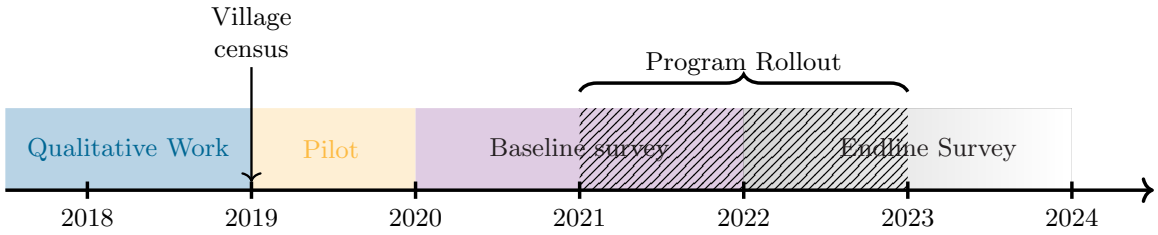
– Church: "The reason to go to Kananga is that CHH and the church [name] would like to invite you and your spouse to attend their Sunday services in Kananga for the next six months. CHH will provide transportation for you and your partner in the morning and back to the village in the afternoon."

Table A3: Allocation of Units by Treatment

	Main Respondents	Network Respondents	Non-Network Respondents	Chief	Villages
Market	600	600	200	100	100
Church	600	600	200	100	100
Pure Control	600	600	200	100	100
Total	1,800	1,800	600	300	300

Notes: The table summarizes the allocation of different respondent types across the arms of the experiment.

Figure A2: Timeline



Notes: This figure shows the timeline of the project. In each of ten waves, the baseline survey preceded randomization, program rollout, a gap of 6-12 months, and then the endline survey.

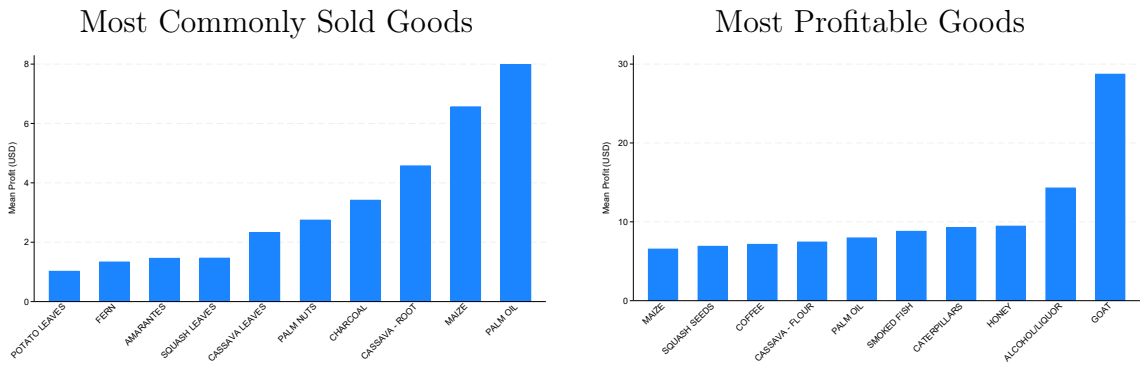
Table A4: Balance Table

	Church		Market		All		
	β_1	p_1	β_2	p_2	*Joint Test* (p)	N	*Control Mean*
Age	0.288	0.747	0.413	0.637	0.890	1800	36.368
Years of education	0.005	0.905	0.005	0.913	0.991	1800	2.448
Frequency in Kananga	-0.023	0.800	-0.008	0.926	0.967	1800	3.977
Income	2718.383	0.686	793.417	0.901	0.921	1799	68300
Nights hungry (month)	0.053	0.652	0.038	0.724	0.888	1800	1.308
Market in village	-0.010	0.792	-0.020	0.588	0.862	1800	0.090
Calories purchased	0.063	0.601	0.038	0.743	0.868	1800	4.345
Ingroup preference	-0.200	0.803	-0.272	0.735	0.941	1800	54.847
Moral parochialism	-0.023	0.411	-0.019	0.509	0.679	1800	0.494
Church position	0.002	0.949	0.002	0.947	0.997	1800	0.217
Religiosity	0.002	0.972	0.013	0.841	0.977	1734	3.420
Religiosity (intrinsic)	0.042	0.518	0.017	0.819	0.804	1734	-0.370
Religiosity (extrinsic)	0.015	0.698	0.003	0.933	0.919	1734	0.385
Number of pastors in village	-0.020	0.879	-0.070	0.578	0.850	1800	1.090
Attrition	0.002	0.960	0.005	0.877	0.987	1800	0.328

Notes: The table summarizes balance tests using data from the baseline survey and village census. We regress each characteristic on treatment dummies and provide the associated coefficients and p-values. We also show the p-value from a joint F-test.

A3 Additional Exhibits — Results: Take Up and First Stage

Figure A3: Profit Margins: Goods Sold by Market Participants



Notes: This figure shows the ten most commonly sold products and ten most profitable products sold by market participants in the City Access Program. Profits are estimated using data on input and sales prices collected by CHH program data.

Figure A4: Goods Demanded by Villages in Urban Market



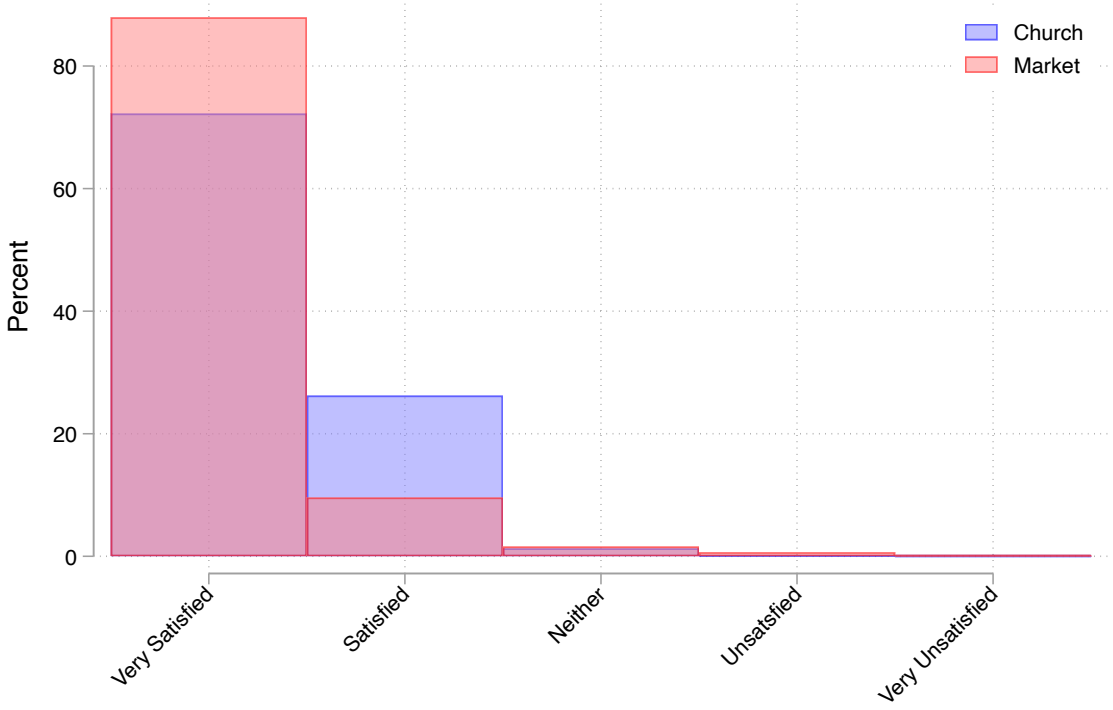
Notes: This figure shows the goods for which villagers reported the greatest demand, if offered a chance to visit the urban market.

Table A5: Urban Markets: Inside v. Outside

	Inside Market	Outside Market	Difference
Number of customers	6.39	4.10	2.29***
Share of customers known	0.39	0.26	.13***
Number of people spoken with	9.01	5.78	3.23***
Mean sale price of products (USD)	6.57	5.32	.72
Total earnings (USD)	9.12	7.87	1.25**
Number of products bought	2.11	2.36	-.25**
Number of vendors bought from	2.03	2.25	-.23***
Share of these vendors known	0.28	0.11	.17***

Notes: The table compares the inside market (*grand marché*) and outside market (*Nkashama*) using CHH program data. The table shows averages for each market followed by the difference (and significance according to t-tests).

Figure A5: Satisfaction During Program



Notes: This figure shows satisfaction levels of market and church participants, as reported to CHH staff at the end of each day in the city.

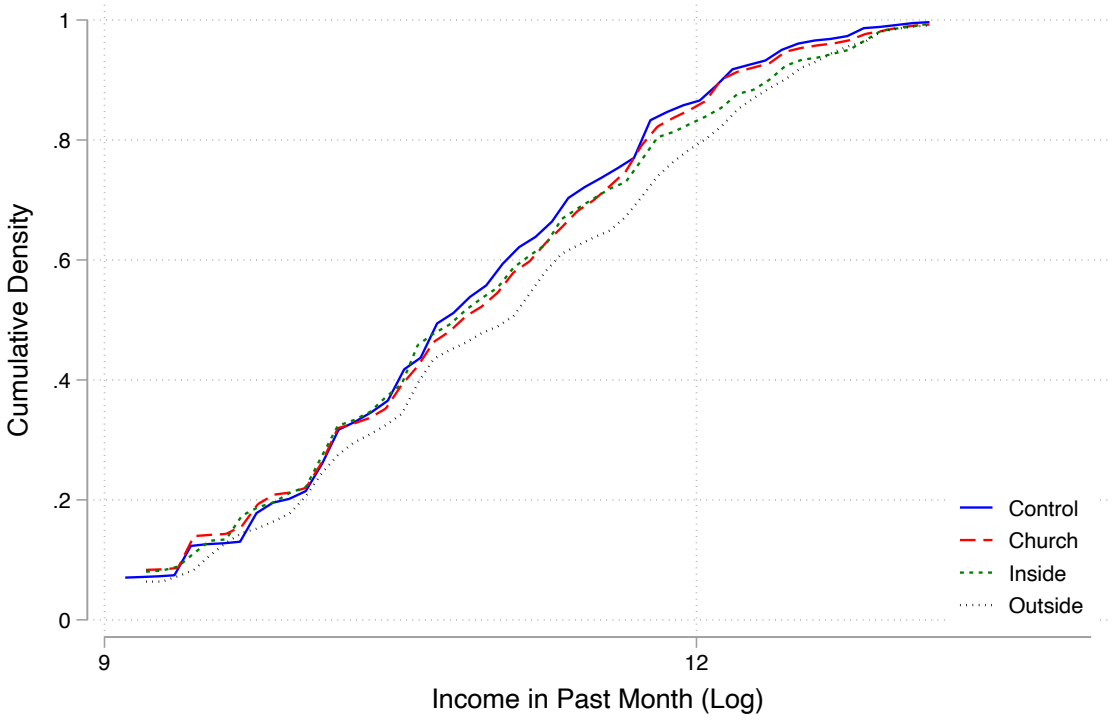
A4 Additional Exhibits — Results: Economic Effects

Table A6: Treatment Effects on Income — Heterogeneity

	Income	Income	Income
Church	0.057	0.057	0.057
	(0.073)	(0.073)	(0.073)
Market	0.200***		
	(0.074)		
Market - Inside		0.140	0.222*
		(0.099)	(0.131)
Market - Outside		0.258***	0.434***
		(0.086)	(0.117)
Market - Inside × Woman			-0.163
			(0.138)
Market - Outside × Woman			-0.350***
			(0.123)
Woman			0.042
			(0.063)
Baseline Outcome	Y	Y	Y
Controls	Y	Y	Y
Observations	1720	1720	1720
R^2	0.149	0.149	0.153
Clusters	300	300	300
Control_Mean	0	0	0
Market_v_Church	.056		
Inside_v_Outside		.28	.18
Inside_v_Church		.4	.2
Outside_v_Church		.021	.0012

Notes: This table summarizes the results from estimating Equation 1 with total monthly household income (standardized) as the outcome. The right-hand side includes dummies for the church and market treatment arms as well as (in column 2) the market sub-treatments (inside and outside), interacted with a dummy for women (in column 3). Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Figure A6: Treatment Effects on Income: CDFs



Notes: This figure shows CDFs of endline log total household monthly income by treatment arm.

Table A7: Treatment Effects on Income — Robustness

	Main	No Baseline Outcome Control	No Other Controls	Log	IHS
Church	0.057	0.045	0.072	0.020	0.017
	(0.073)	(0.081)	(0.073)	(0.090)	(0.092)
Market	0.200***	0.198**	0.199***	0.155*	0.156*
	(0.074)	(0.083)	(0.076)	(0.082)	(0.083)
Stratum FE	Y	Y	Y	Y	Y
Baseline Outcome	Y	N	Y	Y	Y
Controls	Y	Y	N	Y	Y
Observations	1720	1721	1720	1720	1720
Control_Mean	0	0	0	11	11
R2	.15	.053	.14	.11	.11
Market_v_Church	.056	.066	.092	.13	.13

Notes: This table shows robustness checks for the treatment effects on income. It summarizes the results from estimating Equation 1 with total monthly household income (standardized) as the outcome. Column 1 shows the main specification. Column 2 removes the baseline outcome control. Column 3 removes the main control variable set (see Section 5.2). Column 4 for uses a log-transformed outcome. Column 5 uses an IHS-transformed outcome. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A8: Treatment Effects on Labor Time Allocation

	Agriculture	Commerce	Housework	Formal Job
Church	-0.469	-0.149	0.590	-0.198
	(1.093)	(0.417)	(0.629)	(0.279)
Market	-0.343	0.419	-0.840	0.318
	(1.078)	(0.423)	(0.588)	(0.295)
Baseline Outcome Control	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Observations	1727	1727	1727	1727
R^2	0.102	0.149	0.303	0.165
Clusters	300	300	300	300
Control_Mean	26	2.7	13	1.1
Market_v_Church	.9	.13	.022	.081

Notes: This table shows treatment effects on self-reported time (in hours) spent doing agricultural work, commercial work, house work, and formal work. It summarizes the results from estimating Equation 1. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A9: Treatment Effects on Other Economic Outcomes

	Income	Formal Job	House Quality	Assets
Church	0.057	-0.026	0.033	-0.099
	(0.073)	(0.019)	(0.055)	(0.063)
Market	0.200***	0.012	-0.015	-0.023
	(0.074)	(0.020)	(0.054)	(0.064)
Baseline Outcome	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Observations	1720	1727	1800	1800
R^2	0.149	0.109	0.419	0.250
Clusters	300	300	300	300
Control_Mean	0	.15	0	0
Market_v_Church	.056	.043	.36	.18

Notes: This table shows treatment effects on income, formal employment, house quality (measured by enumerators), and an asset index (reported by respondents). It summarizes the results from estimating Equation 1. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A10: Treatment Effects on Market Sales Income

	Main	Market Het.	Gender Het.
Church	-0.027	-0.027	-0.079
	(0.060)	(0.060)	(0.092)
Market	0.156**		
	(0.060)		
Market - Inside		0.118*	-0.001
		(0.071)	(0.107)
Market - Outside		0.192**	0.258*
		(0.079)	(0.135)
Church X Woman			0.102
			(0.087)
Market - Inside X Woman			0.239*
			(0.128)
Market - Outside X Woman			-0.131
			(0.135)
Woman			-0.229***
			(0.060)
Baseline Outcome	Y	Y	Y
Controls	Y	Y	Y
Observations	1727	1727	1727
R^2	0.169	0.169	0.173
Clusters	300	300	300
Control_Mean	0	0	0
Market_v_Church	.0049		
Inside_v_Outside		.41	.081
Inside_v_Church		.053	.48
Outside_v_Church		.008	.015

Notes: This table summarizes the results from estimating Equation 1 with total sales income (standardized) as the outcome. The right-hand side includes dummies for the church and market treatment arms as well as (in column 2) the market sub-treatments (inside and outside), interacted with a dummy for women (in column 3). Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A11: Treatment Effects on City Sales and City Trade Partners

	City Sales	City Sales	City Partner	City Partner
Church	-0.010	-0.010	-0.002	-0.002
	(0.024)	(0.024)	(0.015)	(0.015)
Market	0.037*		0.032**	
	(0.022)		(0.016)	
Market - Inside		0.045*		0.027
		(0.025)		(0.017)
Market - Outside		0.029		0.038
		(0.027)		(0.024)
Controls	Y	Y	Y	Y
Observations	1800	1800	1727	1727
R^2	0.078	0.078	0.038	0.038
Clusters	300	300	300	300
Control_Mean	.13	.13	.049	.049
Market_v_Church	.03		.058	
Inside_v_Outside		.56		.68
Inside_v_Church		.025		.12
Outside_v_Church		.15		.12

Notes: This table summarizes the results from estimating Equation 1 with dummies for reporting selling in the city and having city trade partners as the outcome. The right-hand side includes dummies for the church and market treatment arms as well as the market sub-treatments (inside and outside). Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A12: Treatment Effects on Cash Crop Sales

	Palm Oil Sales	Palm Oil Sales	New Coffee Sales	New Coffee Sales
Church	-0.010	-0.010	-0.004	-0.004
	(0.017)	(0.017)	(0.009)	(0.009)
Market	0.042**		0.035***	
	(0.019)		(0.012)	
Market - Inside		0.037		0.027*
		(0.025)		(0.015)
Market - Outside		0.047**		0.042**
		(0.023)		(0.016)
Controls	Y	Y	Y	Y
Observations	1728	1728	1586	1586
R^2	0.030	0.030	0.040	0.041
Clusters	300	300	300	300
Control_Mean	.082	.082	.019	.019
Market_v_Church	.0062		.0013	
Inside_v_Outside		.72		.45
Inside_v_Church		.06		.035
Outside_v_Church		.014		.0059

Notes: This table summarizes the results from estimating Equation 1 with dummies for selling palm oil or coffee as the outcome. The survey question concerning palm oil asks respondents about sales in a "typical week," whereas the question concerning coffee asks them about new items they started selling in the past six months. The right-hand side includes dummies for the church and market treatment arms as well as the market sub-treatments (inside and outside). Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A13: Spillover Effects on Economic Outcomes

	Income	Market Sales	Any Salary	House Quality	Possessions
Church × Participant	0.069	-0.013	-0.025	0.050	-0.113*
	(0.073)	(0.061)	(0.019)	(0.056)	(0.065)
Church × Network	-0.008	0.005	-0.020	0.046	-0.065
	(0.074)	(0.063)	(0.021)	(0.052)	(0.059)
Church × Non-Network	-0.022	0.012	-0.003	0.043	-0.056
	(0.110)	(0.094)	(0.033)	(0.087)	(0.082)
Market × Participant	0.202***	0.150**	0.014	-0.060	-0.063
	(0.077)	(0.065)	(0.021)	(0.053)	(0.067)
Market × Network	-0.063	-0.001	0.020	0.020	-0.091
	(0.076)	(0.057)	(0.021)	(0.051)	(0.060)
Market × Non-Network	-0.026	0.010	0.037	0.004	-0.016
	(0.120)	(0.090)	(0.035)	(0.087)	(0.082)
Network	0.108	0.026	0.025	0.026	0.074
	(0.067)	(0.051)	(0.018)	(0.040)	(0.052)
Non-Network	0.106	0.001	-0.017	0.031	0.058
	(0.092)	(0.071)	(0.028)	(0.071)	(0.067)
Stratum FE	Y	Y	Y	Y	Y
Baseline Outcome	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y
Observations	3975	3998	3997	4001	4001
Control_Mean	.041	-.011	.17	.13	.099

Notes: This table examines spillover effects of the treatments on network and non-network respondents. We re-estimate Equation 1 but interact the treatment dummies with respondent type (network or non-network). The dependent variables include total monthly household income (standardized), a dummy for any formal employment, an asset index, and house quality. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A14: Spillover Effects on Cash Crop Sales

	Coffee (Conditional)	Coffee (Unconditional)	Palm Oil
Church × Participant	-0.002	-0.003	-0.010
	(0.016)	(0.008)	(0.017)
Church × Network	-0.031	-0.017	0.005
	(0.019)	(0.011)	(0.017)
Church × Non-Network	0.044	0.022	-0.003
	(0.035)	(0.018)	(0.025)
Market × Participant	0.054***	0.035***	0.042**
	(0.020)	(0.012)	(0.020)
Market × Network	-0.043**	-0.022**	0.016
	(0.018)	(0.010)	(0.017)
Market × Non-Network	0.037	0.016	-0.045**
	(0.034)	(0.017)	(0.021)
Network	0.034*	0.018*	-0.003
	(0.019)	(0.010)	(0.017)
Non-Network	0.003	0.002	0.002
	(0.023)	(0.011)	(0.021)
Stratum FE	Y	Y	Y
Controls	Y	Y	Y
Observations	1952	3678	4001
Control_Mean	.053	.027	.078

Notes: This table examines spillover effects of the market treatment on cash crop sales among network and non-network respondents. We re-estimate Equation 1 but interact the treatment dummies with respondent type (network or non-network). The dependent variables are dummies for selling palm oil and coffee, the two most profitable cash crops sold by market participants. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

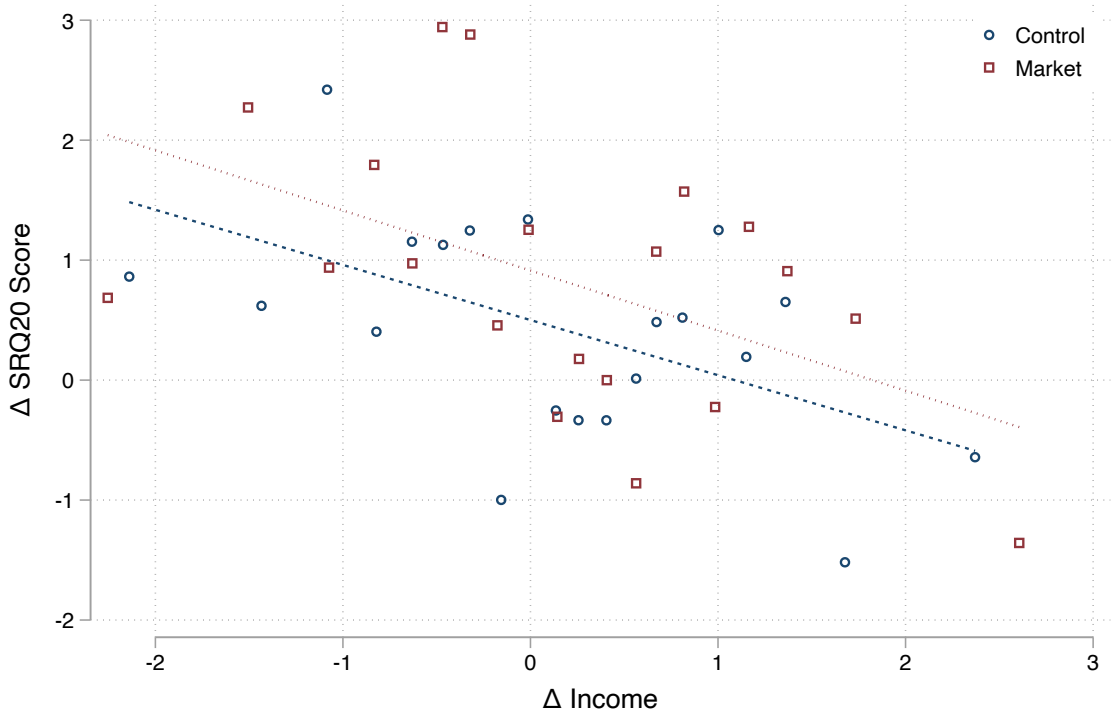
Table A15: Spillover Effects on Baseline Cash Crop Sellers: Income

	Outcome: Income (Standardized)	
	Coffee	Palmoil
Church × Participant	0.058	0.067
	(0.074)	(0.073)
Church × Network	-0.010	-0.008
	(0.074)	(0.075)
Church × Non-Network	-0.010	-0.022
	(0.110)	(0.109)
Market × Participant	0.190**	0.207***
	(0.077)	(0.078)
Market × Participant × Baseline Seller	-0.038	-0.053
	(0.355)	(0.170)
Market × Network	-0.041	-0.053
	(0.075)	(0.078)
Market × Network × Baseline Seller	-0.819**	-0.127
	(0.358)	(0.165)
Market × Non-Network	-0.056	-0.018
	(0.115)	(0.123)
Market × Non-Network × Baseline Seller	0.952	-0.234
	(0.754)	(0.215)
Friend	0.103	0.107
	(0.067)	(0.067)
Non-Friend	0.088	0.105
	(0.093)	(0.092)
Baseline Seller	0.509***	-0.015
	(0.172)	(0.074)
Stratum FE	Y	Y
Baseline Outcome	Y	Y
Controls	Y	Y
Observations	3974	3974
Control_Mean	.042	.042

Notes: This table examines the income of network respondents who were selling cash crops at baseline. The dependent variable is total monthly household income (standardized). We interact the treatment dummies with a dummy for whether the network respondent reported selling palm oil or coffee at baseline. A negative coefficient on the interaction term for the market arm is consistent with business-stealing: market participants capture sales from pre-existing cash crop sellers in their networks. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

A5 Additional Exhibits — Results: Subjective Well-being

Figure A7: Income Changes and Wellbeing in Market and Control



Notes: This figure shows the correlation of changes in household income from baseline to endline and changes in the SRQ-20 score from baseline to endline — for respondents in the market treatment and control.

Table A16: Treatment Effects on Ease and Satisfaction from Work

	Farming Ease	Commerce Ease	Farming Satisfaction	Commerce Satisfaction
Church	-0.043	0.010	0.010	-0.032
	(0.075)	(0.073)	(0.060)	(0.069)
Market	-0.055	0.209***	0.049	0.237***
	(0.075)	(0.067)	(0.067)	(0.070)
Stratum FE	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Observations	1377	1377	1376	1377
R^2	0.035	0.050	0.023	0.056
Clusters	243	243	243	243
Control_Mean	0	0	0	0

Notes: This table summarizes the results from estimating Equation 1 with self-reported ease and satisfaction of farming and commercial work as the outcome. The right-hand side includes dummies for the church and market treatment arms as well as the market sub-treatments (inside and outside). Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Figure A8: Income Volatility at Market and Wellbeing



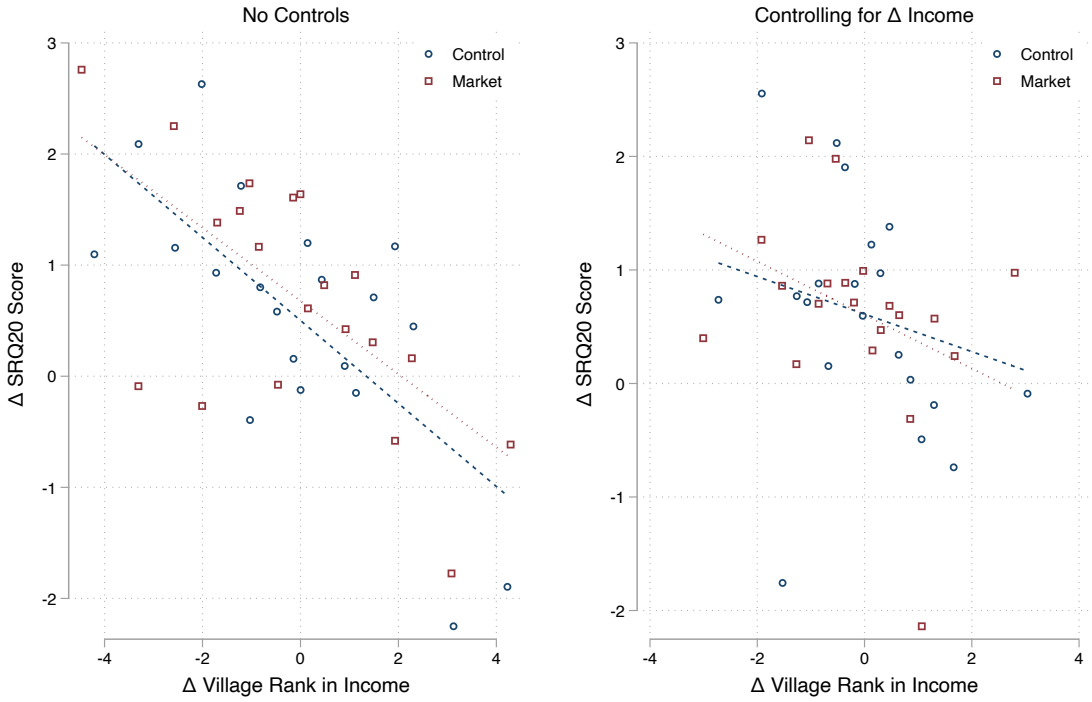
Notes: This figure shows the correlation of within-participant income variance at the market and changes in the SRQ-20 score from baseline to endline. Market income variance is estimated using CHH program data and is thus available only for market participants.

Table A17: Within-Village Income Inequality and Wellbeing

	All Treatments		Market Arm Only	
	Income Variance	Increase in Income Variance (1-0)	Δ SRQ20	Δ SRQ20
Church	0.102	0.008		
	(0.073)	(0.066)		
Market	0.262***	0.184***		
	(0.071)	(0.064)		
Δ Income Variance			0.091	
			(0.150)	
Increase in Income Variance (1-0)				1.184**
				(0.571)
Baseline Outcome	Y	N	N	N
Controls	Y	Y	Y	Y
Observations	1727	1727	588	588
Control_Mean	.71	.47	.68	.68
Market_v_Church	.044	.0095		

Notes: This table examines the relationship between within-village income inequality among main respondents at endline and wellbeing. The first column summarizes the results from estimating Equation 1 with the difference between income variance from baseline to endline as the outcome. The second column instead considers a dummy indicating an increase in income variance (among main respondents). The right-hand side includes dummies for the church and market treatment arms. The next two columns consider only the market arm and examine the correlation between within-village income variance changes and changes in the SRQ-20 score as the outcome. Controls are summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Figure A9: Δ Income Rank in Village and Δ Wellbeing



Notes: This figure shows the correlation between changes in within-village income rank (among main respondents) and changes in the SRQ-20 score from baseline to endline. The left panel shows the unconditional relationship, and the right panel shows the relationship controlling for changes in income to isolate changes in relative income rank vis-a-vis others.

Table A18: Spillovers: Heterogeneity by Respondent Type

	Income	Depression	Money to be Happy
Church × Participant	0.069	0.045	0.064
	(0.073)	(0.030)	(0.061)
Church × Friend	-0.008	0.026	-0.052
	(0.074)	(0.029)	(0.068)
Church × Non-Friend	-0.022	0.025	-0.058
	(0.110)	(0.045)	(0.108)
Market × Participant	0.202***	0.056**	0.152**
	(0.077)	(0.028)	(0.061)
Market × Friend	-0.063	0.062**	0.003
	(0.076)	(0.028)	(0.081)
Market × Non-Friend	-0.026	-0.051	-0.026
	(0.120)	(0.047)	(0.111)
Friend	0.108	-0.002	0.088
	(0.067)	(0.028)	(0.058)
Non-Friend	0.106	0.029	0.057
	(0.092)	(0.038)	(0.097)
Baseline Outcome	Y	Y	N
Controls	Y	Y	Y
Observations	3975	3998	3976
Control_Mean	0	.48	0

Notes: This table examines spillover effects of the treatments on network and non-network respondents. We re-estimate Equation 1 but include interactions with the respondent type. The dependent variable is monthly household income (standardized) (Column 1), a depression dummy (Column 2), and the amount of money for happiness (standardized) (Column 3). Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A19: Heterogeneity by Affluence of Church Network

	SRQ20	SRQ20	SRQ20	SRQ20
Church	0.351	0.412	0.376	0.375
	(0.322)	(0.427)	(0.367)	(0.391)
Market	0.366	0.367	0.366	0.366
	(0.318)	(0.319)	(0.318)	(0.318)
Church × Wealth ≥ p50		-0.102		
		(0.457)		
Church × Edu ≥ p50			-0.048	
			(0.443)	
Church × Income ≥ p50				-0.051
				(0.469)
Baseline Outcome	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Observations	1727	1727	1727	1727
Control_Mean	10	10	10	10
Market_v_Church	.96	.91	.98	.98

Notes: This table examines heterogeneous effects of the church treatment based on the affluence of the urban congregation. The first column reproduces the main treatment effect by estimating Equation 1 with the SRQ-20 score as the outcome. The next three columns study heterogeneous effects of the church treatment by the wealth, education, and income of the urban church congregants. For each variable, we interact the church treatment with a dummy for whether the congregation is above the median in wealth, education, or income. We do not observe these variables for the market or control group, so this is equivalent to partitioning the church treatment into two groups. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A20: Income Changes After Market Program and Wellbeing

	Endline Income		SRQ20		
Average Market Earnings	0.145**	-0.358			
	(0.068)	(0.290)			
Percent Earnings Change (BL to Mkt.)			-0.610***		
			(0.215)		
Percent Earnings Change (Mkt. to EL)				-0.072	
				(0.196)	
Lower Weekly Earnings (Mkt. to EL)					0.238
					(0.505)
Baseline Outcome	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y
Observations	527	527	527	527	527
Dep_Var_Mean	0.04	11	11	11	11

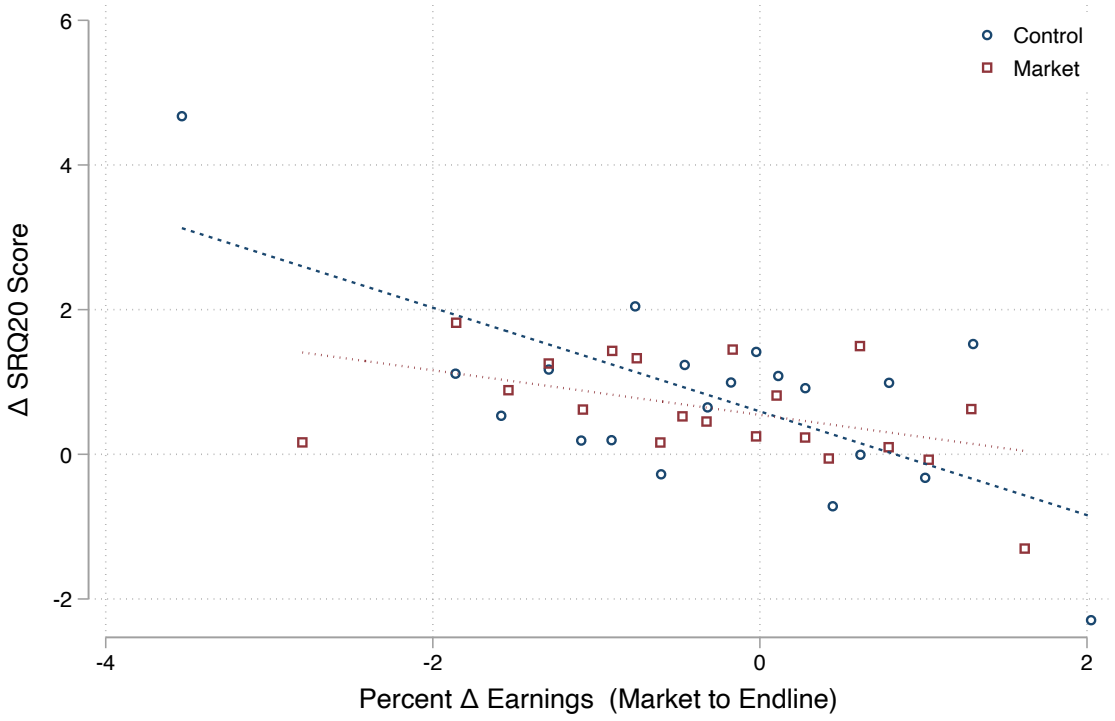
Notes: This table examines whether a potential "lost fortune" mechanism could explain the negative impact of market access on wellbeing. Columns 1 and 2 show the correlation between market earnings (during the program) and endline income and endline subjective wellbeing, respectively. Column 3 shows the correlation between income changes from baseline to the market program and subjective wellbeing at endline. Column 4 shows the correlation between the change in income from the program period to endline and wellbeing. Column 5 examines the same relationship using a dummy for individuals for whom weekly income decreased in this period. All of these analyses are limited to the market arm. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A21: Within-Village Income Inequality and Money to be Happy

	Money to be Happy	Money to be Happy
Δ Income Variance	0.045*	
	(0.027)	
Increase in Income Variance (1-0)		0.128
		(0.098)
Controls	Y	Y
Observations	587	587
Control_Mean	.69	.69

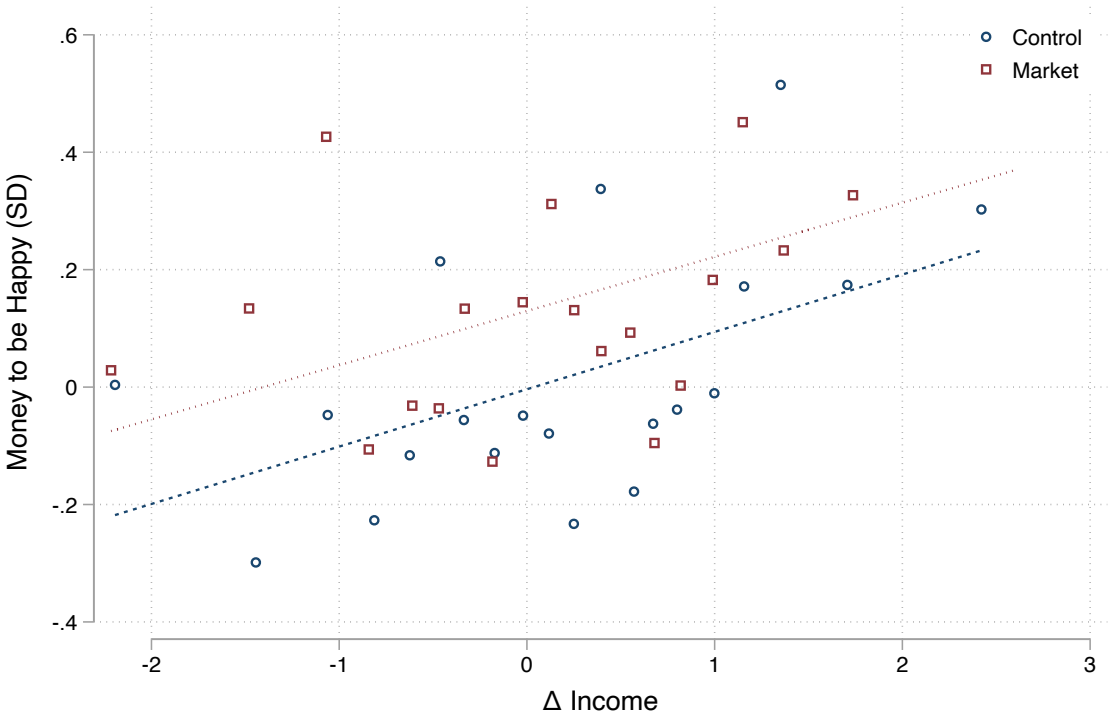
Notes: This table examines the relationship between within-village income inequality among main respondents at endline and the money they say they need to be happy. The independent variable in the first row is the change in income variance from baseline to endline; in the second row, it is a dummy indicating that income variance increased from baseline to endline. The sample is the market arm only. Controls are summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Figure A10: Income Changes After the Market Program and Wellbeing



Notes: This figure shows the correlation between changes in income (from the market period to endline) and changes in subjective wellbeing. We estimate the same relationship for the control group by using the baseline income instead of the market program income.

Figure A11: Income Changes and Money to be Happy



Notes: This figure shows the correlation changes in income from baseline to endline and the money needed to be happy at endline (this variable was not included at baseline) — separately for the market treatment and control.

Table A22: Treatment Effects on Wellbeing: Heterogeneity by Time Gap between Program and Endline

	SRQ >10	SRQ >10	SRQ Total	SRQ Total
Church	0.046	0.025	0.351	0.169
	(0.030)	(0.044)	(0.322)	(0.470)
Market	0.056**	0.037	0.366	0.149
	(0.028)	(0.039)	(0.318)	(0.459)
Above Median Time Gap		-0.067		-0.831
		(0.062)		(0.653)
Church × Above Median Time Gap		0.044		0.417
		(0.063)		(0.658)
Market × Above Median Time Gap		0.042		0.478
		(0.057)		(0.650)
Stratum FE	Y	Y	Y	Y
Baseline Outcome	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Observations	1727	1727	1727	1727
Control_Mean	.48	.48	10	10
R2	.16	.16	.26	.26
Market_v_Church	.71	.79	.96	.97

Notes: This table examines whether the treatment effects on subjective wellbeing vary with the length of time between the end of the City Access Program and the endline survey. We re-estimate Equation 1 interacting the treatment dummies with a dummy for whether the time gap between the end of the program and the endline survey is above the median (approximately 9 months). The dependent variable is the SRQ-20 score (higher values indicate worse wellbeing) in Panel A, and a dummy for SRQ-20 score over 10 in Panel B. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

A6 Additional Exhibits — Results: Core Values

Table A23: Treatment Effects on the Meaning of the Good Life

	Family	Health	Equality	Education	Religion	Income	Tradition
Church	-0.076	0.020	-0.121	0.064	0.054	0.059	-0.003
	(0.084)	(0.083)	(0.088)	(0.066)	(0.089)	(0.144)	(0.038)
Market	-0.008	0.031	-0.052	0.132**	-0.358***	0.179	0.076**
	(0.085)	(0.082)	(0.081)	(0.061)	(0.081)	(0.140)	(0.039)
Stratum FE	Y	Y	Y	Y	Y	Y	Y
Baseline Outcome	Y	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y	Y
Observations	1724	1724	1724	1724	1724	1724	1724
R^2	0.053	0.066	0.050	0.071	0.069	0.105	0.064
Clusters	300	300	300	300	300	300	300
Control_Mean	2	1.3	1.7	.94	2.3	1.6	.2
Market_v_Church	.41	.89	.41	.3	6.5e-07	.35	.049

Notes: This table summarizes the results from estimating Equation 1 with the number of buttons allocated to each of the possible components of the good life as the outcome. The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A24: Treatment Effects on the Meaning of the Good Person

	Independence	Dilligence	Thrift	Selfcontrol	Tolerance	Generosity	Productivity	Religion
Church	0.014	0.023	-0.015	0.011	0.284***	-0.037	0.054	-0.142
	(0.149)	(0.088)	(0.071)	(0.077)	(0.082)	(0.083)	(0.076)	(0.131)
Market	-0.027	0.128	0.218***	-0.093	0.048	-0.081	0.239***	-0.437***
	(0.140)	(0.081)	(0.066)	(0.074)	(0.083)	(0.083)	(0.072)	(0.121)
Stratum FE	Y	Y	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1721	1721	1721	1716	1721	1721	1721	1721
R^2	0.068	0.027	0.038	0.038	0.032	0.041	0.034	0.052
Clusters	300	300	300	300	300	300	300	300
ControlMean	1.7	1.3	1	.98	1.4	1.5	.96	2.4
Ftest	.76	.24	.00082	.15	.0025	.59	.016	.0077

Notes: This table summarizes the results from estimating Equation 1 with the number of buttons allocated to each of the eight most popular qualities of the good person as the outcome (the remaining four are not shown for legibility). The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A25: Treatment Effects on Child Values

	Independence	Diligence	Tolerance	Thrift	Religion	Generosity	Obedience	Self Control
Church	-0.008	0.117	0.143	0.061	-0.027	0.059	-0.212*	0.082
	(0.118)	(0.074)	(0.117)	(0.078)	(0.121)	(0.082)	(0.109)	(0.133)
Market	0.154	0.031	-0.004	0.121	-0.338***	0.164*	-0.076	0.077
	(0.110)	(0.071)	(0.113)	(0.084)	(0.107)	(0.088)	(0.111)	(0.120)
Stratum FE	Y	Y	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1727	1727	1727	1727	1727	1727	1727	1727
R^2	0.082	0.069	0.035	0.064	0.037	0.052	0.039	0.042
Clusters	300	300	300	300	300	300	300	300
Control_Mean	1.3	.53	1.4	.74	3.1	.9	1.8	2.3
Market_v_Church	.14	.29	.18	.49	.0089	.23	.22	.97

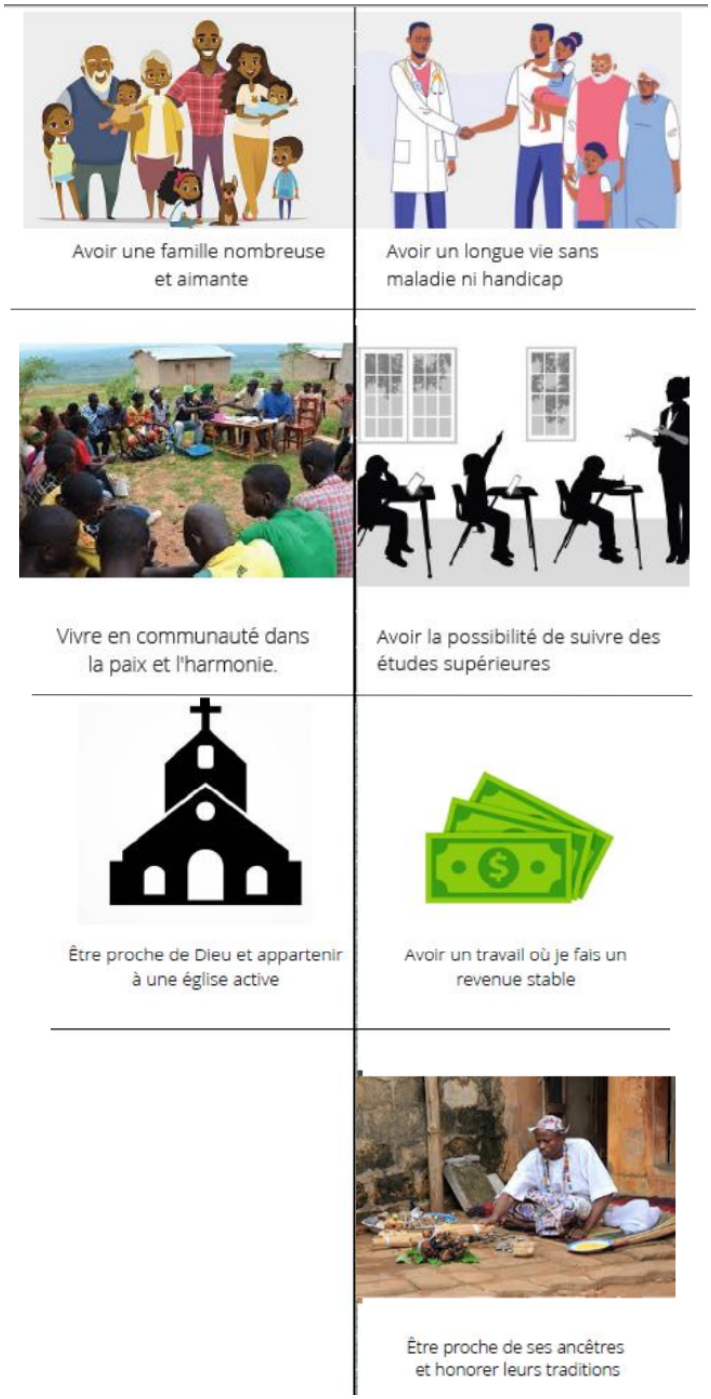
Notes: This table summarizes the results from estimating Equation 1 with the rank of the eight most popular values that children should be encouraged to learn at home as the outcome (the remaining four are not shown for legibility). The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A26: Treatment Effects on Religious Participation

	Attend services	Other church activities	Pray privately	Discuss religion at home	Listen to religious radio	Index
Church	-0.041	-0.009	-0.008	0.239***	0.066	0.063
	(0.046)	(0.127)	(0.048)	(0.088)	(0.102)	(0.062)
Market	0.030	-0.214	-0.087*	0.065	0.045	-0.031
	(0.041)	(0.136)	(0.046)	(0.087)	(0.097)	(0.061)
Stratum FE	Y	Y	Y	Y	Y	Y
Baseline Outcome	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y
Observations	1625	1623	1625	1623	1625	1621
R^2	0.093	0.099	0.050	0.089	0.132	0.144
Clusters	300	300	300	300	300	300
ControlMean	4.6	3.7	5.3	2.6	3	.0035
Ftest	.096	.13	.12	.055	.85	.15

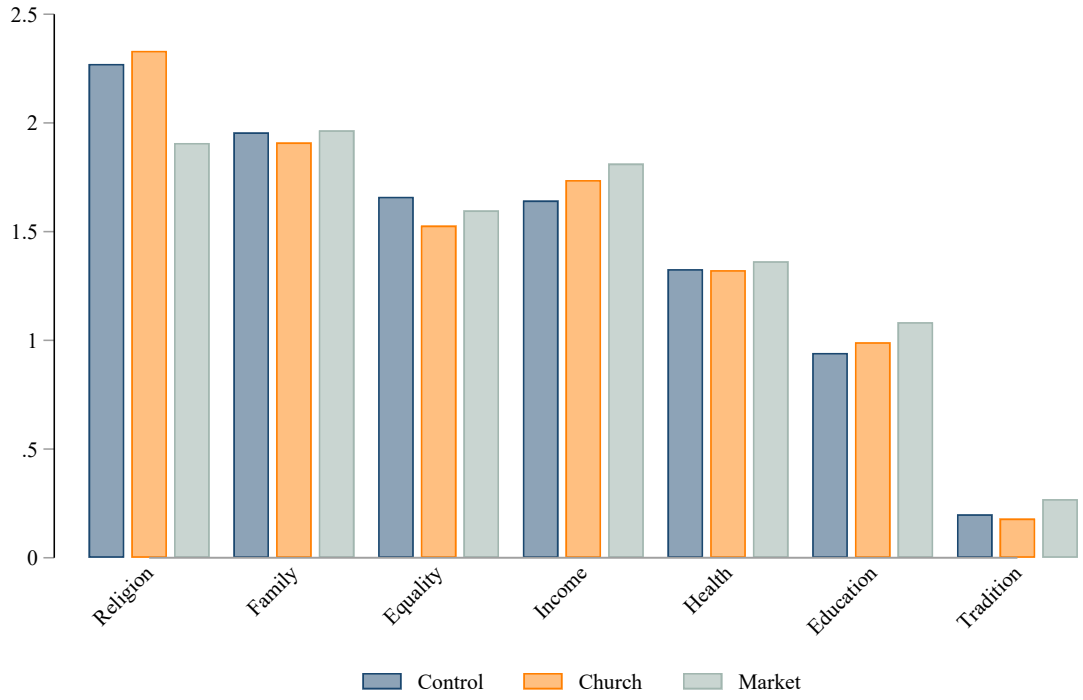
Notes: This table summarizes the results from estimating Equation 1 with questions about religious participation from the Springfield Religiosity Scale (Koenig et al., 1988) as the outcome. The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Figure A12: Good Life Decision Board



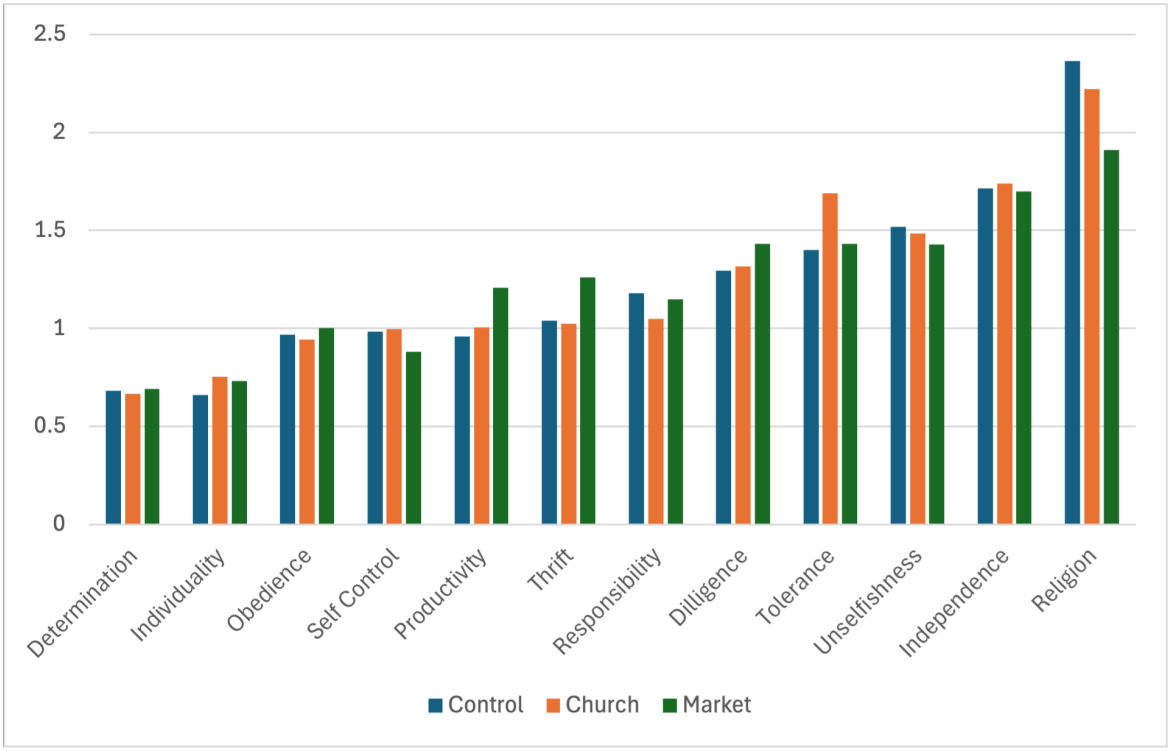
Notes: This figure shows a visual aid used by enumerators to elicit respondents' views of the components of a good life. Respondents were instructed to allocate ten buttons as they wish on the categories of the visual aid.

Figure A13: Good Life: Endline Allocation



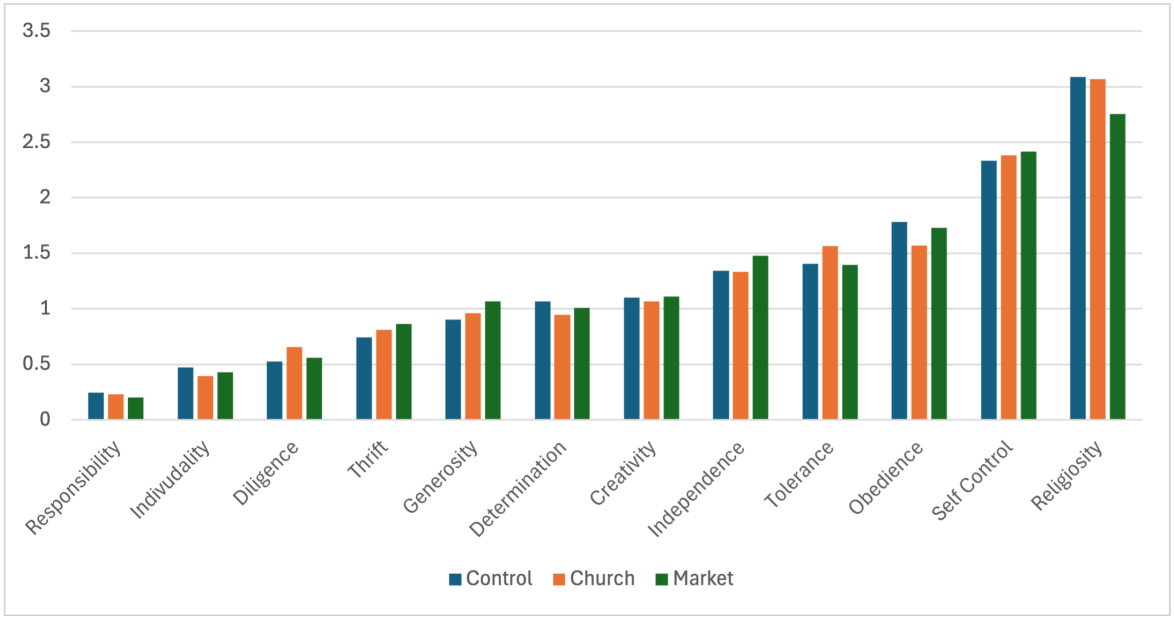
Notes: This figure shows the raw allocation of buttons across the categories for the prompt "I would like to ask you questions about what a 'good life' means for you. Please consider what you think the good life means in all domains of life: material, familial, emotional, spiritual. In your opinion, which factors are most important for living a good life?" Respondents had ten buttons to allocate however they chose.

Figure A14: Good Person: Endline Allocation



Notes: This figure shows the raw allocation of buttons across the categories for the prompt "I would like to ask you questions about what a 'good person' means for you. Please consider what qualities are the most important to have in life. In your opinion, which factors are most important for being a good person." Respondents had ten buttons to allocate however they chose.

Figure A15: Child Values: Endline Allocation



Notes: This figure shows the raw ranking of values in response to the prompt. "Here is a list of **qualities that children can be encouraged to learn at home**. Please first pick the five that are most important in your opinion. Then, please rank them in the order of importance."

Table A27: Treatment Effects on Religious Participation — Heterogeneity by Sex

	Attend services	Other church activities	Pray privately	Discuss religion at home	Listen to religious radio	Index
Panel A: Men						
Church	-0.051	-0.244	0.036	0.177	0.106	0.011
	(0.068)	(0.164)	(0.071)	(0.127)	(0.134)	(0.087)
Market	0.011	-0.342**	0.014	0.054	0.017	-0.045
	(0.060)	(0.167)	(0.069)	(0.126)	(0.127)	(0.080)
Observations	782	781	782	782	782	781
R^2	0.110	0.114	0.049	0.084	0.111	0.139
Clusters	300	300	300	300	300	300
ControlMean	4.6	3.8	5.3	2.9	3.5	.21
Ftest	.28	.57	.75	.34	.53	.52
Panel B: Women						
Church	-0.031	0.228	-0.041	0.299**	0.016	0.117
	(0.056)	(0.160)	(0.063)	(0.120)	(0.139)	(0.079)
Market	0.041	-0.098	-0.176***	0.082	0.059	-0.017
	(0.048)	(0.174)	(0.064)	(0.110)	(0.138)	(0.079)
Observations	843	842	843	841	843	840
R^2	0.111	0.123	0.095	0.095	0.089	0.138
Clusters	300	300	300	300	300	300
ControlMean	4.6	3.5	5.3	2.4	2.6	-.18
Ftest	.22	.052	.056	.08	.77	.11
Stratum FE	Y	Y	Y	Y	Y	Y
Baseline Outcome	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y

Notes: This table summarizes the results from estimating Equation 1 with questions about religious participation from the Springfield Religiosity Scale (Koenig et al., 1988) as the outcome. The first panel shows results for men, and the second panel shows results for women. The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A28: Treatment Effects on Intrinsic Religiosity

	Serving God	God's Presence	God's Guidance	Index
Church	0.104	0.010	-0.005	0.031
	(0.069)	(0.073)	(0.079)	(0.074)
Market	-0.053	-0.016	0.027	0.009
	(0.074)	(0.075)	(0.073)	(0.070)
Stratum FE	Y	Y	Y	Y
Baseline Outcome	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Observations	1619	1251	1621	1242
R^2	0.037	0.034	0.042	0.055
Clusters	300	297	300	297
ControlMean	2.8	2.1	2.6	-.031
Ftest	.025	.71	.68	.75

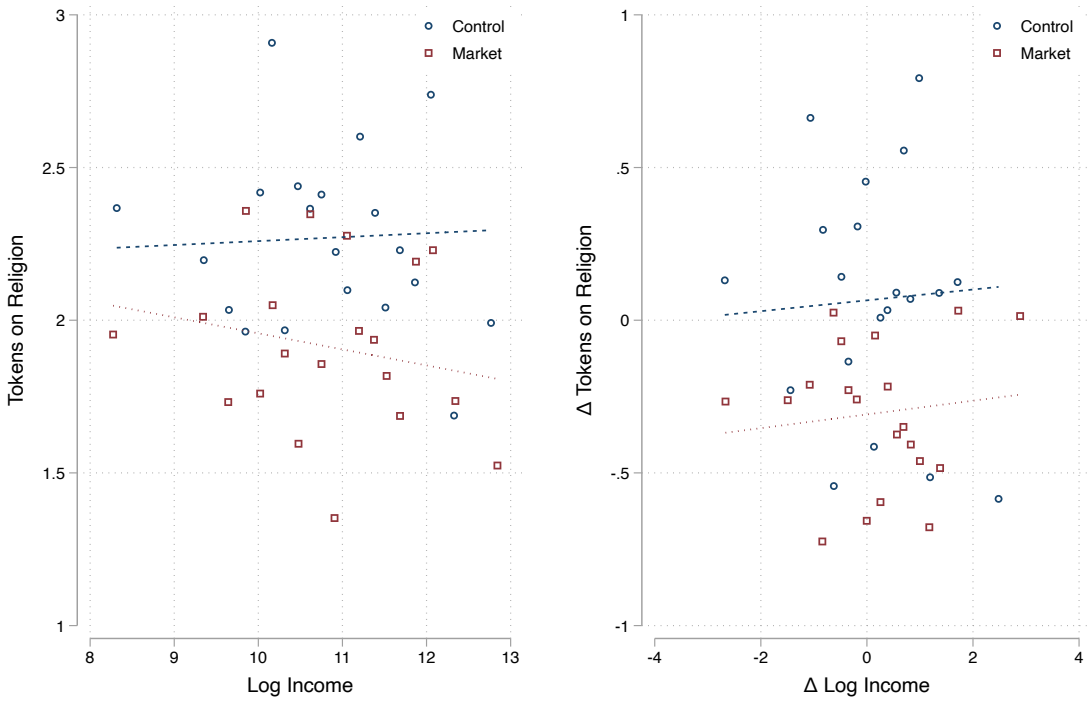
Notes: This table summarizes the results from estimating Equation 1 with questions about intrinsic religiosity from Allport and Ross (1967) as the outcome. The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A29: Treatment Effects on Extrinsic Religiosity

	Comfort	Relief and protection	Community	Make friends	Index
Church	-0.018	0.007	-0.082	0.155*	0.053
	(0.053)	(0.050)	(0.084)	(0.085)	(0.066)
Market	0.069	0.008	0.110	0.173*	0.124*
	(0.055)	(0.054)	(0.085)	(0.089)	(0.067)
Stratum FE	Y	Y	Y	Y	Y
Baseline Outcome	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y
Observations	1625	1625	1625	1621	1621
R^2	0.055	0.045	0.105	0.114	0.144
Clusters	300	300	300	300	300
ControlMean	1.3	1.3	.39	-.75	.0035
Ftest	.11	.98	.02	.83	.28

Notes: This table summarizes the results from estimating Equation 1 with questions about extrinsic religiosity from Allport and Ross (1967) as the outcome. The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Figure A16: Religious Values and Income



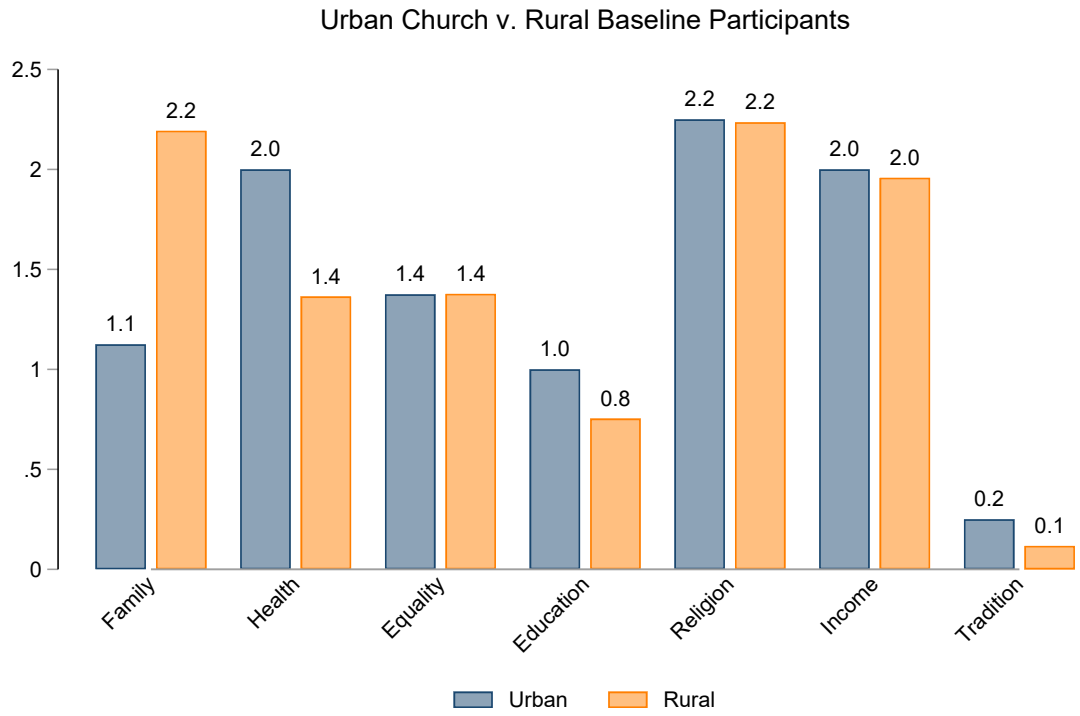
Notes: This figure shows the relationship between the relative importance of religion and total monthly household log income at endline. The left panel is in endline levels, while the right panel is in changes (from baseline to endline).

Table A30: Treatment Effects on Expected Altruism (CYDG)

	Nuc. Fam	Ext. Fam	Christian	Own Tribe	Other Tribe	Own Denom.	Other Denom.	Own Church
Church	0.215	0.007	-0.024	0.096	0.093	-0.336*	0.001	0.286
	(0.190)	(0.186)	(0.182)	(0.151)	(0.138)	(0.188)	(0.160)	(0.287)
Market	0.333*	0.190	-0.351*	-0.108	0.184	-0.197	-0.138	-0.090
	(0.191)	(0.182)	(0.186)	(0.145)	(0.155)	(0.184)	(0.148)	(0.289)
Stratum FE	Y	Y	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1728	1728	1728	1728	1728	1728	1728	1728
R^2	0.073	0.057	0.035	0.044	0.033	0.053	0.081	0.072
Clusters	300	300	300	300	300	300	300	300
ControlMean	8.7	7.6	7.6	5	3.7	5.6	3.7	6.6
Ftest	.51	.32	.086	.13	.53	.4	.35	.15

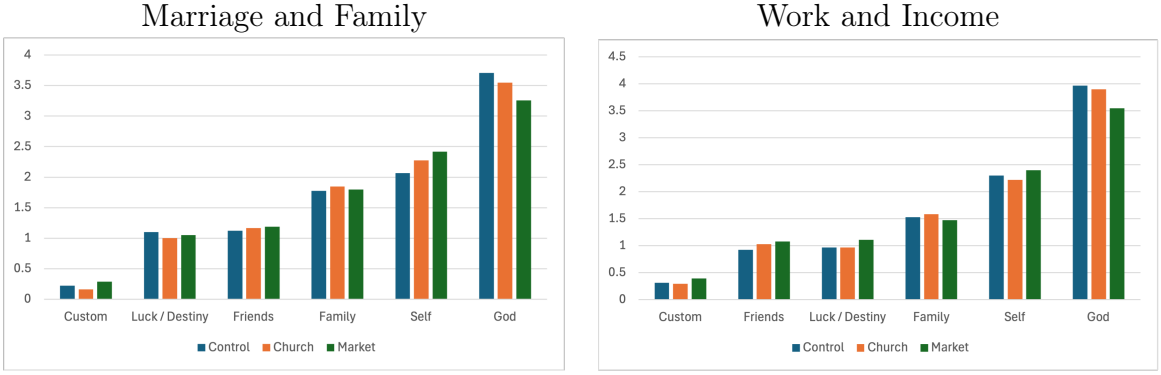
Notes: This table summarizes the results from estimating Equation 1 with the results from the choose your dictator game (CYDG) as the outcome. The outcome variable is the average ranking of the indicated other party among the list of 12 possible: nuclear family member, extended family member, person in Kananga, person in village, Christian, non-Christian, member of own tribe, member of other tribe, member of own denomination, member of other denomination, member of own church, and person who does not go to any church. The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Figure A17: Good Life Values: Baseline Participants vs. Urban Market Vendors



Notes: This figure compares the distribution of button allocations in the good life exercise between our baseline survey respondents and a sample of buyers and sellers in the Kananga markets. Respondents in both samples allocated ten buttons across the same set of categories. The comparison is used to assess the socialization mechanism for the secularizing effect of market access: if urban vendors hold less religious and more bourgeois values than villagers, interactions with them could explain the observed value shifts. The urban vendor sample was collected by enumerators at the Kananga markets during the study period.

Figure A18: Forces Influencing Private Life and Work



Notes: This figure shows the distribution of allocations indicating respondents' views on the forces that influence one's life. The left-hand panel shows results concerning the "happiness and harmony you experience in your marriage and in your family," and the right-hand panel shows results concerning forces that shape "the choice of work and amount of income that you have today."

Table A31: Treatment Effects on Church-Based ROSCA Participation

	Any ROSCA	ROSCA Freq.	Nb. ROSCAs	Members - City	Members - Family	Members - Church
Church	-0.046	1.293	0.076	-0.734*	-0.018	0.184
	(0.031)	(1.916)	(0.138)	(0.385)	(0.285)	(0.526)
Market	0.037	-1.902	0.058	-0.447	-0.070	-0.811
	(0.030)	(1.797)	(0.152)	(0.416)	(0.278)	(0.495)
Stratum FE	Y	Y	Y	Y	Y	Y
Baseline Outcome	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y
Observations	1727	367	366	367	367	367
R^2	0.170	0.159	0.246	0.181	0.160	0.247
Clusters	300	193	193	193	193	193
Control_Mean	.38	22	-.0034	1.5	1.8	4.2
Market_v_Church	.0047	.083	.88	.49	.84	.036

Notes: This table summarizes the results from estimating Equation 1 with participation in church-based rotating savings and credit associations (ROSCAs) as the outcome. The dependent variables include a dummy for any ROSCA participation, the number of ROSCAs the respondent belongs to, and a dummy for belonging to a ROSCA organized through a church. These outcomes are used to test the insurance mechanism for the secularizing effect of market access: if markets provide an alternative source of financial insurance, demand for church-based ROSCAs may decline. The right-hand side includes dummies for the church and market treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

Table A32: Treatment Effects on the Meaning of the Good Life: Inside v. Outside Market

	Family	Health	Equality	Education	Religion	Income	Tradition
Church	-0.075	0.020	-0.121	0.064	0.054	0.059	-0.003
	(0.084)	(0.083)	(0.088)	(0.066)	(0.089)	(0.144)	(0.038)
Market - Inside	-0.027	-0.003	-0.028	0.104	-0.353***	0.250	0.053
	(0.104)	(0.100)	(0.102)	(0.077)	(0.100)	(0.175)	(0.046)
Market - Outside	0.012	0.065	-0.076	0.158**	-0.362***	0.109	0.098**
	(0.105)	(0.098)	(0.093)	(0.073)	(0.093)	(0.161)	(0.050)
Baseline Outcome	Y	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y	Y
Observations	1724	1724	1724	1724	1724	1724	1724
R^2	0.053	0.066	0.050	0.071	0.069	0.106	0.065
Clusters	300	300	300	300	300	300	300
Control_Mean	2	1.3	1.7	.94	2.3	1.6	.2
Inside_v_Outside	.74	.54	.66	.54	.93	.45	.44
Inside_v_Church	.64	.82	.37	.61	.000072	.24	.25
Outside_v_Church	.4	.65	.64	.22	8.8e-06	.74	.045

Notes: This table summarizes the results from estimating Equation 1 with the number of buttons allocated to each of the possible components of the good life as the outcome, separately by market sub-treatment. Columns 1–2 show results for the inside market (*grand marchÃl*) and outside market (*Nkashama*), respectively, each relative to the pure control. Column 3 reports the p-value for the difference between the two market sub-treatments. The absence of a significant difference between inside and outside market effects on the religion category is used to assess the socialization mechanism: inside market participants interacted with more urban customers (Table A5), so a socialization channel would predict a larger decline in religious values in the inside arm. The right-hand side includes dummies for the church and market sub-treatment arms. Controls include the baseline outcome and other baseline variables summarized in Section 5.2. SEs are clustered at the village level.

A7 Additional Exhibits — Heterogeneity by crop profitability

Across the villages involved in the experiment, climatic conditions vary, leading to differences in how suitable each area is for growing crops that can be sold in Kananga. This creates natural variation in crop suitability. We can exploit this variation to examine whether villages located in areas better suited to higher-value crops, experience stronger treatment effects.

A7.1 Identification of profitable crops

A potential concern is that participants may have shifted toward more profitable crops during the experiment as part of a learning process. To address this, we measure heterogeneity using crops reported as sold at baseline, prior to the intervention, treating these as exogenous. Given the possibility of exchange among villagers, we identify profitable crops at the village level using the full sample of respondents (both main participants and their networks). For each village, we compute the share of crops reported at baseline. The distribution is given in table A33.

Table A33: Distribution of shares

	Mean	Median	SD	Min	Q1	Q3	Max
Amarantes	0.072	0	0.130	0	0	0.107	1
Fruit/vegetables	0.083	0.051	0.116	0	0	0.118	0.833
Peanuts	0.019	0	0.037	0	0	0.027	0.200
Miscellaneous	0.022	0	0.054	0	0	0.024	0.500
Processed food	0.006	0	0.020	0	0	0	0.167
Coffee	0.024	0	0.043	0	0	0.037	0.200
Charcoal	0.108	0.058	0.130	0	0	0.176	0.714
Meet/animal	0.007	0	0.027	0	0	0	0.200
Cigarettes	0.015	0	0.038	0	0	0	0.250
Cassava Leaves	0.056	0	0.102	0	0	0.075	0.500
Salted fish	0.029	0	0.052	0	0	0.051	0.333
Cassava fruits	0.028	0	0.078	0	0	0	0.500
Starches	0.032	0	0.054	0	0	0.060	0.444
Oil	0.093	0.081	0.103	0	0	0.143	1
Maize	0.129	0.111	0.131	0	0	0.200	0.667
Cassava root	0.188	0.184	0.148	0	0.073	0.278	1
Palm nuts	0.023	0	0.055	0	0	0	0.353
Soap	0.020	0	0.049	0	0	0	0.500
Sugar	0.026	0	0.045	0	0	0.047	0.200
Tshitshampa	0.020	0	0.049	0	0	0	0.389

Notes: This table summarizes the distribution of crop shares across villages. For a given village, the share of a crop is defined as the number of times that crop is mentioned divided by the total number of crops reported, using the full sample of participants.

We then group crops based on whether they are associated with lower, higher, or insignificantly different income shocks, conditional on having access to the market, estimated using the following OLS equation:

$$\begin{aligned} Y_{ihvs} = \beta_0 + \beta_1 \mathbb{1}_{vs}^{Church} + \beta_2 \mathbb{1}_{vs}^{Market} + \sum_c \gamma_{1c} \mathbb{1}_{vs}^{Church} . \mathbb{1}_{vs}^{Crop\ c} \\ + \sum_c \gamma_{2c} \mathbb{1}_{vs}^{Market} . \mathbb{1}_{vs}^{Crop\ c} + \sum_c \gamma_c \mathbb{1}_{vs}^{Crop\ c} + \alpha_s + \boldsymbol{X}_{ihvs} \boldsymbol{\Gamma} + \epsilon_{ihvs} \end{aligned} \tag{2}$$

where i indexes individuals, h households, v villages, and s randomization strata. The dependent variable is income at endline, Y_{ihvs}. The α_s are stratum FE (20 in total — a function of geographic region and village size). $\boldsymbol{X}_{ihvs}$ includes individual-level baseline covariates. Specifically, we control for income at baseline. To improve preci-

sion, we additionally include age, age squared, sex, house quality, years of education, nights hungry in the past month, a dummy for majority ethnicity, a dummy for being born in the village, a dummy for having lived in the city, and a dummy for being an evangelical Christian. We cluster standard errors at the village level (300 total). Crop dummies equal one when a village specializes in a given crop more than average, i.e., when its share for that crop exceeds the cross-village average share.[31]

We aggregate crops into three groups, which we refer to throughout the rest of this section as:

- *Positive* crop group: crops associated with above-average income in the market arm (Soap, Cassava Fruit, Palm Oil, Amaranth, Maize, Meat/Animal);
- *Negative* crop group: crops associated with below-average income in the market arm (Peanuts, Palm Nuts, Sugar, Miscellaneous, Starches);
- *Insignificant* crop group: crops not associated with an income effect significantly different from the average for the market arm.

A7.2 Income prediction

As the treatment itself may have induced participants to shift toward more profitable crops, endline income may be endogenous to crop specialization. To address this, we construct a predicted income measure by projecting endline income onto baseline crop specialization, isolating the component of income attributable to pre-existing, exogenous differences in crop suitability across villages. We then replicate our main results using this predicted measure as the outcome. To capture seasonal variation in crop-income relationships, we interact our crop dummies with season-at-endline indicators, based on the OLS equation below. Results are given in table A34.

$$\begin{aligned} Y_{ihvs} = \beta_0 + \beta_1 \mathbb{1}_{vs}^{Church} + \beta_2 \mathbb{1}_{vs}^{Market} + \sum_c \sum_t \gamma_{1ct} \mathbb{1}_{vs}^{Church} . \mathbb{1}_{vs}^{Crop\ c} . \mathbb{1}_{ihvs}^{Season\ t} \\ + \sum_c \sum_t \gamma_{2ct} \mathbb{1}_{vs}^{Market} . \mathbb{1}_{vs}^{Crop\ c} . \mathbb{1}_{ihvs}^{Season\ t} + \sum_c \sum_t \gamma_{ct} \mathbb{1}_{vs}^{Crop\ c} . \mathbb{1}_{ihvs}^{Season\ t} \\ + \alpha_s + \boldsymbol{X}_{ihvs} \boldsymbol{\Gamma} + \epsilon_{ihvs} \end{aligned} \tag{3}$$

where i indexes individuals, h households, v villages, and s randomization strata. The dependent variable is income at endline, Y_{ihvs}. The α_s are stratum FE (20 in total — a function of geographic region and village size). $\boldsymbol{X}_{ihvs}$ includes individual-level baseline covariates. Specifically, we control for income at baseline. To improve precision, we additionally include age, age squared, sex, house quality, years of education, nights hungry in the past month, a dummy for majority ethnicity, a dummy for being born in the village, a dummy for having lived in the city, and a dummy for being an evangelical Christian. We cluster standard errors at the village level (300 total). Crop

[31] Results are robust to alternative definitions of crop dummies (e.g., above-median threshold) or when using actual crop shares (excluding the constant).

dummies equal one when a village specializes in a given crop more than average, i.e., when its share for that crop exceeds the cross-village average share.[32]

Table A34: Treatment Effects on Income — Heterogeneity by Crop Specialization, Village-Level Crop Dummies

	Income	Depression score	Depression dummy	Income to be happy	Gap income to be happy vs. EL income
Church	-0.079	0.420	0.055	0.144	0.145
	(0.169)	(0.596)	(0.062)	(0.164)	(0.167)
Market	0.268*	-0.276	0.029	0.013	-0.011
	(0.151)	(0.645)	(0.058)	(0.143)	(0.144)
Market ÃÛ Rainy (Jan-Apr) x Negative	-0.874**	1.329	0.070	0.239	0.305
	(0.375)	(1.498)	(0.122)	(0.236)	(0.233)
Market ÃÛ Dry (May-Aug) x Negative	-0.266	-0.486	-0.087	0.042	0.067
	(0.228)	(1.110)	(0.095)	(0.229)	(0.224)
Market ÃÛ Rainy (Sep-Dec) x Negative	-0.349*	-1.117	-0.070	-0.106	-0.089
	(0.190)	(0.849)	(0.081)	(0.195)	(0.194)
Market ÃÛ Rainy (Jan-Apr) x Positive	0.150	0.354	0.040	0.249	0.256
	(0.316)	(1.322)	(0.108)	(0.200)	(0.198)
Market ÃÛ Dry (May-Aug) x Positive	-0.001	0.714	0.004	0.223	0.223
	(0.223)	(0.988)	(0.084)	(0.194)	(0.191)
Market ÃÛ Rainy (Sep-Dec) x Positive	0.441**	0.188	-0.001	0.178	0.166
	(0.219)	(0.900)	(0.091)	(0.167)	(0.163)
Market ÃÛ Rainy (Jan-Apr) x Insignificant	0.232	0.816	0.053	-0.102	-0.118
	(0.306)	(1.066)	(0.096)	(0.186)	(0.181)
Market ÃÛ Dry (May-Aug) x Insignificant	-0.220	2.535***	0.207***	0.085	0.107
	(0.213)	(0.875)	(0.079)	(0.191)	(0.189)
Market ÃÛ Rainy (Sep-Dec) x Insignificant	0.087	0.815	0.050	0.235	0.237
	(0.195)	(0.889)	(0.097)	(0.208)	(0.208)
Church ÃÛ Rainy (Jan-Apr) x Negative	-0.626	0.844	0.114	0.175	0.232
	(0.416)	(1.529)	(0.128)	(0.299)	(0.301)
Church ÃÛ Dry (May-Aug) x Negative	0.089	-0.637	-0.085	-0.246	-0.247
	(0.217)	(1.003)	(0.092)	(0.157)	(0.154)
Church ÃÛ Rainy (Sep-Dec) x Negative	0.272	-1.082	-0.064	-0.211	-0.234
	(0.214)	(0.879)	(0.088)	(0.206)	(0.209)
Church ÃÛ Rainy (Jan-Apr) x Positive	0.478	0.307	0.070	-0.239	-0.268
	(0.302)	(1.339)	(0.109)	(0.190)	(0.190)
Church ÃÛ Dry (May-Aug) x Positive	-0.009	-0.094	0.044	-0.090	-0.087
	(0.204)	(0.972)	(0.085)	(0.143)	(0.141)
Church ÃÛ Rainy (Sep-Dec) x Positive	0.383**	-0.033	-0.047	0.140	0.127
	(0.193)	(0.892)	(0.093)	(0.174)	(0.176)
Church ÃÛ Rainy (Jan-Apr) x Insignificant	0.339	-0.579	-0.034	-0.033	-0.049
	(0.284)	(1.077)	(0.108)	(0.246)	(0.244)
Church ÃÛ Dry (May-Aug) x Insignificant	-0.200	1.389	0.064	-0.013	0.009
	(0.201)	(0.912)	(0.085)	(0.141)	(0.140)
Church ÃÛ Rainy (Sep-Dec) x Insignificant	-0.068	-0.022	-0.033	0.027	0.032
	(0.189)	(1.062)	(0.119)	(0.217)	(0.221)
Baseline Outcome	Y	Y	Y	N	N
Controls	Y	Y	Y	Y	Y
Crop x seasons	Y	Y	Y	Y	Y
Observations	1720	1727	1727	1725	1719
R^2	0.170	0.266	0.173	0.066	0.065
Clusters	300	300	300	300	300
Control_Mean	0	10	.48	0	0
Market_v_Church	.028	.29	.68	.38	.29

Notes: This table summarizes the results from estimating equation 3, using village-level crop dummies. The right-hand side includes dummies for the church and market treatment arms, season × crop dummies, and their interactions. Controls include the baseline outcome and other baseline variables summarized in Section A7.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

As we are interested in measuring inequality *within* villages, we alternatively define crop shares at the *individual* level, keeping the same set of crops described above. Results are given in table A35. This is the definition we retain for the rest of this section.

[32]Results are robust to alternative definitions of crop dummies (e.g., above-median threshold) or when using actual crop shares (excluding the constant).

Table A35: Treatment Effects on Income — Heterogeneity by Crop Specialization, Individual-Level Crop Dummies

	Income	Depression score	Depression dummy	Income to be happy	Gap income to be happy vs. EL income
Church	-0.018	0.087	0.024	0.103	0.103
	(0.087)	(0.440)	(0.043)	(0.097)	(0.098)
Market	0.258***	0.272	0.017	0.107	0.088
	(0.086)	(0.442)	(0.041)	(0.087)	(0.087)
Market ÃÛ Rainy (Jan-Apr) x Negative	0.409	-1.705	-0.148	0.260	0.239
	(0.480)	(2.107)	(0.174)	(0.275)	(0.276)
Market ÃÛ Dry (May-Aug) x Negative	-0.494*	-0.138	0.089	-0.205	-0.169
	(0.295)	(1.132)	(0.134)	(0.205)	(0.202)
Market ÃÛ Rainy (Sep-Dec) x Negative	0.112	-2.950**	-0.144	0.629*	0.621*
	(0.276)	(1.374)	(0.122)	(0.363)	(0.367)
Market ÃÛ Rainy (Jan-Apr) x Positive	-0.111	1.862*	0.188	0.178	0.205
	(0.260)	(1.071)	(0.123)	(0.130)	(0.130)
Market ÃÛ Dry (May-Aug) x Positive	-0.289	1.277	0.100	-0.031	-0.011
	(0.258)	(1.095)	(0.089)	(0.268)	(0.267)
Market ÃÛ Rainy (Sep-Dec) x Positive	0.320	-0.285	0.021	-0.117	-0.129
	(0.234)	(1.077)	(0.102)	(0.143)	(0.143)
Market ÃÛ Rainy (Jan-Apr) x Insignificant	0.009	0.036	0.068	-0.148	-0.144
	(0.383)	(1.361)	(0.135)	(0.391)	(0.393)
Market ÃÛ Dry (May-Aug) x Insignificant	-0.406**	-0.243	0.115	0.417**	0.443**
	(0.205)	(0.984)	(0.095)	(0.195)	(0.193)
Market ÃÛ Rainy (Sep-Dec) x Insignificant	-0.104	1.323	0.161	-0.157	-0.147
	(0.269)	(1.441)	(0.116)	(0.165)	(0.163)
Church ÃÛ Rainy (Jan-Apr) x Negative	-0.008	1.257	0.185	0.049	0.043
	(0.336)	(1.723)	(0.166)	(0.189)	(0.193)
Church ÃÛ Dry (May-Aug) x Negative	0.020	-1.262	-0.136	-0.269	-0.253
	(0.382)	(1.486)	(0.144)	(0.181)	(0.178)
Church ÃÛ Rainy (Sep-Dec) x Negative	0.739**	-1.251	-0.123	-0.189	-0.236*
	(0.328)	(1.132)	(0.125)	(0.132)	(0.129)
Church ÃÛ Rainy (Jan-Apr) x Positive	0.405	0.183	-0.024	-0.076	-0.090
	(0.331)	(1.248)	(0.138)	(0.119)	(0.123)
Church ÃÛ Dry (May-Aug) x Positive	-0.216	1.420	0.114	-0.217	-0.202
	(0.241)	(1.040)	(0.080)	(0.214)	(0.211)
Church ÃÛ Rainy (Sep-Dec) x Positive	0.281	-0.382	-0.023	0.074	0.061
	(0.226)	(1.101)	(0.097)	(0.170)	(0.171)
Church ÃÛ Rainy (Jan-Apr) x Insignificant	0.167	0.176	0.041	-0.202	-0.207
	(0.337)	(1.416)	(0.133)	(0.359)	(0.361)
Church ÃÛ Dry (May-Aug) x Insignificant	-0.175	2.014*	0.147	0.145	0.156
	(0.214)	(1.150)	(0.124)	(0.126)	(0.128)
Church ÃÛ Rainy (Sep-Dec) x Insignificant	0.253	1.002	0.104	-0.007	-0.020
	(0.279)	(1.450)	(0.117)	(0.161)	(0.161)
Baseline Outcome	Y	Y	Y	N	N
Controls	Y	Y	Y	Y	Y
Crop x seasons	Y	Y	Y	Y	Y
Observations	1720	1727	1727	1725	1719
R^2	0.164	0.268	0.176	0.075	0.073
Clusters	300	300	300	300	300
Control_Mean	0	10	.48	0	0
Market_v_Church	.0024	.67	.86	.97	.88

Notes: This table summarizes the results from estimating equation 3, using individual-level crop dummies. The right-hand side includes dummies for the church and market treatment arms, season × crop dummies, and their interactions. Controls include the baseline outcome and other baseline variables summarized in Section A7.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.

We then assess the quality of the prediction by deriving predicted income from the treatment-related components of the prediction only: treatment dummies, and interaction terms between treatment, crop, and season dummies. This measure is zero by construction for the control group. We regress this predicted income measure on actual income at endline, controlling for baseline covariates and stratum fixed effects (table A36).

Table A36: Predicted Income on Actual Income and Perceived Wellbeing

Panel A: Market Arm

	Endline income	Depression	Depression>10	Income to be happy	Gap income to be happy vs. EL income
Predicted income	0.557**	0.145	-0.184	-0.017	-0.045
	(0.267)	(1.126)	(0.120)	(0.199)	(0.196)
Baseline Outcome	Y	Y	Y	N	N
Controls	Y	Y	Y	Y	Y
Stratum FE	Y	Y	Y	Y	Y
Observations	588	588	588	587	587
R^2	0.192	0.287	0.194	0.107	0.105

Panel B: Church Arm

	Endline income	Depression	Depression>10	Income to be happy	Gap income to be happy vs. EL income
Predicted income	0.587*	-1.064	-0.143	-0.529**	-0.577***
	(0.318)	(1.030)	(0.118)	(0.212)	(0.212)
Baseline Outcome	Y	Y	Y	N	N
Controls	Y	Y	Y	Y	Y
Stratum FE	Y	Y	Y	Y	Y
Observations	565	565	565	565	565
R^2	0.179	0.258	0.164	0.085	0.083

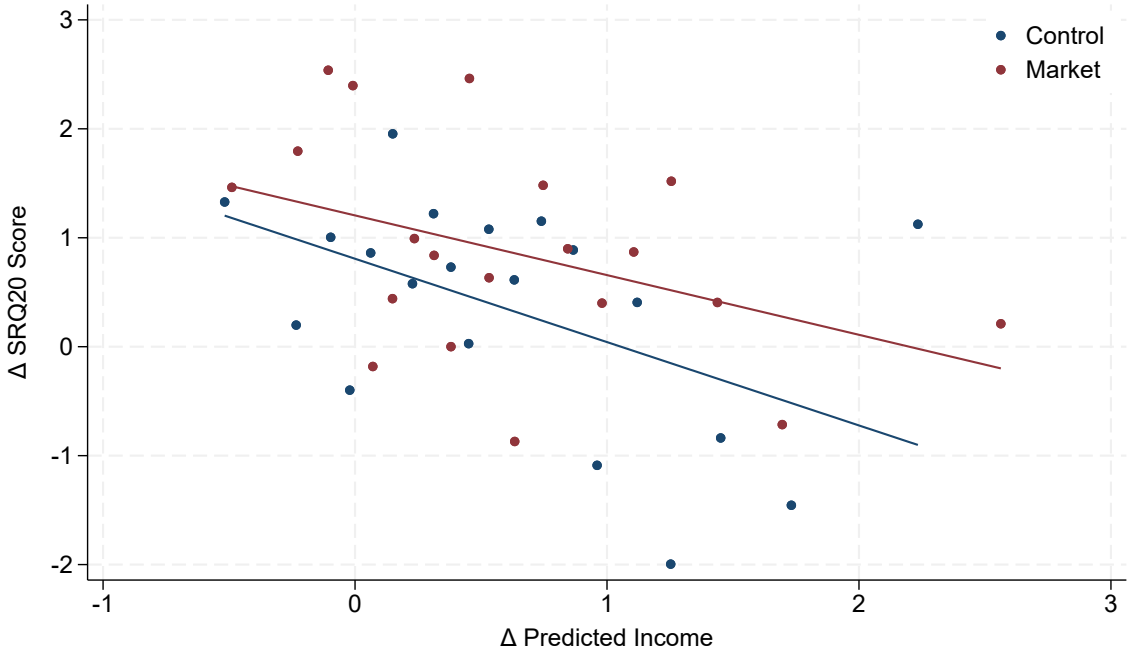
Notes: This table presents results from regressing actual endline income and other measures of wellbeing on our predicted income measure, derived from treatment-specific estimates of equation 3 with individual-level crop dummies. Controls include the baseline outcome and other baseline variables summarized in Section A7.2. Standard errors are clustered at the village level.

A7.3 Wellbeing — Treatment heterogeneity

In this section, we use our predicted income measure to replicate the earlier analysis on inequality and wellbeing. We predict income following equation 3, using not only the treatment-specific components but the full specification.

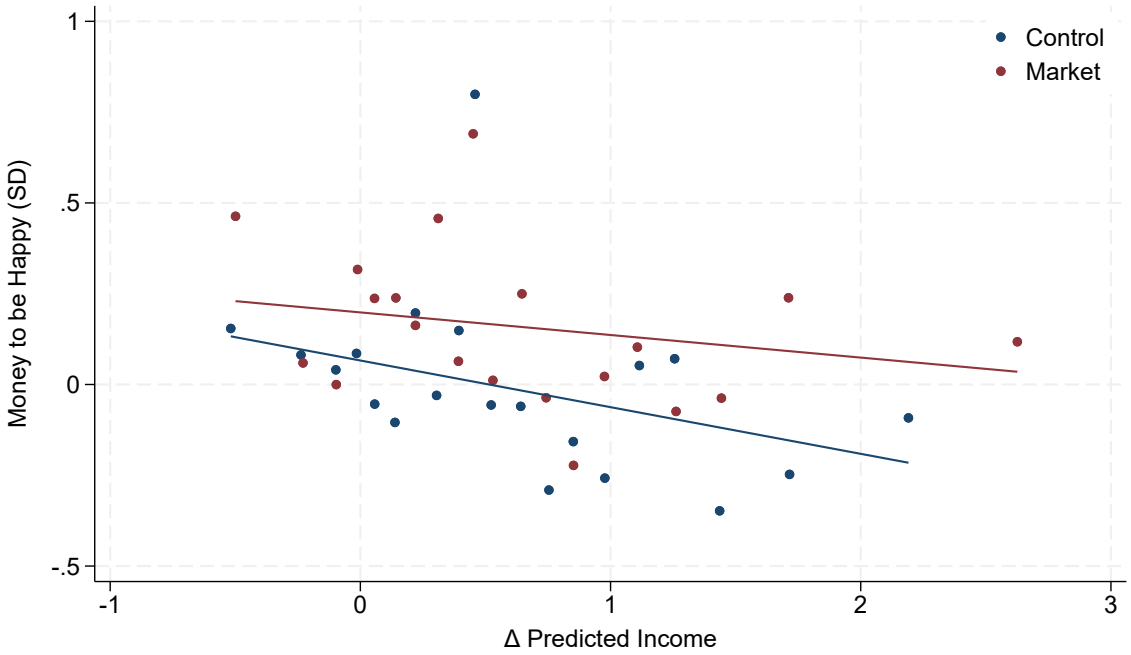
Predicted income is positively associated with better wellbeing (Figure A19).

Figure A19: Predicted Income Changes After the Market Program and Wellbeing



Notes: This figure shows the correlation between changes in predicted income and changes in subjective wellbeing.

Figure A20: Predicted Income Changes and Money to be Happy



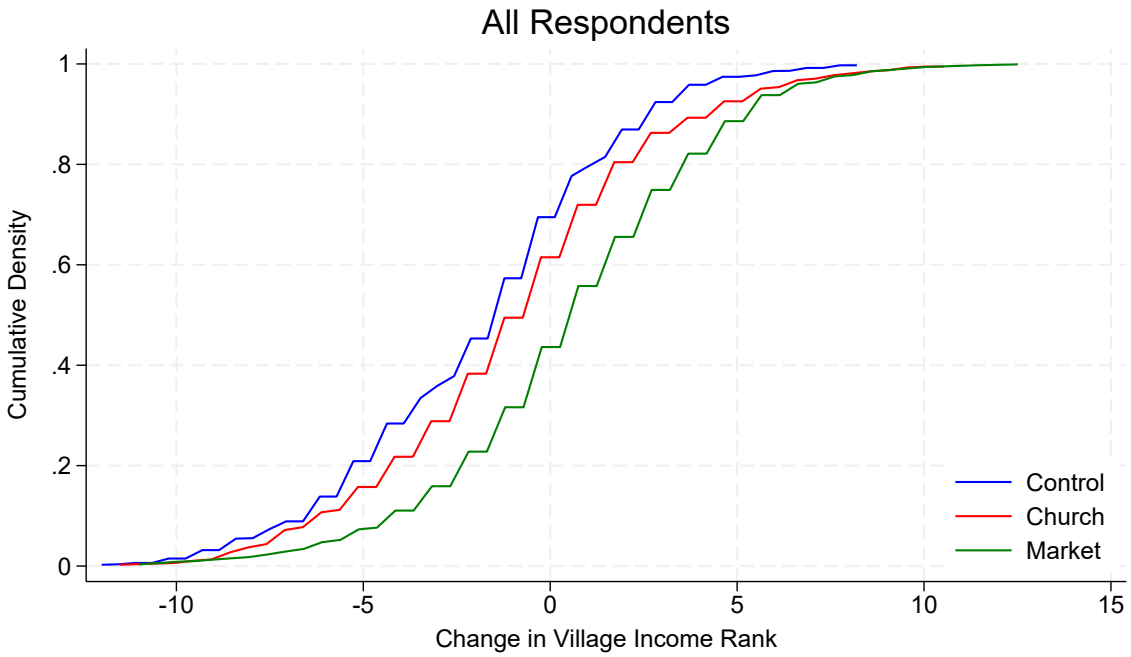
Notes: This figure shows the correlation changes in income from baseline to predicted income at endline and the money needed to be happy at endline (this variable was not included at baseline) — separately for the market treatment and control.

A7.4 Inequality — Treatment heterogeneity

First, we recalculate ranks based on our predicted income measure, as defined in Section A7.3, within villages using the full sample of respondents (main respondents and network individuals). As our prediction excludes non-main respondents, we treat them similarly to the control group, basing their predictions on baseline variables only.

Individuals in the market group are more likely to experience an increase in their rank by endline compared to baseline.

Figure A21: Change in Predicted Income Rank in Village



Notes: This figure shows the CDFs of changes in income rank using our predicted income measure, derived from equation 3, at endline compared to baseline. As this prediction excludes non-main respondents, we treat them similarly to the control group, basing their predictions on baseline variables only. The distribution is not centered around zero because non-main respondents are omitted from the CDFs, while changes in village income rank include these individuals.

Table A37: Change in Predicted Income Rank and Change in Wellbeing

Panel A: All Respondents

	Main Respondents					All Respondents				
	Inc. Rank	Δ Dep.	Δ Dep.	Δ Dep.	Δ Dep.	Inc. Rank	Δ Dep.	Δ Dep.	Δ Dep.	Δ Dep.
Δ Inc. Pred. Rank (Resp.)	0.536***	0.002	0.012	0.006	0.010					
	(0.040)	(0.015)	(0.016)	(0.015)	(0.017)					
Church	-0.152	0.042	0.047	0.046						
	(0.103)	(0.031)	(0.034)	(0.031)						
Market	-0.145	0.053*	0.053*	0.057**						
	(0.099)	(0.028)	(0.030)	(0.028)						
Church × Δ Inc. Pred. Rank (Resp.)	-0.150***	-0.029	-0.035	-0.027	-0.025					
	(0.056)	(0.022)	(0.022)	(0.022)	(0.024)					
Market × Δ Inc. Pred. Rank (Resp.)	-0.069	-0.022	-0.036	-0.022	-0.022					
	(0.052)	(0.021)	(0.022)	(0.021)	(0.024)					
Δ Inc. Pred. Rank (All)						0.205***	0.007***	0.004*	0.006***	0.007***
						(0.021)	(0.002)	(0.002)	(0.002)	(0.002)
Church						-0.312	0.032	0.029	0.032	
						(0.200)	(0.023)	(0.021)	(0.021)	
Market						-0.014	0.051**	0.041**	0.042**	
						(0.193)	(0.021)	(0.020)	(0.020)	
Church × Δ Inc. Pred. Rank (All)						0.003	-0.010***	-0.009**	-0.008**	-0.009**
						(0.025)	(0.004)	(0.003)	(0.003)	(0.003)
Market × Δ Inc. Pred. Rank (All)						0.019	-0.009**	-0.007**	-0.007**	-0.007*
						(0.027)	(0.003)	(0.003)	(0.003)	(0.003)
Baseline Outcome Control	N	Y	N	Y	Y	N	N	Y	Y	Y
Δ Income Control	Y	N	N	Y	Y	Y	N	N	Y	Y
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1720	1720	1720	1720	1720	3975	3975	3975	3975	3975
Village FE	N	N	N	N	Y	N	N	N	N	Y
Stratum FE	Y	Y	Y	Y	N	Y	Y	Y	Y	N
Control_Mean	-.15	.48	.48	.48	.48	-1.9	.48	.48	.48	.48
Church_v_Control	.0074	.18	.12	.21	.29	.92	.0033	.012	.015	.01
Market_v_Control	.18	.3	.1	.3	.35	.48	.015	.041	.049	.058
Market_v_Church	.14	.76	.99	.81	.9	.48	.63	.64	.66	.51

Panel B: Respondents with Increase in Predicted Rank

	Main Respondents					All Respondents				
	Inc. Rank	Δ Dep.	Δ Dep.	Δ Dep.	Δ Dep.	Inc. Rank	Δ Dep.	Δ Dep.	Δ Dep.	Δ Dep.
Δ Inc. Pred. Rank (Resp.)	0.340**	-0.014	-0.033	-0.010	-0.021					
	(0.133)	(0.044)	(0.047)	(0.044)	(0.126)					
Church	0.031	0.108	0.049	0.105						
	(0.355)	(0.130)	(0.134)	(0.131)						
Market	0.038	0.075	0.071	0.081						
	(0.309)	(0.117)	(0.124)	(0.118)						
Church × Δ Inc. Pred. Rank (Resp.)	-0.176	-0.064	-0.022	-0.060	0.087					
	(0.210)	(0.072)	(0.073)	(0.072)	(0.230)					
Market × Δ Inc. Pred. Rank (Resp.)	-0.001	-0.047	-0.052	-0.049	0.029					
	(0.178)	(0.063)	(0.067)	(0.063)	(0.166)					
Δ Inc. Pred. Rank (All)						0.225***	0.000	-0.002	0.001	-0.001
						(0.053)	(0.007)	(0.007)	(0.007)	(0.009)
Church						-0.007	0.043	0.042	0.043	
						(0.362)	(0.057)	(0.055)	(0.055)	
Market						-0.072	-0.011	-0.018	-0.018	
						(0.345)	(0.058)	(0.053)	(0.054)	
Church × Δ Inc. Pred. Rank (All)						-0.049	-0.009	-0.008	-0.008	-0.004
						(0.074)	(0.010)	(0.010)	(0.010)	(0.012)
Market × Δ Inc. Pred. Rank (All)						0.071	0.005	0.007	0.007	0.005
						(0.069)	(0.011)	(0.010)	(0.010)	(0.012)
Baseline Outcome Control	N	Y	N	Y	Y	N	N	Y	Y	Y
Δ Income Control	Y	N	N	Y	Y	Y	N	N	Y	Y
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	446	446	446	446	446	1719	1719	1719	1719	1719
Village FE	N	N	N	N	Y	N	N	N	N	Y
Stratum FE	Y	Y	Y	Y	N	Y	Y	Y	Y	N
Control_Mean	1.5	.5	.5	.5	.5	2.5	.47	.47	.47	.47
Church_v_Control	.4	.38	.77	.41	.71	.5	.37	.43	.45	.75
Market_v_Control	1	.45	.44	.43	.86	.31	.62	.51	.5	.7
Market_v_Church	.39	.82	.67	.88	.79	.079	.16	.15	.15	.47

Table A37: Change in Predicted Income Rank and Change in Wellbeing

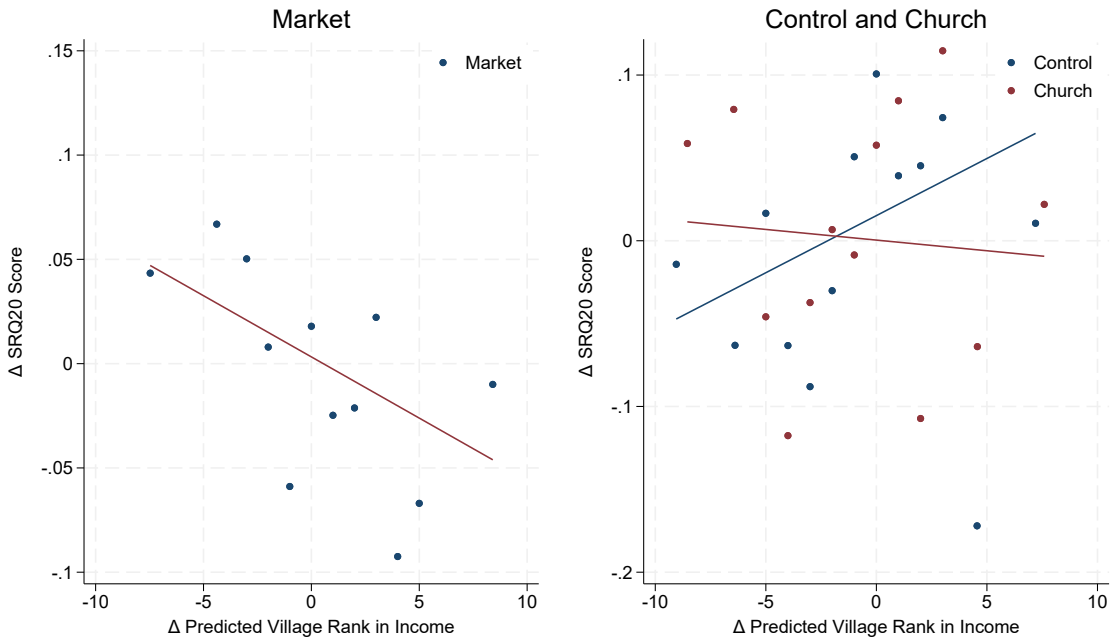
Panel C: Respondents with Decrease in Predicted Rank

	Main Respondents					All Respondents				
	Inc. Rank	Δ Dep.	Δ Dep.	Δ Dep.	Δ Dep.	Inc. Rank	Δ Dep.	Δ Dep.	Δ Dep.	Δ Dep.
Δ Inc. Pred. Rank (Resp.)	0.656***	0.027	0.045	0.030	0.072					
	(0.075)	(0.039)	(0.040)	(0.039)	(0.085)					
Church	-0.309	-0.073	-0.100	-0.083						
	(0.304)	(0.109)	(0.112)	(0.109)						
Market	-0.561**	0.040	0.029	0.048						
	(0.278)	(0.105)	(0.109)	(0.105)						
Church × Δ Inc. Pred. Rank (Resp.)	-0.249	-0.093	-0.125**	-0.100*	-0.152					
	(0.153)	(0.059)	(0.062)	(0.058)	(0.135)					
Market × Δ Inc. Pred. Rank (Resp.)	-0.377***	-0.032	-0.055	-0.031	-0.068					
	(0.141)	(0.058)	(0.060)	(0.058)	(0.128)					
Δ Inc. Pred. Rank (All)						0.313***	0.010	0.006	0.008	0.012*
						(0.035)	(0.007)	(0.006)	(0.006)	(0.007)
Church						-0.752**	0.003	0.004	0.004	
						(0.337)	(0.049)	(0.046)	(0.046)	
Market						-0.525*	0.027	0.029	0.030	
						(0.301)	(0.048)	(0.047)	(0.047)	
Church × Δ Inc. Pred. Rank (All)						-0.071	-0.018**	-0.016*	-0.016*	-0.023**
						(0.051)	(0.009)	(0.009)	(0.009)	(0.010)
Market × Δ Inc. Pred. Rank (All)						-0.099**	-0.016*	-0.013	-0.012	-0.009
						(0.047)	(0.009)	(0.009)	(0.009)	(0.010)
Baseline Outcome Control	N	Y	N	Y	Y	N	N	Y	Y	Y
Δ Income Control	Y	N	N	Y	Y	Y	N	N	Y	Y
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	568	568	568	568	568	1870	1870	1870	1870	1870
Village FE	N	N	N	N	Y	N	N	N	N	Y
Stratum FE	Y	Y	Y	Y	N	Y	Y	Y	Y	N
Control_Mean	-1.6	.46	.46	.46	.46	-4	.46	.46	.46	.46
Church_v_Control	.1	.11	.044	.088	.26	.17	.044	.064	.062	.021
Market_v_Control	.0081	.59	.36	.59	.6	.037	.078	.15	.16	.34
Market_v_Church	.47	.34	.3	.28	.54	.58	.78	.7	.66	.18

Notes: These tables present results from regressing actual rank and other measures of wellbeing on our predicted rank measure, derived from equation 3, at endline compared to baseline. As this prediction excludes non-main respondents, we treat them similarly to the control group, basing their predictions on baseline variables only. Controls include the baseline outcome and other baseline variables summarized in Section A7.2. Standard errors are clustered at the village level. Column (1) defines rank within main respondents only, while column (2) defines rank including non-main respondents. Panel A includes all individuals, while Panels B and C restrict the sample to individuals experiencing an increase and a decrease in predicted rank, respectively.

Figure A22: Δ Predicted Income Rank in Village and Δ Wellbeing — Spillover Sample

Panel A: All Respondents



Panel B: Respondents with Increase in Predicted Rank

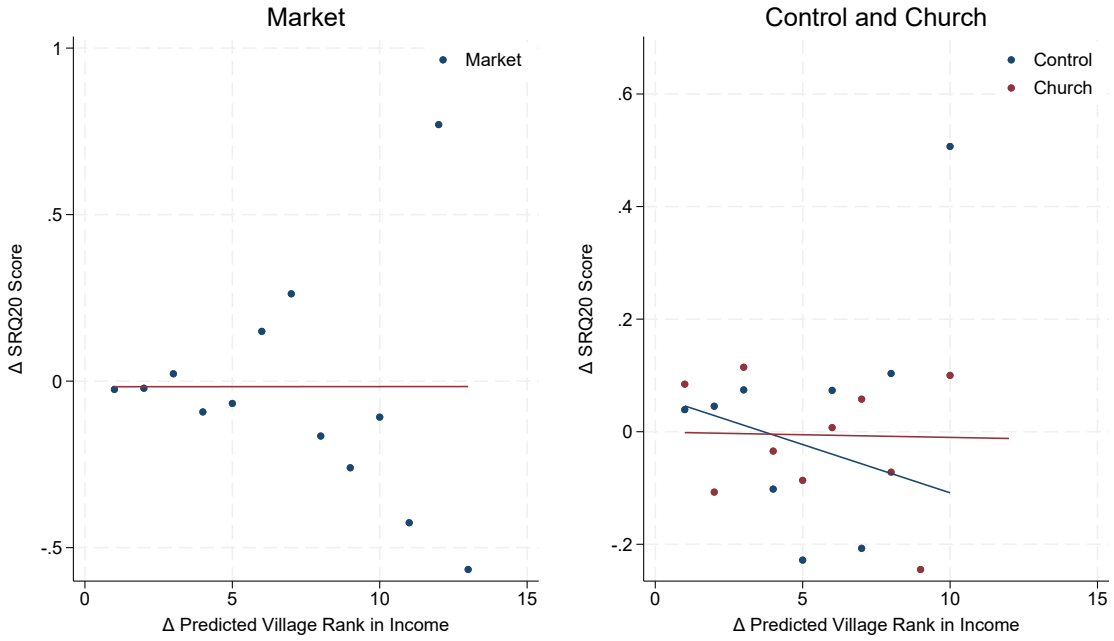
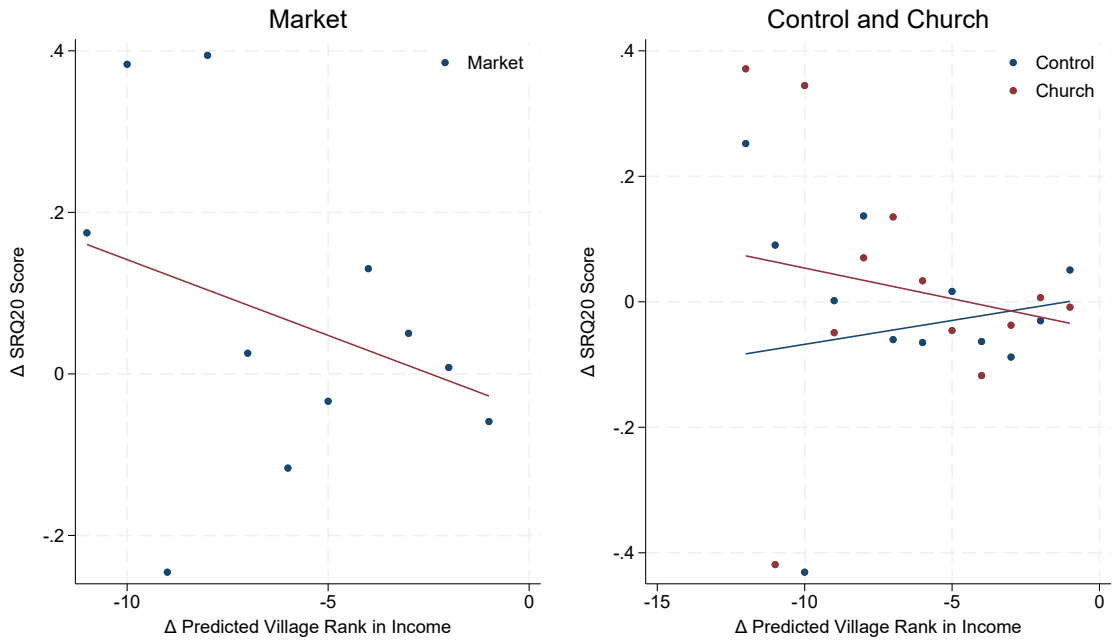


Figure A22: Δ Predicted Income Rank in Village and Δ Wellbeing — Spillover Sample (continued)

Panel C: Respondents with Decrease in Predicted Rank

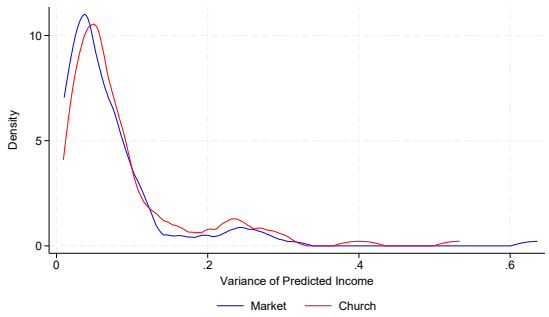


Notes: This figure shows the correlation between changes in within-village predicted income rank (among main respondents and their network) and changes in the SRQ-20 score from baseline to endline.

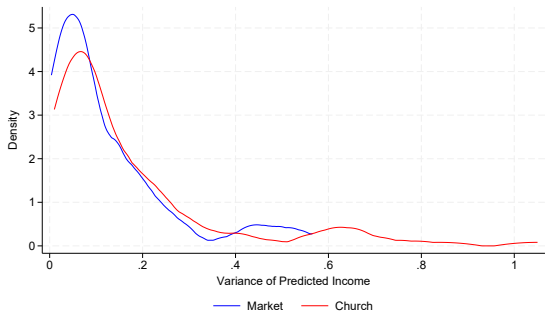
Finally, we examine inequality by calculating the variance in predicted endline income within villages.

Figure A23: Distribution of predicted variance of predicted income

Panel A: All Respondents



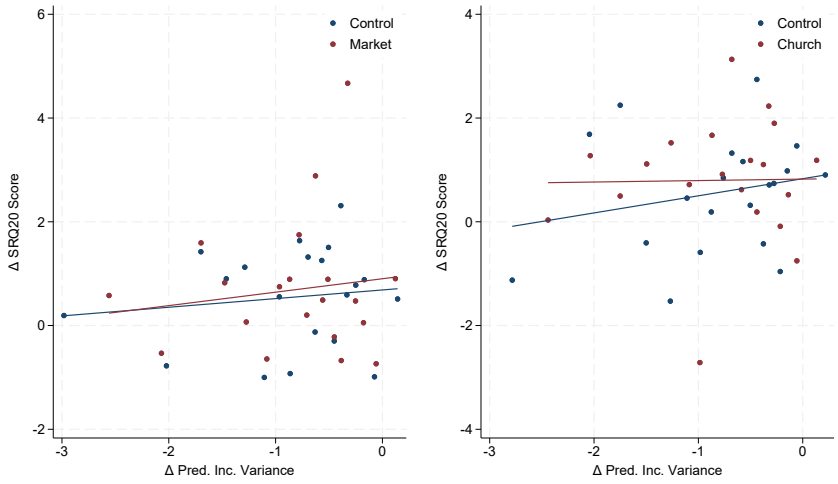
Panel B: Main Respondents



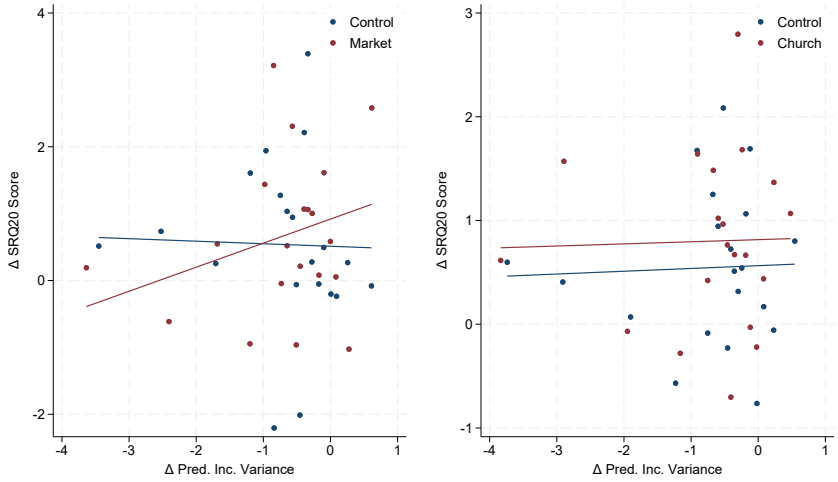
Notes: This figure shows the CDFs of within-village income variance using our predicted income measure, derived from equation 3. As this prediction excludes non-main respondents, we treat them similarly to the control group, basing their predictions on baseline variables only. In Panel A, within-village variance is calculated using the full sample, while Panel B restricts the sample to main respondents only.

Figure A24: Predicted Within-Village Inequality and Wellbeing

Panel A: All Respondents



Panel B: Main Respondents



Notes: This figure shows the correlation between changes in within-village predicted income variance and changes in the SRQ-20 score from baseline to endline. A higher SRQ-20 score indicates worse wellbeing. The left panel shows the relationship for the control and market treatment groups; the right panel shows it for the control and church treatment groups. In Panel A, within-village variance is calculated using the full sample, while Panel B restricts the sample to main respondents only.

Table A38: Within-Village Income Inequality and Wellbeing

	All treatments		Market Arm Only	
	Δ Variance of Pred. Inc.	Increase in Variance of Pred. Inc. (1-0)	Δ SRQ20	Δ SRQ20
Church	0.034**	-0.013		
	(0.014)	(0.037)		
Market	0.003	-0.014		
	(0.011)	(0.036)		
Δ Variance of Pred. Inc.			0.398	
			(0.278)	
Increase in Variance of Pred. Inc. (1-0)				1.313
				(0.817)
Baseline Outcome	Y	N	N	N
Controls	Y	Y	Y	Y
Observations	1727	1727	588	588
Control_Mean	.33	.47	.68	.68

Notes: This table examines the relationship between within-village predicted income inequality among main respondents at endline and wellbeing. The first column summarizes the results from estimating Equation 1 with the difference between (predicted) income variance from baseline to endline as the outcome. The second column instead considers a dummy indicating an increase in predicted income variance (among main respondents). The right-hand side includes dummies for the church and market treatment arms. The next two columns consider only the market arm and examine the correlation between within-village predicted income variance changes and changes in the SRQ-20 score as the outcome. Controls are summarized in Section A7.2. The p-values for F-tests comparing differences between the coefficients on the aforementioned treatment dummies can be found in the bottom rows. SEs are clustered at the village level.