

**Changing intrahousehold decision making
to empower women in their households**
A mixed methods analysis of a field
experiment in rural south-west Tanzania

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ABSTRACT

This study assesses the impact of an intervention that challenges gender relations by introducing a more participatory way of intrahousehold decision making on women's empowerment in monogamous agricultural households in Tanzania. Participatory intrahousehold decision making is introduced through (i) awareness raising couple seminars in which couples go through a self-assessment and group discussion about their intrahousehold division of roles and resources; and through (ii) a subsequent intensive coaching package of activities in which couples are coached by gender officers on how to implement participatory decision making in their household.

The study adopts a mixed methods approach, which consists of (i) a quantitative impact assessment of the introduction of participatory intrahousehold decision making on different domains of women's empowerment, through respectively the couple seminars and randomly encouraged intensive coaching, and (ii) a qualitative component to understand how the changes caused by the interventions fit into women's own valued aspects and processes of empowerment, by which the study embraces the inherently subjective dimensions of empowerment.

The study shows that awareness-raising couple seminars catalysed women's access to livestock, but not their access to personal income while this is highly valued by women for independently taking minor expenditure decisions for their household's wellbeing. In line with women's priorities, intensive coaching in participatory intrahousehold decision making increased women's control over and accuracy of information about household income earned with coffee. Both couple seminars and intensive coaching increased women's involvement in strategic farm decisions, which fits women's wish for effective decision-making power in this domain. Couple seminars contributed to a fairer division of productive and reproductive labour among spouses, which is advantageous to women, even if this was not a key priority from women's perspective.



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Ethics approval

This study was granted ethical clearance by the Ethics Committee for the Social Sciences and Humanities of the University of Antwerp (SHW_15_41) and by the Tanzania Commission for Science and Technology (2017-236-NA-2017-249).

Data statement

The quantitative questionnaires, dataset, Stata code, and qualitative interview guide and transcripts are accessible at DOI: <http://dx.doi.org/10.17632/hmh94r2smc.1>

1. INTRODUCTION

Gender equity and women's empowerment are high on the development agenda, both for their intrinsic and instrumental value. When addressing gender equity and women's empowerment, a focus on households is extremely relevant, particularly in rural societies in Sub-Saharan Africa where intrahousehold power relations are often unbalanced, due to patriarchal norms and customs internalised by both men and women (Doss & Quisumbing, 2020; Gammage et al., 2016). Households do not only reflect gender and social norms but at the same time are a space where gender and social norms are reinforced. This happens not only through the division of labour or distribution of resources, but also through ideas and perceptions by which men and women are portrayed. Evidence of intrahousehold inequalities with regard to income, health, labour division, and resource allocation, mostly at the disadvantage of women, is well documented and widespread (Calvi, 2020; Doss, 2013; Duflo & Udry, 2004; Quisumbing & Maluccio, 2003). Evidence of positive outcomes for women, children, and households following from reduced intrahousehold inequality and smaller empowerment gaps between spouses is emerging (Cathy Farnworth et al., 2018; Heckert et al., 2019; Kerr et al., 2007, 2016; Lecoutere & Wuyts, 2020; H. J. L. Malapit et al., 2019; Quisumbing et al., 2020).

Doss and Quisumbing (2020) argue that interventions focusing on women's and men's bargaining within households may have led to missed opportunities from greater cooperation within households. There is a risk that interventions solely targeting women may not only have unintentionally reinforced social norms restricting women's agency but may also have overlooked that decisions of strategic importance for the household are sometimes taken jointly by spouses. Cornwall (2016) points out that, in discourse and practice regarding women's empowerment, the focus has shifted towards empowering women through control over resources, assets, or services rather than by questioning social norms, changing power relations, and building critical consciousness. Galiè and Farnworth (2019) argue that there is a tendency to overlook the relational nature of empowerment where one's capability for empowerment is partly shaped by one's relation to others, as well as by norms and perceptions about how one should relate to others. In their example of Kenyan women, determination and self-confidence are considered intrinsic characteristics conducive for women and men to become empowered. Yet, when expressing these characteristics, only women face a risk of being considered disrespectful of their husbands, in which case they are not deemed empowered in the eyes of the community.

Relatively recently developed behavioural change methodologies termed household methodologies address some of these challenges. Household methodologies aim to facilitate cooperation in the household, mostly between spouses, and more gender equitable intrahousehold decision-making processes and, as such, contribute to more efficient outcomes and a more equitable distribution of benefits between male and female household members (Farnworth et al., 2018). They often entail activities where social norms are called into question, albeit involving the wider community. Promoting joint decision making can be a strategy to transform power relations between the male and female co-heads in households (Farnworth et al., 2013; Hillenbrand et al., 2015) and, as such, contribute to women's empowerment (Ambler et al., 2021; Anderson et al., 2017). By addressing intrahousehold roles and decision-making processes directly, household methodologies differ from programs that aim to empower women in the household primarily by strengthening women's outside options. Robust evidence of the effect of household methodologies and other strategies aiming to change intrahousehold power relations such that they facilitate women's empowerment, gender equity, and intrahousehold cooperation is still scarce. This study will address this evidence gap.

This study specifically provides a mixed methods analysis of the impact of an intervention, implemented in a randomised control trial, that introduced a more participatory way of intrahousehold decision making in monogamous Tanzanian coffee farming households. Participatory intrahousehold decision making means spouses deliberating about strategic household and farm issues and making decisions in consultation with each other. Introducing participatory intrahouse-

hold decision making is hypothesized to contribute to women's empowerment in the household through two pathways. A first pathway is through reducing information asymmetry and strengthening mutual commitment between spouses. These are expected to reduce opportunistic behaviour such as excessive use of resources or shirking on farming or household labour, which can result in a more gender equitable distribution of household resources and division of work between spouses. A second pathway is through strengthening the otherwise limited voice and influence of women in intrahousehold decision making. This is expected to enable women to negotiate and claim a fair share of resources and a fair division of efforts into farming and managing the household.

The study's contributions to the literature are three-fold. First, the study addresses an evidence gap on the potential of programs and methodologies that facilitate women's empowerment within households by addressing power relations within households (Cornwall, 2016; Farnworth et al., 2013; Wong et al., 2019), that acknowledge a possible intertwining of intrahousehold cooperation, joint decision making, and women's empowerment (Doss & Quisumbing, 2020), and that recognise the relational nature of empowerment where the interaction with one's spouse and prevailing norms and gender roles set the terms for empowerment (Galiè & Farnworth, 2019). Second, the study uses a rigorous mixed-method design combining quantitative experimental and qualitative methods to evaluate the effect of introducing participatory intrahousehold decision making on different domains of women's empowerment in monogamous coffee farming households in Tanzania. Third, the study not only quantitatively assesses the impact on different domains of women's empowerment in the household but also brings in women's perspectives of the value and meaning of empowerment and their processes of empowerment. This allows an assessment of the way the changes caused by the introduction of participatory intrahousehold decision making fit into women's own valued aspects and processes of empowerment, by which the study embraces the more subjective dimensions of sense of agency and achievements (Kabeer, 1999).

The impact of intensive coaching in participatory intrahousehold decision making is quantitatively estimated by comparing outcomes in a group of couples who participated in awareness raising couple seminars and were then randomly encouraged for the intensive coaching with those in a group of couples who participated in couple seminars but were not encouraged to participate in intensive coaching. The impact of couple seminars is estimated by comparing groups of couples who participated in couple seminars with groups of couples who were not exposed to any intervention using propensity score matching as an identification strategy. The qualitative part is based on in-depth interviews with women which provide insights into women's perspectives of valued domains and processes of empowerment and enable evaluating what the observed effects of participatory intrahousehold decision making mean for women and their processes of empowerment. The study demonstrated that awareness-raising couple seminars catalysed women's access to household livestock, but not to personal income which women value for independent expenditure decisions for their households' wellbeing. Intensive coaching in participatory intrahousehold decision making increased women's access to household coffee income, a priority for women, as well as transparency between spouses about coffee income. Both couple seminars and intensive coaching increased women's involvement in strategic farm decisions, as women wished. While not a priority from women's perspectives, couple seminars contributed to a fairer division of productive and reproductive labour among spouses, which is favourable for women.

2. LITERATURE

2.1. Conceptualizing women's empowerment

In its broadest sense, empowerment is the "expansion of people's freedom of choice and action to shape their own life" (Narayan, 2005:4). Empowerment can be defined as a process of change where a person acquires the ability to set a personally meaningful goal towards increasing power (Cattaneo & Chapman, 2010: 647), to make strategic life choices in a context where this ability was previously denied to them (Kabeer, 1999), to transform those goals and choices

into desired actions and outcomes (Alsop et al., 2006:10), and to reflect on the impact of their actions (Cattaneo & Chapman, 2010:647). Empowerment defined as a process that involves individual discovery and change acknowledges the need to be able to imagine alternatives (Kabeer, 1999; Malhotra et al., 2002; VeneKlasen & Miller, 2002).

Empowerment is about freedom of choice but not all choices have significant consequences for people's lives. In the case of women's empowerment, choices need to have the potential to challenge existing power relations and patriarchal norms hindering women to live the lives they want (Kabeer, 2005). Besides, for choices to be meaningful, alternative ways of "doing and being" do not only have to be materially possible but also be "conceived to be within the realms of possibility" in women's mind (Kabeer, 2005). These alternatives are not always seen to exist. In patriarchal societies, women often accept and do not question a lesser status, full responsibility of reproductive and domestic work, or domestic violence, or do not find traditional gender norms unjust (Kabeer, 2005; Malhotra et al., 2002). Hence, women's internalisation of a lesser status and unequal rights and responsibilities poses a serious challenge to their journey to empowerment.

The process of gaining ability to exercise choice hinges on three inter-related dimensions including resources, agency, and achievements (Kabeer, 1999, 2005). The first dimension, resources, which can be material as well as human, social, and environmental conversion factors, can be understood as "enabling factors" to make choices or the "means to realize wellbeing" (Sen, 1990). Depending on circumstances in which women are making choices, resources are not always sufficient to convert "enabling factors" into actual choices (Kabeer, 2005). Agency, the second dimension, refers to one's ability to define goals and act upon them. Agency can take several forms including decision-making, negotiation, manipulation, or resistance (Kabeer, 1999, 2005). Agency also has a psychological, more subjective, aspect, namely a woman's "sense of agency" which encompasses the meaning, motivation, and value that women bring into their actions. A process of empowerment is inherently subjective as it often begins from within, from a deep-rooted sense of how people see themselves and what they value doing (Kabeer, 2005). Achievements form the third dimension. Achievements refer to the extent to which the potential of a person to be and do what she values being and doing is realised. They can be seen as the outcome of the ability to make meaningful choices. Looking into failure of achievements is relevant as well. If one fails to achieve valued ways of "being and doing" due to individual choice, the issue of empowerment is not relevant, but if it follows from constraints on the ability to choose and act it can be seen as a failure of empowerment (Kabeer, 2005).

2.2. Prior evidence of impact of methodologies addressing gender relations within households on women's empowerment

The evidence of impact of programs addressing gender relations within households on women's empowerment is limited and mixed. A mixed quasi-experimental and qualitative study in Northern Malawi demonstrated that a community-based participatory education program with workshops, including both men and women, that promoted healthy nutrition and dialogue about gender roles in childcare, household decision making and the division of labour positively affected women's empowerment (Kerr et al., 2007). The program encouraged men and women to share ideas about agricultural practices and gender roles and encouraged more equitable household workloads. A follow-up study showed that the program supported new concepts of masculinity which encouraged men to be involved in childcare, cooking, and domestic work (Kerr et al., 2016). Lecoutere and Wuyts (2020) assessed the impact of an intervention introducing participatory intrahousehold decision making (the same as studied here) in Ugandan coffee farming households using a mixed experimental and qualitative study design. They found that couple seminars raising awareness about participatory intrahousehold decision making increased women's involvement in strategic farm and household decisions, which is highly valued by women in their pathway to empowerment. The introduction of participatory intrahousehold decision making through additional intensive coaching of couples improved women's access to household coffee income, which is per-

ceived by women as essential for their empowerment within their households.

A number of programs applied a methodology of participatory action learning with households and/or communities to address gender relations in households. Examples include the community level Gender Action Learning System (GALS) (Mayoux, 2012), a household level participatory analysis of gendered access to resources and gender roles for gender transformation (Farnworth et al., 2013), an agricultural support program addressing intrahousehold relations to promote more commercial goals in smallholder farming households (Farnworth et al., 2013), the Nurturing Connections program addressing unequal power structures in households and communities by the Helen Keller Institute (Wong et al., 2019), and the Journeys of Transformation program aiming to transform harmful gender attitudes and behaviour by Promundo and CARE (Wong et al., 2019).

Case studies and qualitative assessments of such programs point to increased awareness among men and women of negative consequences of gender inequality, strict gender roles, and gender unequal division of labour for the wellbeing, resilience, and the economic development of the household (Farnworth et al., 2013; Mayoux, 2012). In some cases, attitudes of men, and the wider community, have changed towards accepting greater involvement of women in strategic decisions regarding farm and household, more gender equal access to resources, and involvement of men in domestic activities. More harmonious household relations are reported as well. Yet, there is also evidence that entrenched gender unequal institutions, such as ownership of land, access to other key productive resources, women's limited education, and women's domestic responsibilities hamper women's empowerment.

Evidence of impact of changing intrahousehold gender relations with regard to resource access include Holvoet (2005) who investigated the effects of two subsidised credit programs in southern India. She found that the decision-making influence of women increased when transfers were made to women instead of men. In contrast, in Pakistan, female borrowers in a microcredit intervention did not report any major improvement in intrahousehold decision making after receiving a loan (Montgomery & Weiss, 2011). Yet, wives of male borrowers reported being more empowered in domains such as fertility and household finances. An experimental study of group-based microfinance in Hyderabad, India, found no evidence for the proposition that access to loans permits women to generate income and to gain decision-making power regarding food, clothing, health, home purchase repair, education, durable goods, investment, or children's wellbeing (Banerjee et al., 2015). Effects of cash transfers on women's empowerment are not univocal either (Yoong et al., 2012). If cash transferred to a woman stays in her control, she may have the greater say over resources relative to other household members, which, in turn, strengthens her bargaining power within the household. Additionally, women may gain access to income earning opportunities and other resources by expanding social networks through their participation in cash programs. However, if household resources are mostly controlled by a male partner, transferring cash to women may not translate into greater empowerment. Also, cash transferred to women within these programs may crowd out the intrahousehold cash transfers that women normally receive from their spouses. Finally, fulfilling the conditionality for cash transfers may reduce the time women can spend on earning an income. In such cases the net effect on the amount of resources controlled by women can be zero (Adato et al., 2000; de Brauw et al., 2014; Handa et al., 2009). Unconditional cash transfers to primary (female) caregivers of young children in the context of a child grant program in Zambia was found to increase women's individual and joint decision making in several domains including children's schooling, personal income, husband's income, children's clothes, and family visits (Bonilla et al., 2017). Yet, impacts remained limited due to entrenched gender norms.

3. CONTEXT AND INTERVENTION

3.1. Context

In Tanzania, gender inequalities, generally disadvantaging women, are prevalent in outcomes related to education, livelihoods, property rights and asset ownership, and health (Levtov et al., 2019; Peterman, 2011). It is widely acknowledged that gender inequality follows from structural factors that determine power relations between men and women, prevailing norms, and ideologies, and –formal and informal– laws that solidify or entrench unequal power relations (George et al., 2020). Norms, as conceptualised in social psychological and sociological theory, entail beliefs about what is common practice within a particular group that govern and constrain behaviours (Ball Cooper & Fletcher, 2012; Marcus R. & Harper, 2014). Norms also define gender roles and power dynamics within households, communities, and the wider society. By determining what is valued and accepted, norms also shape formal institutions, including laws and codes of conduct, that, in turn, perpetuate gender inequalities.

In the context of rural Tanzania, for instance, prevailing gender norms shaped customary law which limits women’s access to resources and land and therefore constrains women’s capabilities and outcomes. Gender norms about masculinity and men’s role in the household prescribe men to be head and bread winners of the household, while gender norms about femininity and women’s role in the household prescribe women to be caregivers and responsible for domestic work. Not only have such gender norms hampered women’s access to schooling, the labour market, and resources (Börjesson, 2005; George et al., 2020), they also prevent women from independently earning income and autonomous mobility because these roles are considered “masculine”. Gender norms also influence intrahousehold decision making. Men believe (they need) to have more control over critical strategic decisions that can change their lives while women generally believe to have much less control in both strategic life decisions and everyday household decisions (Levtov et al., 2019; Palermo et al., 2020).

Changes in women’s property and inheritance rights are strongly positively associated with women’s employment outside the home and women’s personal income (Peterman, 2011), which can strengthen their intrahousehold bargaining power. Having secure rights to land also increases women’s incentives to manage that land more sustainably by adopting more sustainable farming techniques, which contributes to improved women’s outcomes and reduced poverty (Ali et al., 2014; Field, 2007; Kumar & Quisumbing, 2013).

While Tanzania was the second country in Sub-Saharan Africa to enact new legislation on land in the 1990s, the country ranks the second lowest when it comes to (formal) female landownership (Dancer, 2017). Inheriting land is the most common way of acquiring land, followed by purchasing land. An estimated 80 percent of ethnic groups within Tanzania follow patrilineal inheritance (Tenga, 1988: in Dancer, 2017). In patrilineal practice, clan land (i.e. land transferred across generations of the larger family) is heritable by men, with women obtaining their interests in land through their husbands or sons. For instance, according to Tanzanian Local Customary Law, the first heir of a deceased man is the first male child by his (most senior) wife (United Republic of Tanzania, 2002). If the deceased did not have a male child with his (senior) wife, the first male child from any wife will be the first heir. Women are allowed to inherit equipment for agricultural production and income generation from their husband’s property, but not clan land. Hence, women’s access to clan land and benefits derived from it are contingent on her relations with the heir. Such insecure claims makes Tanzanian women highly vulnerable to dispossession of land upon the death of their husband or separation (Badstue et al., 2021; Dancer, 2017; Schindwein et al., 2020).

Another impediment to women’s empowerment in the household in the Tanzanian context is the still widely practiced custom of paying a bride price to the bride’s parents (United Republic of Tanzania, 2017). It reduces women’s bargaining power vis-a-vis their husbands as it withholds women from ending the relationship since the parents would be expected to pay back

the bride price. While originally a gift to the bride's parents, it risks becoming an unstated legally binding contract that the bride 'belongs' to the groom and his family from then onwards. Another custom that may negatively influence women's bargaining power in the household is polygyny, which is practiced in about 25 percent of households in rural Tanzania including in the study area (Lawson et al., 2015), and even the husband's threat of entering a relationship with a second spouse (Cudeville et al., 2017).

While there is some variation across areas in Tanzania, there are no substantial differences in the prevalence and sources of structural gender inequalities and social norms defining gendered roles and access to resources in our study area of Mbeya rural and Mbozi districts as compared to other agricultural communities in Tanzania. There are a multitude of different Christian and protestant churches in our study area and roughly one quarter of the population is Muslim.

3.2. The intervention

This study concentrates on monogamous smallholder coffee farming households spread across Mbeya rural and Mbozi districts in southwest Tanzania who are members of 95 different producer organisations (POs) linked to the Hanns R. Neumann Stiftung (HRNS), a German non-profit foundation.

Agricultural production on household farms typically includes food crops for household consumption, mostly maize and cassava, of which excess harvests are sold, as well as crops for marketing, particularly coffee. Selling coffee is the main income source for the smallholder coffee farming households. This income is used to pay for children's school fees and for large household expenditures such as, for instance, house renovation, purchase of land or a motorcycle. As mentioned, the sale of excess harvests of food crops such as beans or maize can be an additional but smaller income source, sometimes specifically for women if these were grown on plots they managed. Other off-farm income sources include (petty) trade, transport (mainly for men), food stalls and crafts (mainly for women). Farm land is under husband's ownership in most cases, as a women typically marries into the community where her husband owns land. Chicken, goats and cattle are the most commonly owned livestock. While it is common for women to personally own some chicken or goats, cattle are usually family owned since it involves a high capital investment. Both men and women provide labour to household farm production. In our study population, on average, men spend in total about 5.5 hours in a day on farming activities like preparing the field, weeding, taking care of coffee and other crops, harvesting coffee, maize or cassava, and post-harvest activities related to coffee and maize, women about 4.5 hours. Women, who participated in our qualitative interviews, reported they do not only provide labour for food crop production but contribute almost as much labour as their husbands to coffee production.

The agricultural POs linked to HRNS are mixed-gender and include between 25 up to 75 members. They originate from loosely organised (coffee) farmer groups or join farmers from the same (sub-)village. Hence members of the same PO live in proximity. POs generally require payment of a member fee and abide by by-laws. Standard interventions organised by HRNS for the POs and their members include farmer field schools, training in applying sustainable agronomic intensification practices, climate change mitigation, good post-harvest practice for coffee, and joint marketing of coffee. The POs do not provide microfinance services.

We concentrate on the Gender Household Approach (GHA) implemented by HRNS for the members of its POs in selected areas. The GHA promotes farm and coffee production as a family business where all household members contribute and benefit equally. The GHA addresses gender inequalities and challenges to collective action within households to facilitate more efficiently and more equitably managed coffee farming households.

The GHA starts with couple seminars organised for POs as an initial awareness raising activity. During a half-day couple seminar session, the HRNS gender officer guides a group of couples through a self-assessment of the division of roles, responsibilities, and household resources

in their households with the help of activity profiles and control over resources matrices. A group discussion enhances awareness of gender imbalances and lack of cooperation between spouses and motivates couples to introduce changes, for instance, by collaborating more as a couple and sharing resources and household farm income more equally between spouses.

Subsequently, a selection of couples who participated in a couple seminar pursues the intensive coaching package introducing participatory intrahousehold decision making. First, in a one-day seminar, couples are coached in small groups by the HRNS gender officer on how to make their intrahousehold decision making more participatory, how to set a common goal, and share household resources and responsibilities in a more (gender) equitable way. A household farm plan and budget, where each couple lists their anticipated income, necessary expenditures for farm and household, and planned incremental investments to reach their common goals, is an essential communication tool. Then, the HRNS gender officer conducts a private home visit to each couple for follow-up. A subsequent women's leadership training strengthens women's leadership skills in groups and the household. In a last half-day workshop, couples share experiences in small groups and self-evaluate the coaching program and their progress.

4. METHODS

We adopt a mixed methods approach, more particularly a sequential explanatory design (Ivankova et al., 2006), to assess the impact of introducing participatory intrahousehold decision making on women's empowerment. The reasons are not only methodological, but, importantly, are also grounded in a conceptualisation of women's empowerment as being inherently subjective (Kabeer, 1999, 2005). With the qualitative component we include the meaning and value women themselves give to their process of empowerment.

4.1. Quantitative methods for the assessment of impact

4.1.1. Identification strategy

The intensive coaching package through which participatory intrahousehold decision making was introduced in smallholder coffee farming households was implemented as a randomised control trial (RCT) with an encouragement design. The encouragement itself consisted of a personal phone call and a printed personalised invitation for the first activity, accompanied by a folder with a notebook and two pens, and a second chance to participate if the couple missed an activity.

Out of the couples who participated in couple seminars, we used random number generation to randomly assign couples to be encouraged to take up the intensive coaching package, labelled the *intensively coached group (T)* (N=147), and couples to not be encouraged, who remained a *control group of couples who received a couple seminar* (Table 1 for sample sizes). In one sub-group of the latter couples could have experienced spillovers from interaction with intensively coached couples of the same PO. We label this the sub-group who *received couple seminars with potential spillovers (CA)* (N=143). Another sub-group consists of couples who *received a couple seminar but who were not exposed to spillovers (CB)* (N=53) because we avoided the presence of intensively coached couples in the POs by delaying that intervention until after endline. Ten couples in the intensively coached group did not comply with their encouragement status, 12 couples from the group with couple seminars with potential spillovers did not comply with non-encouragement.

Note that we randomised encouragement to intensive coaching disregarding whether couples were in monogamous or polygynous relationships, oversampling by 25 percent, the expected proportion of polygynous households in the study area. Couples in polygynous relationships therefore were included in the GHA interventions but we excluded them from the analysis in this study since the intrahousehold dynamics such as division of labour, access to and control over

resources, and decision-making power are different in polygynous families. Studying differential impact in monogamous and polygynous households is beyond the scope of this paper.

Table 1 Sample sizes

	<i>GHA intervention activities</i>	<i>Sample size</i>	Non-compliers with encouragement status
Intensively coached group (T)	-One-day coaching seminar in participatory intrahousehold decision making -Follow-up home visit by gender officer -Women's leadership training -Half-day feedback and evaluation workshop	147	10
Group who received couple seminars with potential spillovers (CA)	-Half-day couple seminar with self-assessment and group discussion about intrahousehold division of roles and resources -Potential spillovers from interaction with intensively coached couples	143	12
Group who received couple seminars not exposed to spillovers (CB)	-Half-day couple seminar with self-assessment and group discussion about intrahousehold division of roles and resources	53	/
Control group without Gender Household Approach exposure (CC)	-No GHA intervention activities	56	/
All		399	

A final control *group without GHA exposure (CC)* (N=56), is composed of (monogamous) couples in coffee farming households randomly selected among member lists of POs across Mbeya rural and Mbozi districts where HRNS did not implement its GHA (using random number generation). We can safely assume households are not fundamentally different or live in other circumstances, and are far enough to avoid spillovers from any GHA activity.

There was random attrition of seven couples due to no consent, divorce, death, or relocation. Random encouragement achieved balance on most baseline characteristics across T and CA, as well as across T and CB ([Table A in Online Supplementary Materials \(OSM\) for tests of balance in baseline characteristics](#)). Balance is also achieved on most baseline characteristics across CA and CC and across CB and CC (Table A in OSM).

The *impact of the intensive coaching program* is estimated based on a comparison of *T versus CA*, respectively *T versus CB*. For each comparison, we estimated instrumental variable (IV) regressions using two-step generalised method of moments (GMM). We used the randomised encouragement status as an exogenous IV for the endogenous treatment status, which is a strong instrument as is evident from the first stage regression results in Table C in OSM. This identification strategy implies we estimated local average treatment effects which are externally valid for compliers.

We additionally used propensity score matching (PSM) with inverse probability of treatment weighting to control for remaining (observable) baseline imbalance and for initial conducive elements for women's empowerment (Lecoutere & Wuyts, 2020). [Table B in OSM](#) lists covariates included for each comparison, Table A in OSM reports balance after PSM.

The *impact of couple seminars* is estimated based on a comparison of *CA versus CC* (disregarding non-complying couples in CA), respectively *CB versus CC*. We used simple regression analysis combined with PSM to absorb potential selection bias linked to non-randomisation of attendance to couple seminars and the fact that couples without GHA exposure did not initially self-select into a couple seminar. Covariates included in PSM also control for initial conducive elements for women's empowerment (listed in Table B in OSM, balance after PSM in Table A).

4.1.2. Data and indicators

The RCT and baseline data collection started in December 2016. Endline data was collected from March until May 2018. Base- and endline interviews were done in approximately the same order with on average one year between interviews. Individual surveys were conducted separately with each of the spouses. Both male and female enumerators conducted the interviews, all of them spoke the local language.

Women's empowerment is operationalised as enhanced individual and joint decision making and resource access (Johnson et al., 2016; H. Malapit et al., 2019). This aligns with women's own perspectives on empowerment (*Inf.*) and fits evaluating methodologies that address gender relations within households.

Quantitative data were collected through individual surveys which were conducted separately with the wife and the husband in selected couples. Outcome indicators are based on women's answers to the surveys. For some indicators, transparency over coffee income for instance, the calculation takes into account both wife's and husband's reported amount. Furthermore, as a robustness check, we also estimate impact on outcome indicators based on agreement by spouses or averages of their reported amounts. As such, we account for gender differences in perception and reporting of men's and women's individual and joint decision making in individual surveys (Acosta et al., 2020; Ambler et al., 2021).

A first indicator for *women's access to household resources* is the share of household tropical livestock units (TLU)¹ personally or jointly owned by the wife (*Share TLU*).² A second indicator takes the value of one if the wife personally earned any income from off-farm activities in the three months prior to the endline (*Personal income*). A third indicator is the share of total household income from selling coffee in which the wife was involved - personally or jointly - in sales transactions (*Share coffee income*). The total household income from selling coffee is the sum of the amount of coffee income the wife reported to have received herself, plus the amount she reported to have received jointly with her husband, or jointly with someone else, plus the amount she reported her husband received by himself. The share in which the wife is involved in coffee sales transactions is the sum of the amounts received by herself or jointly over the total coffee income.³ We use the ratio of wife-reported versus husband-reported total household coffee income as an indicator of *Transparency*, assuming greater transparency if wife and husband report approximately similar amounts.

Spousal differences in investments in household commons through *time use* is measured by the difference in proportion of work time⁴ wife and husband reported to allocate to reproductive and domestic tasks (*Time*).

A first indicator of *women's agency* is women's involvement in strategic farm decisions. These include decisions about major expenditures, investments, adoption of agronomic practices for coffee, and expenditures for agricultural inputs and labour in the three months prior to endline.⁵ The indicator is the percentage out of those four (sets of) decisions in which women were involved (based on reports of having made the respective decision alone or jointly with husband or other household member) (*Involvement farm decisions*).⁶ A second indicator, the percentage out of four household-related expenditure decisions in which women were involved, captures women's involvement in strategic household decisions (*Involvement household decisions*).⁷ These decisions concern expenditures for school fees and children necessities, medical, for social events, and sending remittances.

[1] Based on cattle and small livestock, excluding poultry.

[2] *Share TLU A*: based on averages reported by husband and wife

[3] *Share coffee income A*: Indicator of share of total household income from selling coffee in which the wife was involved - personally or jointly - in sales transactions based on averages reported by husband and wife.

[4] Work time is the sum of time allocated to different productive, reproductive and domestic activities.

[5] If no expenditure was made, women are considered involved in deciding if they feel they could personally make such decision to large or medium extent.

[6] *Involvement farm decisions A*: based on agreed accounts by husband and wife

[7] *Involvement household decisions A*: based on agreed accounts by husband and wife



Finally, achievements in terms of *household welfare* are captured by women's perceptions that the household improved its (economic) wellbeing and/or food security situation as compared to a year before (*Improved welfare*).⁸

Table 2 presents descriptive statistics of outcome indicators in (unmatched) randomly assigned groups measured at endline.

As we test impact on families of outcomes, we adjusted p-values for multiple hypotheses testing applying the method by Sankoh et al. (1997).⁹

[8] *Improved welfare A*: based on agreed perceptions by husband and wife

[9] When adjusting p-values of estimates we take into account testing of seven hypotheses (including once *Share coffee income* and once *Transparency* which are both a function of woman reported coffee income) while correcting for correlation between outcomes in the family of which hypotheses are not tested. In case of indicators based on spouses' agreement or averages, p-value adjustment accounts for testing five hypotheses. Correlation coefficients in Table D in OSM.

Table 2 Descriptive statistics of outcome indicators at endline

	Involvement farm decisions	Involvement farm decisions A	Involvement household decisions	Involvement household decisions A	Share TLU	Share TLU A	Personal income	Share coffee income	Share coffee income A	Transparency	Time	Improved welfare	Improved welfare A
Intensively coached group (T)													
Mean proportion or ratio;	0.912	0.806	0.857	0.752	0.207	0.461	0.061	0.836	0.937	0.869	0.246	0.279	0.190
Percentage													
Standard deviation (S.D.)	0.170	0.239	0.211	0.264	0.385	0.228	0.241	0.372	0.189	0.431	0.248	0.450	0.394
N	147	147	147	147	115	119	147	122	119	118	147	147	147
Group who received couple seminars with potential spillovers (CA)													
Mean proportion or ratio;	0.921	0.816	0.867	0.769	0.240	0.489	0.063	0.812	0.953	1.100	0.268	0.287	0.204
Percentage													
S.D.	0.147	0.208	0.199	0.241	0.398	0.219	0.244	0.392	0.189	1.720	0.213	0.454	0.405
N	143	143	143	143	119	123	143	117	116	113	143	143	142
Group who received couple seminars not exposed to spillovers (CB)													
Mean proportion or ratio;	0.717	0.594	0.802	0.675	0.294	0.380	0.151	0.551	0.633	0.544	0.254	0.250	0.157
Percentage													
S.D.	0.260	0.287	0.327	0.342	0.388	0.284	0.361	0.503	0.390	0.447	0.154	0.437	0.367
N	53	53	53	53	37	38	53	49	48	45	52	52	51
Control group without Gender Household Approach exposure (CC)													
Mean proportion or ratio;	0.786	0.670	0.857	0.754	0.110	0.340	0.179	0.660	0.777	0.776	0.365	0.268	0.232
Percentage													
S.D.	0.284	0.282	0.233	0.250	0.268	0.227	0.386	0.479	0.376	0.767	0.215	0.447	0.426
N	56	56	56	56	47	48	56	47	46	44	56	56	56
All													
Mean proportion or ratio;	0.872	0.763	0.853	0.748	0.215	0.444	0.090	0.761	0.876	0.892	0.272	0.276	0.197
Percentage													
S.D.	0.210	0.255	0.229	0.267	0.378	0.237	0.287	0.427	0.283	1.117	0.223	0.448	0.398
N	399	399	399	399	318	328	399	335	329	320	398	398	396

Share TLU = Share of household tropical livestock units (TLU) (excluding poultry) the wife reported to personally or jointly own (*Share TLU A* = based on averages of husband and wife reports). *Personal income* = Indicator taking the value one if the wife reported she personally earned any income from off-farm activities, fishing, sales of livestock and/or remittances in three months prior to endline. *Share coffee income* = Share of total household income from selling coffee in which the wife was involved, personally or jointly with her husband, in sales transaction including receiving money (*Share coffee income A* = based on averages of reported by husband and wife). *Transparency* = Ratio of wife versus husband reported total household coffee income as an indicator of transparency. *Time* = Difference in proportion of total work time wife and husband reported to allocate to tasks in reproductive and domestic sphere. *Involvement farm decisions* = Percentage out of four types of strategic farm decisions in which the wife was involved, personally or jointly with her husband or another household member, based on women's accounts (*Involvement farm decisions A* = based on husband and wife agreeing upon wife's involvement). *Involvement household decisions* = Percentage out of four types of strategic household decisions in which the wife was involved, personally or jointly with her husband or another household member, based on women's accounts (*Involvement household decisions A* = based on husband and wife agreeing upon wife's involvement). *Improved welfare* = Indicator taking the value one if wife believes that the household has improved its (economic) wellbeing and/or food security situation as compared to a year before (*Improved welfare A* = based on husband and wife agreeing upon improved wellbeing and/or food security).

4.2. Qualitative methods

To add depth to the quantitative analysis and assess impact on subjective dimensions of women's empowerment, we bring in the perspectives of Tanzanian women on their valued and prioritised aspects of empowerment and their process of empowerment with original qualitative data. This data was collected through in-depth individual interviews with 24 women across treatment group T and control groups CA and CC across Mbeya rural and Mbozi districts over a period of nine days in July 2018. To ensure variation, we purposively sampled women with high and low aggregate empowerment scores from the treatment and control groups. The aggregate empowerment score is the unweighted average time evolution from baseline to endline of quantitative measures of women's empowerment (of cases with less than 50 percent missing data).

Prior to in-depth qualitative interviews, we conducted a focus group discussion with three HRNS gender officers who implemented the intervention and who are knowledgeable about women's role and position in the context of Mbeya rural and Mbozi districts. This enabled a rich understanding of the formal and informal context and informed possible impact pathways towards women's empowerment in this context.

During the in-depth qualitative interviews, we used a semi-structured interview guide that included scoring exercises to capture women's perspectives of the ways and the extent to which they can exercise voice in various decisions of strategic importance for their household and their access to and control over resources. We operationalised voice by one's perceived weight in the final decision. Using the same scoring exercises, we inquired about changes over time in the extent of exercising voice and accessing resources and a comparison to other women in their community. By asking to score the ideal situation in their eyes, we captured what women themselves image as valued alternatives. We each time followed up with open-ended questions.

We inquired about different domains of women's empowerment specifically important in the context of coffee farming households in sub-Saharan Africa. The domains included women's voice in decisions about major strategic household expenditures, cash and food crop production, application of recommended agronomic practices for coffee production, sale of cattle and livestock, and use of income from coffee, in addition to women's ownership of cattle and livestock, intrahousehold transparency over coffee income, and the way in which reproductive and domestic tasks are shared between spouses.

Even though the sample size is small, at the end of the qualitative inquiry, we felt to have reached theoretical saturation. This means that our story line was established, and our qualitative data was sufficient to support the theoretical background. Data saturation has been achieved as well since very little new information was gained beyond the 20th interview. Across our qualitative data, approximately 80 percent of all insights were identified within the first 12 interviews. We reduced the risks of confirmation bias by having the researcher, who did not carry out the RCT and quantitative data collection, conduct the qualitative data collection. By clearly stating to the interview participants that our inquiries were independent of HRNS, we reduced risks of socially desirable responses whereby participants tried to conform to HRNS' expectations.

As researchers in development studies from a non-sub-Saharan African background, we may have brought our owned values and perspectives into the inquiry process. We took several precautions to safeguard objectivity in our qualitative data collection, and to avoid that our pre-conceived ideas would impact the way we (chose to) perceive things. Our questions were designed such that we first inquired about facts, for instance about recent events in women's lives, after which we asked for women's perceptions and interpretations. We avoided leading questions. We consciously tried to remain neutral and objective during interviews by avoiding leading words, assumptions, or jumping to conclusions so as not to influence the participants' responses. To reduce the risk of subjectivity in qualitative data analysis and to uncover any deeper meaning in the data, each of the researchers first conducted qualitative data analysis separately after which we combined our insights and reviewed the interpretation together.

4.3. Mixed method analysis

Our mixed method approach consisted of an analysis of the qualitative data to understand women’s sense of agency and what aspects women value and prioritise in a process of empowerment in their households (Section 5.1.). Next, we discerned patterns of pathways of empowerment through a screening of women’s full stories of lived experiences in terms of decision-making power and access to resources in their households (Section 5.2.). We quantitatively assessed the impact of the introduction of participatory intrahousehold decision making on women’s empowerment (Section 5.3.) and reflected on how the observed impact aligns with the meaning and value that women themselves assign to particular dimensions and with specific pathways of empowerment (Section 5.4.). As such, we capture impact on subjective aspects of empowerment.

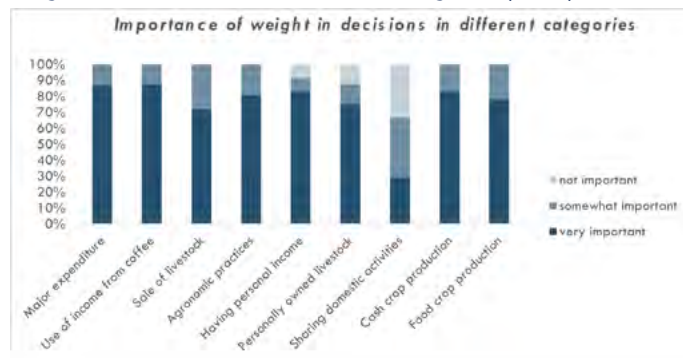
5. RESULTS

5.1. Women’s empowerment in women’s perspectives

This section investigates the value women assign to different domains of empowerment, based on the scoring exercises in the qualitative inquiry, and explores women’s reasoning for the choices they made.

As illustrated in Figure 1, significant voice in most types of decisions - proxied by a women’s perception of her weight in final decisions - and access to resources appear to be highly valued by all women interviewed. There is less consensus over the importance of sharing domestic responsibilities.

Figure 1 Percentage of women who assign high, some, or no importance to having significant weight in final decisions in different categories (N=24)



Asked about their motivation to assign high importance to exercising voice, two-third of women respondents explained they wish to be involved in decisions for the sake of the wellbeing of their households, particularly in decisions about major expenditures and the use of coffee income. In the eyes of some women, occasionally “some decisions made by my husband are not good so I need to stay at this level [of having a strong voice in final decisions about major expenditures]”, and, besides, “I see the benefit and high level of wellbeing when we decide together” (T6_Itumpi). Other women explain “It is our family norm that we need to decide these issues [of major expenditures and use of coffee income] together [...] It is good for the wellbeing of our family. I can see that other family don’t have the development we are having now” (CC16_Ruanda). Women value having a significant weight in control over coffee income, together with their husbands, since it is “the main source of income” and women fear that their husbands will “buy things that are not important for the family, [...] waste money on nonsense or get another wife” (CA7_Itumpi). These statements illustrate that most respondents see their household’s wellbeing as a priority and consider their contributions to household farming important for their households rather than for themselves.

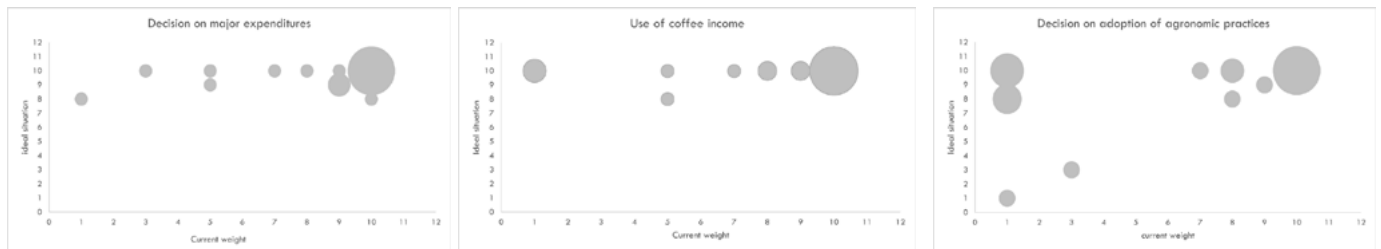
More than 80 percent of women respondents reported a strong wish to have personal income. In women's perspectives, this is important to be able to "cover minor expenses" or to be "independent from one's husband" because, "sometimes, [when] I go to market, I find something I want to buy. But I cannot come back to the house to ask money from my husband" (CA18_Isuto). Three women mentioned that having a source of personal income is crucial to support their husbands in difficult times, for instance, when their husband's business is not running well.

Some women value significant voice and an equal say in final decisions in domains to which they contribute labour, such as cash crop (coffee) production. One third of respondents feel they deserve to have a say in how the coffee income is used since they provide equal amounts of labour to coffee farming as their husbands. "We are doing things equally on the coffee farm but when it comes to money, the husband decides. That is unfair. I want to have a voice on how they money should be used" (CA22_Utengule). This shows a sense of consciousness and women's willingness to challenge and reshape relations with their husbands.

Domestic activities seem to be almost exclusively done by women. In one respondent's words: "He [husband] doesn't do anything. Very few times, when I get sick, he helps with [collecting] firewood" (CC14_Ruanda). Seventy percent of women respondents explain that they feel bad when their husbands engage in housework because "it is not what husband is supposed to do" (CA5_Itumpi). The identity of a woman is portrayed as to depend on one's ability to manage household affairs. The identity of a man seems to exclude a role in housework. Women indicate that jealousy and judgmental attitudes of community members are important barriers to sharing domestic responsibilities because "the community will laugh at us" (CC11_Itentula). Women whose husband does some domestic work say: "Most other women are jealous with me. They think I am controlling my husbands." (T1_Isansa). "Other men and women think I am a ghost [witch]" (CC14_Ruanda). Hence, sharing domestic chores is mediated by the presence of deep social norms and patriarchal practices that are internalised and reconfirmed by both men and women.

Next, to gain insights into the way in which women's reality answers to their perceptions of an ideal situation, we bring together women's current situation in terms of voice in final decisions in domains that most women assign as crucially important and their perceptions of the ideal situation. As illustrated in Figure 2, major expenditure decisions appear to be a domain in which, most women aspire significant voice in an ideal situation, and in which, quite a number of women feel they can exercise voice. When it comes to decision making over the use of coffee income, most women ideally wish to have a significant say in final decisions. Yet, only about two-third of respondents reported to have significant voice in such decisions. In term of adoption of agronomic practices for coffee production, despite the fact that over 80 percent of respondents perceive it ideal to have significant voice in such decisions, only about 50 percent of respondents report to have little say in this domain in the current situation.

Figure 2 Women’s perceived current (x-axis) and ideal (y-axis) extent of weight in final decisions regarding major expenditures, adoption of agronomic practices for coffee production, and use of coffee income (N=24)



5.2. Women’s perspectives of their process towards empowerment?

While women’s lived experiences are diverse, 80 percent of respondents to our qualitative inquiry refer to a patriarchal mentality as a key challenge to their journey towards greater decision-making power in their households. “The biggest challenge [...] is the social norm” (T2_Isansa), “[the] mentality of men [that men are superior to women and that] men don’t want women to have more voice because they are afraid that women will control the family” (CA4_Itumpi). Even in households where women describe a cooperative relationship with their husbands and reported considerable voice over many decisions, women state: “I want my husband to consider my voice [regarding major expenditures], but my husband is the head of the family so I prefer him to have more weight [in such decisions] than I do” (T1_Isansa). “I am a wife, [my] husband is still a husband. I should not have the same power as him [regarding agricultural decisions]” (T2_Isansa). Lecoutere and Wuyts (2020) labelled such barriers to women’s decision-making power and their empowerment within the household formed by patriarchal norms and customs a “wall of patriarchy”.

When describing how to overcome the challenge of a restrictive patriarchal mentality, women mentioned factors largely outside of their control. It is said one has to be “simply lucky” (T1_Isansa, CC11_Itentula). Some respondents explained: “He [husband] grew up in an educated environment and he is flexible. I feel lucky” (T1_Isansa). “My husband is a priest and he grew up in a church family” (CC16_Ruanda). Another woman sees a possibility to stay involved in strategic decisions if “my father-in-law is on my side and keeps advising my husband” (CA22_Utengule). This suggests women’s decision-making power is conditional on being fortunate to have married a cooperative husband who is raised in an environment in which women’s voice is considered or getting support from parents-in-law. In some cases, women refer to external influences that made their husband more open to their empowerment in the household, for instance, through the HRNS couple seminars and intensive coaching, through church, or because the husband divorced his ‘second’ wife.

In Uganda, Lecoutere and Wuyts (2020) observed that for women who are in a relationship with a husband who does not abide too rigidly with prevailing patriarchal norms and customs regarding intrahousehold resource access and decision making there is scope for women to follow a pathway towards empowerment of gaining resource access and decision-making power. They labelled this a pathway of “breaking through the wall of patriarchy”. Some women describe they had voice in some domains “since we got married” (CA5_Itumpi). Other women describe they gained voice over the course of long marriage with children as the couple “[came to] understand and trust each other” (CA8_Itumpi), or women explain they “became braver [over the course of marriage]” (CC13_itentula). Based on their accounts, we estimate that somewhat more than 40 percent of our women respondents find themselves in such situation.

Some women described a pathway towards empowerment by enhancing their human capital, a pathway which we labelled “challenging the wall of patriarchy with knowledge”. As

was highlighted by about two thirds of respondents, a lack of knowledge on coffee production is the biggest constraint to their involvement in decisions about applying good agronomic (coffee) practices. Men tend to depict women as people who “do not know anything about coffee” (CC14_Ruanda) and who “cannot raise any good ideas about coffee” (CC12_Itentula). About 20 percent of our women respondents, however, explained that because they “have the knowledge about coffee farming” (T6_Itumpi), have “experience in taking care of cattle and small livestock since [they were] at [their] mother’s house” (CC13_Itentula), or are “good at planning” (T19_Isuto), their “husband[s] always listen to [their] advice” (T6_Itumpi) and they have decision-making power in these domains. In half of the cases, this is associated with decision-making power over the use of household income and other strategic decisions as well.

Some of our respondents emphasised that participating in training about coffee farming organised by HRNS through the POs has been of crucial importance to gain voice in coffee production. Now, “he [husband] comes to me and asks what we should do, when we should use fertiliser” (CA4_Itumpi). Women also feel “more confident and valued by husbands” (CA7_Itumpi; CC14_Ruanda). One woman explained that since she “went to agriculture seminars [...] My husband now values my advice” (CA7_Itumpi). She additionally gained decision making and control over the household coffee income “because of my reaction [...] My husband did not listen to me [about the use of coffee income] and I did not feel good. I kept quiet and did not say anything to him. My husband didn’t like it and he changed.” (CA7_Itumpi). This suggests that a woman’s level of knowledge and her knowledge relative to her husband’s knowledge can be used as leverage for her bargaining power.

Somewhat less than 40 percent of the women respondents are on a pathway that we label “circumventing the wall of patriarchy” in analogy with Lecoutere and Wuyts (2020). Women on this pathway towards empowerment cannot count on cooperation and goodwill of their husbands to effectively involve them in strategic decision making about household and farm affairs. Women’s involvement in decision making can be none “My husband decides everything. [He] does not listen to me at all” (CC9_Itentula), passive “My husband informed me and I accepted. [...] That is how it is in my family.” (CA23_Utengule), or minimal “Decisions are made by my husband in the end but we discuss and he gets me involved” (T24_Utengule). Reliability on the part of the husband is an issue in some households: “Sometimes when I am not around, my husband takes money and calls me to inform that he is using it for some things but I don’t believe it is the exact amount he used” (CA18_Isuto). Some women are informed about the amount of income earned by selling coffee “but I don’t believe it is the exact amount” (CC22_Utengule). In about half of these cases, women describe a difficult relationship with their husbands, for instance, an extra-marital relationship, bad influence, or alcoholism: “Previously, we discussed and decided together. Since [my] husband brought the other wife, the situation is worse. He does not listen to me” (CC15_Ruanda). “Other men [who adhere to the prevailing customs of denying women any voice] have badly influenced my husband” (CC17_Ruanda). “I don’t see any possibility [of regaining involvement in decisions and income use], unless my husband divorces the other wife, goes to church again, [and] stops drinking” (CC9_Itentula).

A few women in this pathway tried to challenge their status-quo and react to it. Some women respondents described their strategies to try to enhance their voices in strategic household decisions. One woman explained that, being upset about her husband making decisions about major expenditures without consulting her and not sharing income from coffee with her, “I reported his behaviour to my father-in-law”, who “when we got married, said we were family and needed to decide things together”, “and my husband changed” (CA22_Utengule). In an extreme case, a woman explained that, after the death of his father, her husband changed his attitude, became less trustworthy, and she lost voice: “I was so upset that I wanted to break up and started processing documents [for divorce..] We did the experiment together [for collecting data about intrahousehold cooperation] and my husband heard [what I said] to people there and changed [a little]” (CC10_Itentula). Apart from an ability to renegotiate their relationship with their hus-

bands, women's consciousness about ways to gain empowerment in their household is critical. Some women lack such consciousness and cannot imagine strategies to renegotiate greater voice and cooperation in their households. "[Change] is impossible [...] It is how he is on this issue. He will decide" (CA23_Utengule).

While theory states that personal income, as an outside option, contributes to women's bargaining power, nearly all respondents explained that having more personal income is crucially important for them to be able to take some (minor) expenditure decisions independently from their husband: "I don't feel good asking my husband for everything" (CA3_Isansa). Women also deem it extremely important to manage their household "Because I have to take care of minor things in the family" (CA5_Itumpi), or "I want to help my son and my grandchildren" (CA8_Itumpi). It is striking that all women in a pathway of "circumventing the wall of patriarchy" have some source of personal income. Some women explain: "[Personal income] is very important because I can't depend on my husband" (CC9_Itentula), "My husband can go away anytime" (CC10_Itentula). This is in line with lived experiences of women on this pathway in Uganda where women keep control over some resources to strengthen their independence within the household (Lecoutere & Wuyts, 2020). All but one of the women in the "challenging the wall of patriarchy with knowledge" pathway has a source of personal income, but only half of the women in the pathway of "breaking through the wall of patriarchy". One of the women without personal income in the latter pathway stated: "It is not important because we are doing everything together" (T20_Isuto). Regardless of their pathway towards empowerment, women expressed feeling valued if they use personal income to contribute to their household's wellbeing or help out their husbands. One woman explained: "He [husband] had a problem with coffee farming and [his] income was very low. He came to me for [financial] help [...] So it is very important for me to have personal income to take care of my family and sometimes help my husband in his difficult times". She feels that women are then "valued by husbands" (T6_Itumpi).

5.3. Estimated impact of participatory intrahousehold decision making on different domains of women's empowerment

In this section we present the results of the quantitative assessment of the impact of introducing participatory intrahousehold decision making on different aspects of women's empowerment in their households.

5.3.1. Women's access to household resources, transparency over income, time allocation

The results, presented in Table 3, do not show any statistically significant effect of the intensive coaching versus only couple seminar, with or without spillovers, on women's access to household livestock nor on the likelihood of earning a personal income (Panels A and B Columns 1 and 3).¹⁰ As compared to no exposure to the GHA, couple seminars with potential spillovers had a statistically significant positive effect on the indicator of women's access to household livestock based on husbands' and wives' averages (Panel C Column 2).¹¹ The effect amounts to a 44.1 percent increase vis-a-vis the 0.340 TLU women have access to in the control group without GHA exposure (Table 2).

Intensive coaching significantly increased the proportion of household coffee income in which women were involved in sales transactions with 35.1 percentage points (pp) vis-a-vis the group who received only couple seminars without spillovers, where that proportion is 55.1 (Table 3 Panel B Column 4) (confirmed in the indicator based on averages of husband and wife reports).

[10] Ex-post minimum detectable effect sizes (MDES) calculated on the basis of estimated standard errors are included in Tables F and G OSM. These demonstrate there are limited instances where insufficient statistical power could have been a reason for insignificant effects. The few exceptions where MDES is larger than what is commonly considered small effect size (0.2) include effect of T vs CA, CA vs CC, and CB vs CC on Transparency; effect of T vs CB and CB vs CC on Share coffee income; and effect of T vs CB on Share TLU.

[11] The effect on the indicator based on women's reports has a similar sign and magnitude but is significant only at 12 percent (Table 3 Panel C Column 1).

Intensive coaching versus couple seminars without spillovers significantly increased transparency over household coffee income between husband and wife as well (Panel B Column 6).

There are indications that couple seminars, with and without potential spillovers, reduced the spousal difference in the share of work time allocated to reproductive and domestic tasks (Panel C and D Column 7) with about 10 pp vis-a-vis no GHA exposure, where wives allocate 36.5 percent more of their work time to reproductive and domestic tasks than husbands. Estimated effects are statistically significant only at respectively 12 and 11 percent (after controlling for multiple hypotheses testing).

Table 3 Estimates of average treatment effects (β_x) on women's access to assets and income and on time allocation

		(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Share TLU	Share TLU A	Personal income	Share coffee income	Share coffee income A	Transparency	Time
Panel A								
T vs CA	β_x	-0.033	-0.035	0.009	0.021	-0.030	-0.230	-0.031
	S.E.	(0.063)	(0.035)	(0.036)	(0.060)	(0.029)	(0.179)	(0.033)
	p	0.602	0.322	0.801	0.727	0.298	0.198	0.349
	<i>p adj</i>	0.999	0.829	1.000	1.000	0.838	0.826	0.974
	N	232	240	288	238	234	230	288
Panel B								
T vs CB	β_x	-0.141	0.112	-0.086	0.351**	0.410***	0.344***	-0.001
	S.E.	(0.122)	(0.069)	(0.068)	(0.124)	(0.119)	(0.087)	(0.042)
	p	0.245	0.103	0.203	0.005	0.001	0.000	0.975
	<i>p adj</i>	0.837	0.325	0.766	0.034	0.005	0.000	1.000
	N	152	157	200	171	167	163	199
Panel C								
CA vs CC	β_x	0.125	0.150***	-0.122	0.130	0.149***	0.345	-0.090
	S.E.	(0.053)	(0.039)	(0.061)	(0.079)	(0.053)	(0.225)	(0.039)
	p	0.019	0.000	0.046	0.101	0.006	0.128	0.022
	<i>p adj</i>	0.123	0.000	0.262	0.550	0.026	0.642	0.123
	N	153	158	185	154	153	148	185
Panel D								
CB vs CC	β_x	0.198*	0.049	0.050	-0.048	-0.128	-0.191	-0.108
	S.E.	(0.081)	(0.061)	(0.089)	(0.105)	(0.079)	(0.147)	(0.046)
	p	0.016	0.422	0.574	0.650	0.110	0.197	0.022
	<i>p adj</i>	0.097	0.872	0.995	0.999	0.423	0.786	0.105
	N	84	86	109	96	94	89	108

Estimates of local average treatment effects (LATE) (β_x) based on second stage of IV regression using two-step GMM in case of T vs CA and T vs CB (Panel A and B) and estimates of average treatment effects using ordinary least square (OLS) regression in case of CA vs CC and CB vs CC (Panel C and D), with robust standard errors (S.E.) on matched samples using PSM. (See Table F Online Supplementary Materials (OSM) for complete results including the constant and test statistics)

Intensively coached group (Encouraged) (T), Group who received couple seminars with potential spillovers (CA), resp. not exposed to spillovers (CB), Control group without Gender Household Approach exposure (CC). p=p-value; p adj.=p-value adjusted for multiple hypotheses testing; *** significance at 99%, ** 95%, * 90% based on p adj.

Share TLU = Share of household tropical livestock units (TLU) (excluding poultry) the wife reported to personally or jointly own (*Share TLU A* = based on averages of husband and wife reports). *Personal income* = Indicator taking the value one if the wife reported she personally earned any income from off-farm activities, fishing, sales of livestock and/or remittances in three months prior to endline. *Share coffee income* = Share of total household income from selling coffee in which the wife was involved, personally or jointly with her husband, in sales transaction including receiving money (*Share coffee income A* = based on averages of reported by husband and wife). *Transparency* = Ratio of wife versus husband reported total household coffee income as an indicator of transparency. *Time* = Difference in proportion of total work time wife and husband reported to allocate to tasks in reproductive and domestic sphere.

5.3.2. Women's involvement in strategic decision making

Results in Table 4 show that the intensive coaching significantly increased the percentage of strategic farm decisions in which women were involved by 18.4 pp versus the group who received only couple seminars without spillovers, where this percentage is 71.7 (Panel B Column 1) (confirmed in the indicator based on wives and husbands agreed reports of women's involvement). Couple seminars with potential spillovers versus no GHA exposure had a statistically significant positive impact as well (Panel C Column 1) (confirmed in the indicator based on wives and husbands agreed reports). The percentage of strategic farm decisions in which women were involved, which was 78.6 in the group without GHA, increased with 14.5 pp.

There are no statistically significant effects of intensive coaching nor couple seminars (with and without spillovers) on women's involvement in strategic household decisions (Panels A-D Column 3).

Table 4 Estimates of average treatment effects (β_x) on women's involvement in strategic farm and household decisions and on improved household welfare

		(1)	(2)	(3)	(4)	(5)	(6)
		Involvement farm decisions	Involvement farm decisions A	Involvement household decisions	Involvement household decisions A	Improved welfare	Improved welfare A
Panel A							
T vs CA	β_x	-0.011	-0.017	-0.014	-0.023	-0.001	-0.011
	S.E.	(0.023)	(0.033)	(0.031)	(0.039)	(0.065)	(0.055)
	p	0.625	0.597	0.652	0.551	0.991	0.846
	<i>p adj</i>	1.000	0.994	1.000	0.985	1.000	0.999
	N	288	288	288	288	288	287
Panel B							
T vs CB	β_x	0.184***	0.223***	0.039	0.070	0.101	0.070
	S.E.	(0.053)	(0.046)	(0.056)	(0.059)	(0.080)	(0.068)
	p	0.001	0.000	0.490	0.236	0.205	0.304
	<i>p adj</i>	0.007	0.000	0.990	0.672	0.816	0.710
	N	200	200	200	200	199	198
Panel C							
CA vs CC	β_x	0.145***	0.156***	0.030	0.031	0.016	-0.031
	S.E.	(0.042)	(0.044)	(0.039)	(0.042)	(0.074)	(0.069)
	p	0.001	0.000	0.440	0.461	0.824	0.653
	<i>p adj</i>	0.008	0.000	0.984	0.926	1.000	0.975
	N	185	185	185	185	185	185
Panel D							
CB vs CC	β_x	-0.063	-0.095	-0.080	-0.102	-0.010	-0.073
	S.E.	(0.058)	(0.064)	(0.067)	(0.070)	(0.094)	(0.088)
	p	0.275	0.141	0.232	0.151	0.912	0.409
	<i>p adj</i>	0.889	0.545	0.812	0.522	1.000	0.873
	N	109	109	109	109	108	107

Estimates of local average treatment effects (LATE) (β_x) based on second stage of IV regression using two-step GMM in case of T vs CA and T vs CB (Panel A and B) and estimates of average treatment effects using ordinary least square (OLS) regression in case of CA vs CC and CB vs CC (Panel C and D), with robust standard errors (S.E.) on matched samples using PSM. (See Table G OSM for complete results including the constant and test statistics)

Intensively coached group (Encouraged) (T), Group who received couple seminars with potential spillovers (CA), resp. not exposed to spillovers (CB), Control group without Gender Household Approach exposure (CC). *p*=*p*-value; *p adj*=*p*-value adjusted for multiple hypotheses testing; *** significance at 99%, ** 95%, * 90% based on *p adj*.

Involvement farm decisions = Percentage out of four types of strategic farm decisions in which the wife was involved, personally or jointly with her husband or another household member, based on women's accounts (*Involvement farm decisions A*= based on husband and wife agreeing upon wife's involvement). *Involvement household decisions* = Percentage out of four types of strategic household decisions in which the wife was involved, personally or jointly with her husband or another household member, based on women's accounts (*Involvement household decisions A*= based on husband and wife agreeing upon wife's involvement). *Improved welfare* = Indicator taking the value one if wife believes that the household has improved its (economic) wellbeing and/or food security situation as compared to a year before (*Improved welfare A* = based on husband and wife agreeing upon improved wellbeing and/or food security).

5.3.3. Household welfare

Neither intensive coaching nor couple seminars (with and without spillovers) significantly affected the likelihood that the household improved its (economic) wellbeing and/or food security situation as compared to a year before (Table 4 Panel A-D Column 5).

5.3.4. Assessment of spillovers

While the intensive coaching versus couple seminars without spillovers and couple seminars with potential spillovers versus no GHA have positive effects on women’s involvement in farm decisions, there is no evidence of significant effects of intensive coaching when compared with couple seminars with potential spillovers. This suggests the presence of spillovers that reduced the difference between those with intensive coaching and couple seminars that are likely due to interaction between people who received couple seminars and the intensively coached, some of whom are members of the same POs. A formal estimation, based on a comparison of the group with couple seminars with potential spillovers and those without spillovers (Table E in OSM), indeed shows significant positive spillover effects.

5.4. The value and meaning of the impact of participatory intrahousehold decision making for empowerment in women’s perspective

In this section we assess how the quantitatively measured impact of introducing participatory intrahousehold decision making aligns with women’s perspectives of meaningful and valued aspects of their empowerment and fits into their pathways of empowerment (Table 5 gives an overview of quantitative impact results).

Table 5 Summary of results

Impact	Share TLU (A)	Personal income	Share coffee income (A)	Transparency	Time	Involvement farm decisions (A)	Involvement household decisions (A)	Improved welfare (A)
Intensive coaching	T vs CA							
	T vs CB		+	+		+		
Couple seminars	CA vs CC	(+)	(+)			+		
	CB vs CC	+						
	CC				- (which is empowering for women)			

Intensively coached group (Encouraged) (T), Group who received couple seminars with potential spillovers (CA), resp. not exposed to spillovers (CB), Control group without Gender Household Approach exposure (CC)

First, the positive impact of participatory intrahousehold decision making introduced through awareness-raising couple seminars on women’s access to household livestock responds to women’s preferences for having significant weight in final decisions over livestock and sales of household livestock. There is, however, no evidence that the intensive coaching in participatory intrahousehold decision making has additionally contributed to this valued aspect of empowerment.

Second, the positive impact of the intensive coaching on women’s involvement in transactions for earning coffee income answers to a strong wish expressed by women to be effectively involved in matters concerning this key cash crop and decisions about the use of coffee income. We can assume the increased transparency between spouses about total household coffee income caused by the intensive coaching is valued by women as well. Both effects are likely to be meaningful and highly valued by women since coffee is the main source of household income and because not all women fully trust their husbands will use it well and to the benefit of the household. These effects are likely to aid women on a pathway of “breaking through the wall of patriarchy” where there is scope for women’s involvement in strategic decisions and access to key resources such as coffee income. They may support women in a pathway of “challenging the wall of patriarchy with knowledge” who acquired some leverage to gain voice based on their knowledge.

Third, despite the importance that women assign to having and carrying a significant say over personal sources of income to be able to manage their households and make necessary minor expenditures independently from their husbands, neither couple seminars nor the intensive coaching significantly affected women's personal income from off-farm activities. Given the importance of personal income for women, if the intervention would have created the opportunity, women probably would have pursued increased access despite the intervention's emphasis on sharing household resources. Hence, the intervention probably was not effective to support women's desire for personal income for independent decisions, nor support it as a risk management strategy for women in a pathway of "circumventing the wall of patriarchy".

Fourth, in women's perspectives, a fairer share of time allocation on domestic and reproductive activities between wife and husband is less essential than their empowerment in other domains, which is potentially norm induced. Nevertheless, couple seminars reduced the gap between wife's and husband's proportion of time spent on domestic tasks. A woman clarifies: "He[husband] got advice from the gender officer during couple seminars and the household visit that he should help me because I also helped him on the farm. Then he started to help me with some work like cleaning and carrying water" (T24_Utengule).

Fifth, women highly value having a significant voice when it comes to strategic farm decisions. Some women feel they deserve effective involvement in such decisions since they provide an equal amount of agricultural labour as their husbands. As compared to couple seminars without spillovers, where it was already high (involvement in 71.7 percent of decisions), the intensive coaching further enhanced women's involvement in strategic farm decisions, which include decisions about major expenditures, investments, adoption of agronomic practices for coffee, and expenditures for agricultural inputs and labour. Couple seminars with potential spillovers versus no GHA had comparable impact. Hence, both the intensive coaching and couple seminars with spillovers are likely to support women in a pathway of "breaking through the wall of patriarchy" and in a pathway of "challenging the wall of patriarchy with knowledge".

Sixth, neither couple seminars nor intensive coaching significantly affected women's involvement in strategic household decisions, such as decisions about expenditures for school fees and children necessities, medical, for social events, and sending remittances. The absence of significant impact of couple seminars and intensive coaching could be due to the fact that women's involvement in strategic household decisions was already important in the respective control groups (women are involved in over 80 percent of such decisions). There may have been little room for further improvement.

Seventh, while ensuring their household's wellbeing is women's key goal, there is no evidence that the intensive coaching or couple seminars increased the likelihood that women perceive their household's wellbeing and/or food security situation to have improved over the course of the intervention period.

On a final note, we observed that couple seminars with potential spillovers versus no GHA had comparable positive impact as intensive coaching versus couple seminars without spillover on women's involvement in coffee income transactions and women's involvement in strategic farm decisions. This suggests spillovers, resulting from interaction by couple seminar couples with intensively coached couples in their POs, may have had a positive impact similar to the intensive coaching.¹²

[12] While the intensive coaching versus couple seminars without spillovers and couple seminars with potential spillovers versus no GHA have positive effects on women's involvement in farm decisions, there is no evidence of significant effects of intensive coaching when compared with couple seminars with potential spillovers. This suggests the presence of spillovers that reduced the difference between those with intensive coaching and couple seminars that are likely due to interaction between people who received couple seminars and the intensively coached, some of whom are member of the same POs. A formal estimation, based on a comparison of the group with couple seminars with potential spillovers and those without spillovers, indeed shows significant positive spillover effects (Table E in OSM).

6. DISCUSSION AND CONCLUSION

This study builds upon the idea that participatory decision making by spouses in households can be a strategy to transform power relations between the male and female co-heads and as such, contribute to women's empowerment in the household. It uses a rigorous mixed-method design combining quantitative experimental and qualitative methods to evaluate the effect of introducing participatory intrahousehold decision making on different domains of women's empowerment in monogamous coffee farming households in Tanzania. Through the qualitative component, the study captures more subjective, psychological aspects of women's empowerment and how the impact of participatory intrahousehold decision making answers to those.

The study's main results are that participatory intrahousehold decision making introduced through awareness-raising couple seminars and a subsequent intensive coaching program had a positive impact on women's empowerment in a number of strategic domains, some of which align with women's valued priorities and pathways of empowerment. Couple seminars catalysed women's involvement in ownership of household livestock, hence their access to resources. There is no evidence of impact on women's personal income, however. Yet, women highly value personal income for independently taking (minor) expenditure decisions for the household's wellbeing. It is also important as a risk management strategy for women on a pathway of "circumventing the wall of patriarchy", which refers to a situation where women have limited scope for exercising effective voice in their households because their husbands abide by prevailing patriarchal norms and customs. Intensive coaching increased women's involvement and transparency between spouses about transactions for earning coffee income and both couple seminars and intensive coaching increased women's involvement in strategic farm decisions. These effects align with women's priorities of effective decision-making power in these domains, especially regarding income from coffee as the main source of household income. These effects can aid women in a pathway of "breaking through the wall of patriarchy", a situation where a husband who does not abide rigidly to patriarchal norms provides leeway for women's empowerment. They possibly also back women on a pathway of "challenging the wall of patriarchy with knowledge" who gained leverage for bargaining power through a knowledge advantage. Awareness-raising couple seminars contributed to a fairer division of productive and reproductive labour among spouses, an important achievement of the intervention, even if not a key priority from women's perspective, and going against strong norms. There is no evidence of impact on women's involvement in strategic household decisions relating to children's education, medical and social expenses, which tends to be substantial in control groups as well. While an essential goal in women's eyes, households' wellbeing did not improve by the introduction of participatory intrahousehold decision making.

While a formal comparative analysis of the impact of the intervention introducing participatory intrahousehold decision making in Tanzania and the impact of the same intervention implemented in Uganda, assessed in Lecoutere and Wuyts (2020), falls out of the scope of this article, we compared which domains of women's empowerment have been impacted across contexts. In both the Tanzanian and Ugandan contexts, awareness raising couple seminars increased women's involvement in strategic farm decisions, and, in Tanzania, intensive coaching did so as well. Both in Uganda and Tanzania, women's involvement in selling and receiving household coffee income only increased through intensive coaching, suggesting this change needed that deeper engagement, possibly because it goes against deeply engrained norms and gender roles, and awareness raising was insufficient. In the Tanzanian study context, at the same time, transparency between spouses about coffee income improved with intensive coaching, which was not the case in Uganda. While important for their empowerment and independence both in the perspectives of Ugandan and Tanzanian women, neither in the Tanzanian nor Ugandan study context did any of the interventions change women's access to personally earned off-farm income. For other outcomes, the impact differs per context. Women's access to household livestock did not change in Uganda but, in Tanzania, improved through couple seminars. Women's involvement in strategic household decisions and perceived household wellbeing were not affected in Tanzania, whereas these increased as

a result of couple seminars in Uganda. Evidence of impact from interventions or policy in one context can be informative for other contexts but the same effects are not necessarily copied. Even if largely similar, some slight differences in prevailing institutions, norms, culture and human behaviour between contexts can explain some of the divergences in treatment effects. Exploring those for our study contexts is out of the scope of this article.

Our study suggests that future policy and programs aiming to empower women in agricultural households may benefit from strategies to enhance women's access to resources, including information and human capital, as a way to increase women's bargaining power combined with strategies to stimulate changes in the social-institutional environment in which women live, including the household and wider community (Cornwall, 2016; Farnworth et al., 2013; Wong et al., 2019). Such a combination may facilitate social changes within households. A crucial aspect of development interventions that aim to generate social changes within households is to assist women how to deal and cope with possible resistance or backlash from the part of their husbands and criticism by the wider community because they are "swimming against the tide", of which our study provided qualitative evidence. Changing the perceptions of men and the wider community about women's roles and responsibilities has a role to play, but may not happen overnight and advance progressively. First, the empowerment of women is hard to achieve without men's engagement. Our study demonstrated the role of a husband who is supportive or receptive to his wife's involvement in strategic household and farm affairs. Second, our study also showcased how a comparative knowledge advantage on the part of women challenged gender roles in their households, and, as an informational resource, could be used as leverage for bargaining power. Third, outside the household, having male role models who are willing to challenge the social norms and change can be a powerful instrument to weakening the traditional social and gender norms in the wider community. Institutions such as the church or non-governmental organisations seem to be influential as well. Facilitating collective agency by women is another instrument with proven value (Agarwal, 1997; Kabeer, 2011), but was not particularly effective in our study context due to jealousy and criticism by other women.

On a final note, expecting a strong impact of a relatively short term, one-time intervention introducing participatory intrahousehold decision making in different domains of women's empowerment may have been rather optimistic. The social and gender norms that govern people's mindsets and behaviour in patriarchal rural societies, as in our study community, have perpetuated and been reinforced in many years. Therefore, the journey to gender equality and women's empowerment could be long and fraught with challenges since change of deeply ingrained mindsets and behaviour is unlikely to happen swiftly and smoothly. Programs and policy envisioning such social change, therefore, may need a deeper and repeated engagement with households and communities and an extended intervention period. We believe stronger impact of participatory intrahousehold decision making in more domains could be expected beyond the one-year intervention period of this study. Therefore, a follow up study would be advisable to examine longer term and sustained effects.



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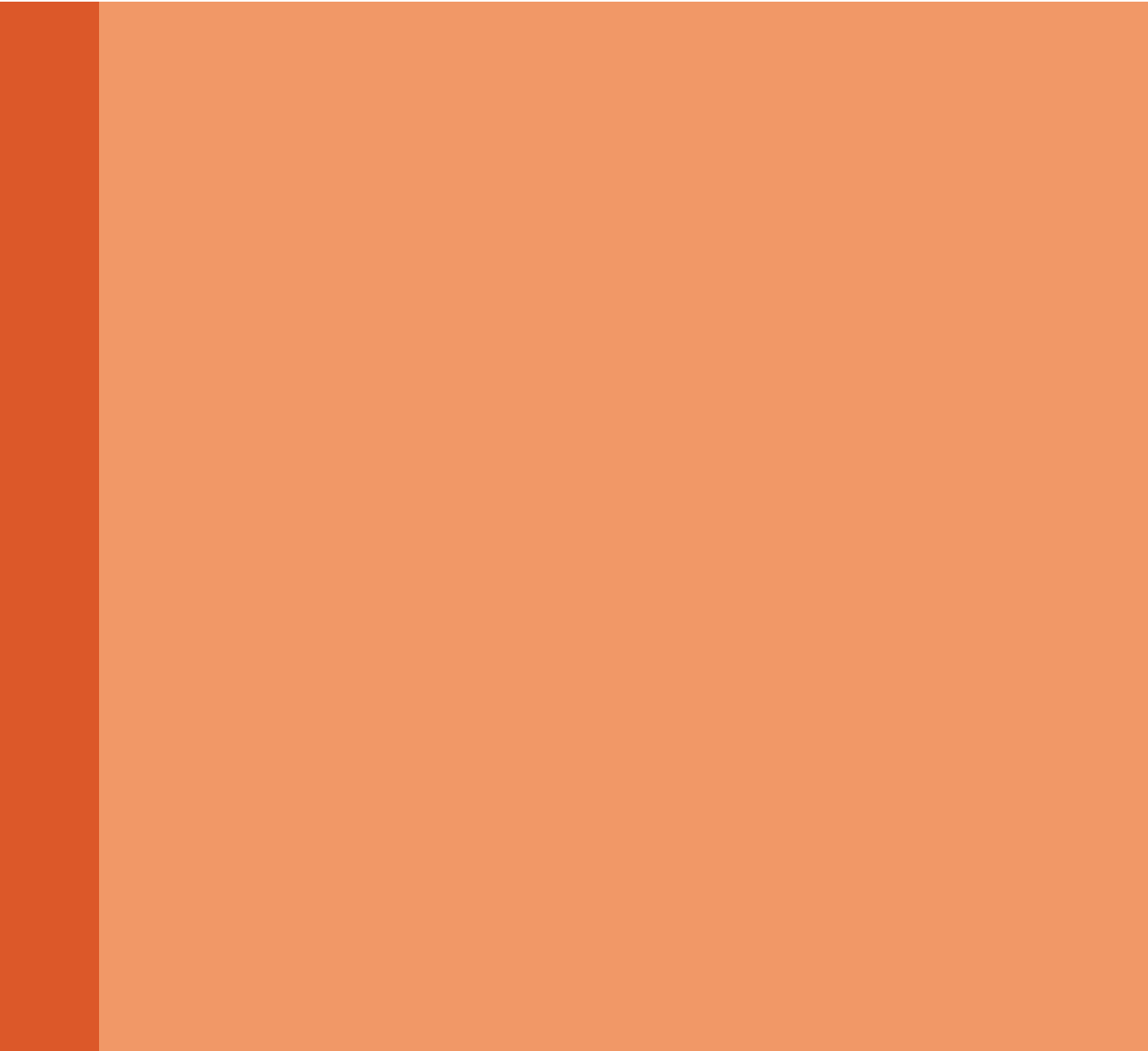
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