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# Women Empowerment Through Self-Help Groups: The Bittersweet Fruits of Collective Apple Cultivation in Highland Ethiopia

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**ABSTRACT** *This paper deals with the impact of self-help groups (SHGs) in apple production on empowering women in the Chencha district of Southern Ethiopia. Impact is traced on the basis of a cross-sectional survey among SHG members and nonmembers, using propensity score matching. Apart from the attitudinal changes among SHG and non-SHG women, we also scrutinize differences in male attitudes concerning the status of women. The results point towards positive and significant impacts of SHG participation on empowerment at the community level, which suggests that SHGs offer an effective space for women to share information and raise awareness about their rights. This could in turn be harnessed collectively to negotiate more “room to maneuver” in the community. At the same time, however, the data hint at negative effects from group participation at the household level. The attitudinal differences between treatment and control group indicate more conflictive relations between spouses, arguably due to an intensified fight to assert control over household resources. Hence, the evidence is consistent with a potential “backlash effect” from husbands.*

**KEYWORDS:** Women empowerment, Self-help groups, Bargaining power, Male backlash, Impact evaluation, Apple cultivation, Ethiopia

## 1. Introduction

It is estimated that close to 200 million people across the developing world have found their way into a self-help group (SHG) by 2017 (Greaney, Kaboski, and Van Leemput 2016). In majority, these SHG members are women, as the SHG model is believed to be particularly

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appropriate for working towards women empowerment based on the idea that collective action is most effective in fighting patriarchy. Recently, Brody et al. (2017) have released the first systematic review of the impacts of SHGs on various dimensions of women empowerment, taking in 23 quantitative impact studies and 11 qualitative ones. With the exception of the psychological dimension, the study reports positive impacts. At the same time, it signals the following: “[T]he included evaluations often did not include sufficient information about the specifics of the activities that were implemented by the SHGs. As a result, it remains unclear which of the various SHG models are most effective” (15). Indeed, the SHG model is far from uniform and can be focused on mutual support among its voluntary members in the economic, social, legal, or political domain. In this paper, like Brody et al. (2017), we zoom in on SHGs that have a strong economic component, more specifically SHGs that engage in collective income generation. In a sense, this is a more challenging but potentially also more transformative venture than the model prioritizing collective access to finance, i.e., the well-known credit and savings groups.

Even within SHGs that set up a joint economic activity, several types emerge, which are related to the nature of the enterprise. In many cases, women SHGs take up an activity that is new to them, such as beekeeping, the cultivation of a new cash crop, or further processing of food items that are locally cultivated. In other instances, women group together around economic activities in which they have ample experience, often firmly positioned in the female domain, such as subsistence crop cultivation or weaving. The case that we deal with in this paper presents yet another type. We study an SHG scheme in the Ethiopian highlands where women have started apple growing as a joint economic strategy on land allocated to the group. However, this cash crop is not new to them, as the members also engage in apple cultivation in their own household, where it is typically a family enterprise rather than an activity reserved for women. At the household level, both spouses (and often the children as well) perform tasks related to the cultivation of apple fruits and seedlings. This rather unique feature makes it interesting to explore the impacts of SHG membership on women’s status in the household and the wider community, as women-only apple production may disrupt the tacit norms that likely have evolved in households as to the entitlements that flow from commercial apple cultivation for men and women. Intra-household dynamics, in particular the relative bargaining power of husband and wife, may need recalibration as a consequence.

An additional reason for selecting this Ethiopian case study is the relative paucity of impact studies of SHGs in a sub-Saharan African context. Overwhelmingly, the evidence concerns SHG schemes in South Asia, most notably in India and Bangladesh, which reflects the fact that SHGs have grown out of the microcredit revolution, which has its origin in the region. While roughly half of all SHG members worldwide are believed to participate in an Indian scheme, the model has been replicated elsewhere, including sub-Saharan Africa. The Ethiopian government, for example, has promoted SHG schemes already since 2002, along other initiatives to redress gender inequalities. Their degree of success, however, is not as well documented as those schemes that operate in a South Asian context. By illustration, the systematic review by Brody et al. (2017) covers 34 impact studies, only 3 of which concern African schemes. While improving women’s status in South Asia is admittedly very critical, levels of gender inequality across parts of sub-Saharan Africa remain persistently high. In fact, both Bangladesh and India outrank Ethiopia on the Gender Inequality Index, as reported in the 2016 Human Development Report (UNDP 2016).

Since the SHG scheme under study in this paper is one that is involved in agriculture, it is pertinent to point out the disadvantageous position of women in agriculture, which is well documented for sub-Saharan Africa. Female farmers lose out due to the male-dominated nature of the extension service in most countries, a lack of access to credit and improved

inputs, absence or insecurity of property rights on land, and poor market access (Quisumbing and Pandolfelli 2010). In addition, community norms and weak intra-household bargaining power may restrict crop choice to women, prescribe allocation of marginal lands, and exclude women from commercialization, negatively affecting productivity, spending power, and psychological traits like self-esteem (Fischer and Qaim 2012; BenYishay et al. 2016). In Ethiopia, the government has taken action to tackle these gender-based injustices by enshrining gender equality in property and inheritance rights in the Ethiopian constitution (in 1994) and pursued subsequent legislative changes and land titling programs requiring property titles to have both the name of husband and wife. While these policies have been effective in promoting women's land rights in some parts of the country (Lavers 2017), the reality on the ground is often different, as is the case in the Chencha district in the south of the country, where our research is located. In this context, we aim to assess whether women SHG members have been able to challenge such power imbalances, at least according to their own perceptions and that of their husbands. To this purpose, a cross-section of 94 SHG members was surveyed along with their spouses in 2013, i.e., about 3 years into the program. For the identification of average treatment effects, 98 couples were surveyed in adjacent subdistricts where no SHGs were initiated and these control couples were subsequently matched to the exposed couples using propensity scores. This is admittedly a "second-best" design, as a panel design would allow for stronger causal identification. Propensity score matching (PSM) is only effective in dealing with selection bias concerning SHG participation caused by observable factors, leaving unobservable sources of bias uncontrolled (Gertler et al. 2016, 147). While we provide an indication of the sensitivity of our results to changes in unobservables, the paper is deliberately cautious in its claims on causality, given the limitations of the design.

The organization of the paper is as follows. In Section 2, we briefly review the concept of women empowerment and its link to collective action. Subsequently, Section 3 provides an overview of the evidence collected so far on the impact of SHGs in relation to women empowerment. In Section 4, more details are provided on the apple-cultivating SHGs and the local context of Chencha, followed by a description of the sampling procedure and impact identification strategy in Section 5. The results from the statistical impact analysis are presented in Section 6, which are subsequently interpreted in Section 7 in light of additional qualitative information as well as the literature reviewed. Finally, Section 8 concludes.

## **2. Empowerment and Collective Action**

Although the term empowerment is subject to various conceptualizations and interpretations, Mosedale (2005) highlights four aspects about women empowerment that are generally accepted. First, one can only meaningfully talk about empowerment, if the starting point is one of disempowerment, or "to be denied choice" as Kabeer (1999) puts it. Second, the empowerment process should be led by women themselves. Other actors can only play a facilitating or supportive role. Third, empowerment does not refer to decision-making power on trivial matters but concerns "strategic life choices" (Kabeer 1999). Finally, empowerment is a process without a fixed end goal; it does not stop at a given point in time. Kabeer (1999, 435) provides a concise definition of empowerment as a "process by which those who have been denied the ability to make strategic life choices acquire such ability," which nicely reflects the four features mentioned above.

According to Batliwala (2007), the critical operating concept within empowerment is power. Power can be taken as "the ability to make choices" (Kabeer 1999). By

consequence, disempowerment then refers to “those disadvantaged by the way power relations presently shape their choices, opportunities and well-being” (Mosedale 2005, 243). The choices women want to make and the opportunities they get are a function of the power available to them. Therefore, according to Shefner-Rogers et al. (1998, 321), “successful empowerment requires a shift in power relations.” That shift can be in the social, political, and/or economic domain, both between individuals and across social groups (Batliwala 2007). Therefore, the efforts of governments and other entities that support women to achieve their goals have to go directed at correcting power relations and opening up opportunities to exercise choice. The formation of groups is believed to be one way to deal with such imbalances in power relations and bring better outcomes collectively, or on an individual basis.

In the context of SHGs, it has become customary to distinguish between four different types of power, based on Rowlands (1997, 13): “power over” (controlling power), “power to” (productive power), “power with” (collective power) and “power within” (psychological power). Pereznieta and Taylor (2014) have translated these concepts for women’s empowerment in the economic domain specifically, which is pertinent for our SHG case that concentrates on collective income generation. In this study, the focus is on 1) “power to,” as referred to as “economic decision-making power within their household, community, and local economy”; 2) “power over,” which deals with “access to and control over financial, physical, and knowledge-based assets”; and 3) “power with,” i.e., the ability to organize with others to enhance economic activity and rights (*ibid.*, 236). The fourth type of “power within,” which reflects psychological traits like self-esteem, self-efficacy, and mental bandwidth, is less central for lack of data.

Policy-makers and aid practitioners have embraced the belief that groups are instrumental in generating such powers. Building social capital through group formation has been used in communities worldwide, especially in rural areas, as a means for risk reduction, income generation, and public service provision (Pandolfelli, Meinen-Dick, and Dohrn 2008). In most of the collective action initiatives, except microcredit, men are dominant in terms of membership as well as in leadership positions (Fischer and Qaim 2012). The establishment of gendered institutions like women-only microcredit groups and SHGs may be viewed as an antidote to such male-dominated collective action structures.

The literature provides mixed evidence about the impact of collective action on women empowerment. On the one hand, collective action may benefit the already well-off, thereby entrenching the impoverishment of marginalized groups (see, e.g., Burra, Deshmukh-Ranadive, and Murthy 2005). On the other hand, collective action has been found to hold manifold benefits that strengthen the position of women (Tesoriero 2006; Acharya et al. 2007; Swain and Wallentin 2009; De Hoop et al. 2014). According to Bantilan and Padmaja (2008), the social capital generated at the household and society level through collective action is an important means by which women gain access to resources and economic opportunities to escape from poverty. There is also a large body of literature on women’s collective action that evidences its contribution to natural resource management and protection (Agarwal 2000; Panda 2007), which will not be discussed here. Although many different operationalizations of women empowerment are available for empirical work (see Narayan-Parker 2005 for an overview), most studies include aspects of intra-household bargaining power and control over resources, often alongside social or political indicators such as women’s degree of involvement in public life or physical freedom to venture beyond the domestic sphere. While acknowledging recent critique by Fox and Romero (2017) that women’s influence over household resources represents only “a very narrow sliver of empowerment” and is a poor predictor of other empowerment dimensions,

as corroborated by Bayissa, Smits, and Ruben (*forthcoming*) for urban SHGs in Ethiopia, we also concentrate on such outcome measures, as it allows for comparing our results to those of similar evaluations elsewhere.

### 3. Evidence of SHG Impacts on Women Empowerment

The meta-evaluation of Brody et al. (2017) distinguishes between six outcome domains: economic empowerment, political empowerment, women's mobility, women's control over family planning, psychological empowerment, and domestic violence. The overall picture that emerges shows robust positive effects in the first four domains, but no clear effects on psychological empowerment and domestic violence. This conclusion is encouraging in the sense that systematic perverse impacts from SHG participation were not detected. The claim that "SHGs do not have adverse consequences for domestic violence" (*ibid.*, 1) is illustrative in this regard. Hence, the review does not lend support to the presence of a "male backlash effect," which has been documented in several studies that evaluate the consequences of women becoming more economically independent (e.g., Luke and Munshi 2011 and Weitzman 2014, both papers concern India; Alesina, Brioschi, and Le Ferrara 2016, on Africa).

It is conjectured that this "backlash" from men stems from the perceived threat that their breadwinner status in the household will be eroded, which comes with the specter of reduced status and self-respect. In extreme cases, this frustration could lead to aggressive behavior towards the spouse (Weitzman 2014). The theory of "gender deviance neutralization" suggests that men and women intensify traditionally gender-based behaviors when couples deviate from the conventional pattern (*ibid.*). Greenstein (2000) stresses in this respect that one's relative share of resources rather than the absolute share is predictive of relationship dynamics. Women's resources relative to men's may increase the violence that women face, especially when their resources are perceived as threatening.

However, the empirical evidence on male backlash is mixed. Other studies observe a reduction in marital violence following an increase in women's economic contribution, mainly as a consequence of reduced exposure (working outside the home), such as Bhattacharyya, Bedi, and Chhachhi (2011) and Chin (2012), both on India, Kim et al. (2007) in South Africa, and Peters (2017) in Bangladesh. Yet, other scholars find effects that could signal male backlash but interpret these differently. For example, Van Staveren and Odebo (2007) observe that husbands in Nigeria tend to reduce the resources available to the household when their spouse starts to earn her own income outside the family business, but ascribe this to the interaction between a complex set of family norms about "fair" contributions by spouses and male prerogatives, rather than as a retaliatory response. The experimental study by Kebede et al. (2014), which finds that Ethiopian couples fail to come close to Pareto efficiency in a voluntary contribution mechanism game, could also be seen in this light, as it is argued that fairness considerations seem to drive their results. Whether potential perverse impacts for women stem from male backlash, or, alternatively, from adjustment in accordance to norms about fairness in a patriarchal context, the unitary and cooperative household model, which both assume Pareto efficiency, should be eschewed in this case and replaced by a noncooperative bargaining model.

In the remainder of this section, we highlight selected evaluation studies of SHG schemes, most of which are also covered by the systematic review. In doing so, we distinguish between schemes in which microcredit provision is the central element and those that focus on specific income-generating activities. We start with the studies that have a strong link with microfinance.

A study on microfinance by Swain and Wallentin (2009) showed a positive impact from SHG membership on women empowerment in India. They used data from a nationally representative quasi-experimental household survey from five states on a sample of 961 individuals to arrive at this result. The empowerment indicator used in the two time periods (2000 and 2003) was composed of various dimensions, among which the primary economic activity in which the woman is involved (as a proxy for income share of the woman), whether she has experienced any kind of physical or emotional abuse from the spouse, the level of awareness on women's rights, whether she has independent savings, and political participation.

A study that also finds unambiguous positive results is Hashemi, Schuler, and Riley (1996) on rural credit programs offered by Grameen Bank and the Bangladesh Rural Advancement Committee (BRAC) in Bangladesh. On the basis of logistic regression on a sample of 1300 women, the authors conclude that the involvement in these credit programs had a positive effect on women empowerment. They used a composite eight-dimensional empowerment indicator, in addition to individual empowerment dimensions, as a dependent variable. Participation increased the mobility of the women, their ability to make purchases and major household decisions, their political and legal awareness, and ownership of productive assets. The paper also suggests that vulnerability of women to domestic violence declined due to the program. A more recent study by Mohapatra and Sahoo (2016), not yet covered in the systematic review, also found that participation in microfinance groups had a positive and significant effect on women empowerment in India. For identification, they used PSM methods on a sample of 300 randomly selected women (200 SHG participants and 100 nonparticipants). Their outcome variable is a composite index of women empowerment computed from three dimensions (autonomy, economic empowerment, and quality of gender relationships).

More ambiguous results from a microfinance-oriented SHG scheme can be found in De Hoop et al. (2014), which deal with the impact of women's SHG membership in Odisha, India, using a quasi-experimental design. The study found that there was a positive impact of SHG membership on women's autonomy, an important aspect of empowerment, but this failed to translate into higher subjective well-being, at least among women in the more conservative villages. In their interpretation, SHG membership engenders an identity loss at the individual level through the violation of gender norms at the community level. If the community holds strong sanctions against such norm transgression, or if women themselves have deeply internalized these norms, SHG participation compromises life satisfaction. In a sub-Saharan African setting, Ganle, Afriyie, and Segbefia (2015) assess the empowerment effects of microcredit among rural women in Ghana. Using a qualitative longitudinal study on women involved in an NGO-run microlending program, they found that some women got more empowered due to their access to credit, while others were further disempowered due to lack of control over the use of loans and due to an inability to repay their loan. Hence, impacts also turned out to be heterogeneous, depending on levels of intra-household bargaining power.

Apart from microcredit-oriented groups, there are also evaluations of SHGs that directly focus on a specific economic activity, much like in our Ethiopian case. A study by Tesoriero (2006), who reports on an evaluation of NGO-supported women SHGs in KV Kuppam Block, Tamil Nadu, Southern India, falls in this category. The focus of the paper is on their contribution to gender equality in terms of citizenship and empowerment rather than to their success in managing microcredit loans. The participating women perceived working collectively to have a positive influence on change at the village and *panchayat* (block) level. The case study part showed that representing their village in local meetings effectively allowed them to raise the problems of the community and was successful in the

development of drinking water infrastructure, concrete roads, and free construction of houses for the poor.

The mixed methods study by Acharya et al. (2007) that explores a community development strategy to empower rural women through educational and small-scale household economic activities in Nepal also showed positive impacts from SHG participation. Using both qualitative and quantitative (correlation matrix) methods, they show that the program reduced the gender gap in literacy, which had a spillover effect to other cognitive skills through promoting the value of education to nonparticipant women. For those women who used to be engaged in kitchen gardening activities before the intervention, these activities gained momentum after the intervention period of the program, despite some barriers for further expansion like disease and pest occurrence, lack of seeds, lack of training, and lack of water for irrigation. The paper by Shefner-Rogers et al. (1998) explores the role of communication in the empowerment process of female dairy farmers in India. Measuring empowerment on a 12-item scale and comparing dairy-producing women who participated in training with a cooperative development program with nonparticipating female dairy farmers, they found that the former were more empowered in a broad sense. Participants scored higher on 11 of the 12 indicators used.

The study by Fischer and Qaim (2012), based on survey data from small-scale banana producing farmers in Kenya, showed that group membership has a positive effect on gender equality and female-controlled income share when women participate in mixed groups. A related study in Ethiopia by Oumer, Tiruneh, and Tizale (2014) shows positive impacts of women Farmers Research Group participation on improving knowledge and skill on potato technology, collective capacity, and their benefit from seed potato production. For instance, the study indicated that the participating women farmers even started to challenge formal institutions, demanding new technologies and solutions to constraints of agricultural production and marketing by writing an official letter with their own stamp on it.

Methodologically, some of the studies used controlled groups and innovative identification strategies in evaluating the impact, while others looked at the qualitative aspect using in-depth case studies. Despite these methodological differences, results overlap in the sense that modest benefits on various dimensions of women empowerment were revealed, albeit with important qualifiers and an occasional dissenting study (most notably the Ghanaian study by Ganle, Afriyie, and Segbefia 2015).

#### 4. Context and Data

Chencha is one of the 15 districts under the Gamo Gofa zone of the Southern Nations Nationalities and People's Regional State (SNNPRS) of Ethiopia and is in turn administratively divided into 45 rural and 5 urban subdistricts. It is a relatively isolated highland area, situated at an altitude ranging from 1600–3200 m above sea level, and predominantly populated by families belonging to the ethnic group of the Gamo. In terms of livelihood strategies, the area is characterized by mixed-systems farming based on crop production and livestock rearing. The cereals most commonly grown in the area are wheat and barley, while beans and peas are the most popular leguminous crops. Potato and *enset* (false banana) are the dominant root crops in the area. Concerning livestock ownership, cattle, sheep, horses, mules, and chickens feature most prominently. According to a recent study by Eshetu and Mekonnen (2016) on poverty in Chencha district and the adjacent (low-land) district of Mirab Abaya, livestock ownership is an important predictor of poverty. The same applies to land ownership. Using a poverty line of 250 Birr per adult equivalent per month, the poverty rate is calculated to equal 30% of households (ibid.).



Most households (84%) possess landholdings in the range of 0.1–0.5 ha only, which attests to high population density. Land inheritance systems are strongly patrilineal among the Gamo, which is rooted in the custom that young women become part of the groom's family after marriage (Bayu 2015). Daughters are effectively excluded from receiving family plots. As Bayu (2015) reports from a focus group discussion with women who raised the issue of female land rights, husbands proved unreceptive and felt their authority was undermined, leading to frictions in marital relations.

Land is commercially exploited mainly for the production of apple fruit and seedling, as alternative cash crops are virtually nonexistent. Apple had been practically unknown to Ethiopian farmers until the 1990s, when a Pentecostal church as well as World Vision, a global NGO with an Evangelical Christian mission, started to promote it in Chencha town, after which it spread quickly into the rural hinterlands (Freeman 2012; Alemu, van Kempen, and Ruben forthcoming). Apple orchards in Chencha district are estimated to cover 728 ha out of a total area of 37,650 ha (Fetena et al. 2014). With average annual rainfall of 1100–1300 mm and a mean annual temperature around 17°C (min. 11°C to max. 23°C), agroclimatic conditions are generally suitable for the production of various varieties of apple. Apple production has in fact become the main source of cash income for the highlanders, as they have fewer options for cash crops available than lowlanders. However, profitability varies substantially across apple-cultivating households in the district, in part due to the different endowment of land and livestock (manure being an important input for apple production), and partly due to asymmetry in technical know-how (Alemu, van Kempen, and Ruben 2017).

According to the zonal and district-level women and youth offices, the government randomly selected various districts of the Southern Region to pilot group-based empowerment initiatives in 2010, one of these being Chencha. The program has been rolled out in three sub-districts (*kebeles*): Mafona Zolo, Doko Kale, and Dorze Hayzo. Women above 18 years of age in these pilot villages were organized into groups that participate in selected business activities of their interest with limited support from the government. Some of these groups picked up fruit and vegetable cultivation business as their preferred choice. In line with the SHG model, the groups do not only concentrate on cultivation as such, but also engage in training on women's rights, education, health, and microfinance. In order to isolate the impact of these SGHs on its members, we selected two out of the three program villages, i.e., Doko Kale and Mafona Zolo, as apple cultivation was chosen as collective economic activity in both, but not in Dorze Hayzo. The latter would also make a poor cultural fit, as it is one of the few communities inhabited by the rather distinct Dorze ethnic group. Within the two selected *kebeles*, a criterion for inclusion in the sample was that a member also engaged in apple cultivation as a household activity before the setup of the SHG schemes. As a reference group for these SHG members, we rejected the idea of sampling controls from nonparticipating households in the program villages, because of potential selection and spillover effects. Instead, two adjacent *kebeles*, Doko Tsida and Elena Chare, were purposively selected as control areas, as they had not been selected as a pilot area for the SHG scheme and were singled out by agricultural officers in the district as important centers of production and marketing of apple. Again, inclusion in the sample was conditional on being engaged in apple cultivation at the household level to allow for a meaningful comparison.

Unfortunately, reliable population statistics and SHG membership lists proved nonavailable, precluding standard sample size calculations. The latest population census dates from 2007, which in fact extrapolates from data collected in 1994. These data put the total population in each of the four selected *kebeles* between 1500 and 2000 individuals. A back-of-the-envelope calculation, assuming that a household consists of 7 members on average, would imply around 1000 adult women residing in this set of *kebeles*. However, the

**Table 1.** Composition of sample, by treatment status

	<i>Kebele</i> (subdistrict)	Cluster village(s)	No. of married couples interviewed
Treatment	Doko Kale	Pinsa Gitora	44
	Mafona Zolo	Chilashe	50
Total treatment			94
Control	Elena Chare	Kale, Dosha	47
	Doko Tsida	Warto, Tsida Shaye, Sharpo	51
Total control			98
Total sample			192

requirement of household apple cultivation reduces the size of the sampling frame considerably, albeit with marked differences across villages within a given *kebele*. Therefore, we settled for villages with relatively high incidence of apple cultivation in both treatment and control *kebeles*. This resulted in the treatment group in villages with high rates of SHG participation as well, which further minimizes the influence of potential selection effects.

Overall, 209 SHG members were presented with a questionnaire, which was administered face-to-face by native-language surveyors. Since the attitudes of male members in the household hold important clues as to the achievements in the domain of women's empowerment, husbands were also interviewed. Sections of the survey that concerned questions about the household as such were administered to the couple in each other's presence. Spouses were taken apart, however, for the attitudinal questions, so as to ensure a certain degree of privacy. Seventeen women were either single or widowed and were eventually dropped from the sample. Hence, the focus is on intra-household dynamics among married couples only. This leaves a total sample of 192 couples, almost equally split between treated (94) and untreated (98) ones. Table 1 provides an overview of the survey sample composition. In addition to the survey, two focus group discussions were held, one with 10 SHG participants and the other with the same number of nonparticipants. Also, six key informant interviews were conducted, among which the women office heads at district and zonal level.

## 5. Identification Strategy

The impact of SHG participation on women empowerment has been analyzed using a "with-without" comparison with PSM. In this setup, the average effect of SHG participation is assessed on selected empowerment measures, recorded from both spouses, as outcome variables ( $Y$ ). The impact of treatment on individual  $i$ ,  $\delta_i$  is the difference between potential outcomes with and without treatment, coded as 1 and 0, respectively:

$$\delta_i = (Y_{1i} - Y_{0i}).$$

It follows that the average treatment effect (ATE) is estimated by the following expression:

$$\text{ATE} = E(\delta_i) = E(Y_1 - Y_0).$$

However, comparing a treatment group with a nonexperimental comparison group can bias the impact due to self-selection into the program in the absence of random placement. An instrumental variables technique would offer a potential workaround for selection bias in our case, but no instrument could be identified that is sufficiently strong for identification and has intuitive appeal. Alternatively, we rely on a statistical procedure that matches observations in the two groups based on their a priori likelihood of participation (propensity scores), which has the potential to correct part of the selection bias, i.e., to the extent that it is caused by variables that have been observed, since it uses a natural weighting scheme to estimate the treatment impact (Dehejia and Wahba 2002). This notwithstanding, matching on propensity scores unlikely covers all confounding factors and potentially worsens the distribution of unobservables between treatment and control (Sainani 2012). The propensity scores are generated from a probit model that regresses relevant observable attributes on participation status:

$$\text{Prob } (D = 1|x) = \int_{-\infty}^{x'\beta} \phi(t)dt = \Phi(x'\beta).$$

The function  $\Phi(\cdot)$  is a commonly used notation for the standard normal distribution and  $x$  represents a set of observables that are exogenous to participation ( $D = 1$ ). The observable attributes that were used in the regression includes the age and education levels of both spouses, family size, the religious affiliation of the household (Protestant or Orthodox), whether the woman brought in an asset at the time of marriage, and distance of household residence to the main road. None of these matching variables should be influenced by the SHG intervention.

For setting up the comparison between treatment and control group, each treatment couple was matched with its five “nearest neighbors” in terms of the matching variables. This matching exercise proved successful in the sense that all couples entered into the common support. Also, Table 2 shows that matching improved the balance between the two groups in the sample. Without matching, treatment couples feature significantly younger and more educated women, a higher share of Protestants, and fewer women who brought an asset into their marriage, as compared to the control couples (see columns 1–3 in Table 2). After matching, the standardized difference between the groups is lower for all matching variables, except for two that record marginal increases (columns 5 and 6). The variance ratios reported in columns 7 and 8 tend to be closer to 1, especially regarding the variables which showed large initial disparities, i.e., woman’s education level and religion. These same variables are also important in explaining the odds of SHG participation, as shown by the probit regression results in column 4. Younger and more educated women are more likely to join the SHG scheme. Also, women with a Protestant rather than an Orthodox background show a higher likelihood of participation, while bringing an asset into one’s marriage significantly reduces one’s propensity to join.

Since PSM eliminates selection bias due to observable factors only, bias may still persist as a consequence of unobserved variables (Ravallion 2007). When presenting the average treatment effects on particular outcomes, therefore, we will signal their respective level of sensitivity to unobservable bias, provided the effects are statistically significant. For this purpose, we use the Mantel–Haenszel bounds procedure for noncontinuous outcome variables to calculate how strongly an unobserved variable should influence the likelihood of participation through selection in order to invalidate the observed effect.

**Table 2.** Descriptive statistics on matched and unmatched sample, by treatment status

	Unmatched			Matching (4) Probit on SHG participation	Standardized difference (T – C)		Variance ratio (T – C)	
	(1) Treatment (mean) <i>n</i> = 94	(2) Control (mean) <i>n</i> = 98	(3) Diff (T – C)		(5) Before matching	(6) After matching	(7) Before matching	(8) After matching
(a) Age woman	40.2	44.9	–4.7 (1.75)***	–0.13 (0.07)*	–0.39	0.09	0.94	1.17
(b) Age husband	48.5	51.7	–3.2 (2.05)	0.03 (0.06)	–0.23	0.07	0.82	1.09
(c) Spousal age gap (male – female)	8.3	6.9	1.4 (1.14)	-				
(d) Education woman (no. of years)	1.6	0.6	1.0 (0.34)***	0.09 (0.05)*	0.42	0.13	2.57	1.16
(e) Education husband (no. of years)	4.5	4.3	0.3 (0.61)	–0.04 (0.03)	0.07	–0.13	0.98	1.00
(f) Spousal education gap (male – female)	3.0	3.7	–0.7 (0.54)	-				
(g) Household size (no. of members)	7.2	7.6	–0.4 (0.33)	–0.01 (0.04)	–0.18	–0.04	1.17	1.49
(h) Religious affiliation of couple (0 = Orthodox; 1 = Protestant)	0.85	0.62	0.23 0.06***	0.83 (0.24)***	0.53	–0.10	0.54	1.11
(i) Woman brought asset to marriage (0 = no; 1 = yes)	0.36	0.64	–0.28 (0.07)***	–0.69 (0.20)***	–0.58	–0.15	1.01	0.98

(j)	Distance to main road (in km)	0.85	0.85	0.0 (0.12)	0.10 (0.12)	-0.00	-0.05	1.71	1.41
	Likelihood ratio				43.6***				
	Pseudo $R^2$				0.16				
(k)	No. of apple trees	31.6	25.3	6.3 (4.58)					
(l)	Age of apple trees	7.6	7.6	0.0 (0.42)					
(m)	No. of fruit varieties	5.3	5.5	0.2 (0.34)					
(n)	No. of seedling varieties	5.2	5.2	0.0 (0.51)					
(o)	Share of apple in total household income	0.60	0.55	0.05 (0.04)					

Finally, some remarks are in place regarding the outcome variables used in the impact analysis. It concerns a set of 13 items that are subjective in nature and are modeled to questions commonly employed in empirical studies on women empowerment. Perceptions are elicited regarding women's involvement in politics and society in general, women's access to information and credit, spousal control over household resources, women's participation in business, spousal decision-making responsibility, intra-household bargaining power and acceptance of wife-beating. Out of the 13 items, 10 are 5-point Likert-scale items, either asking for level of (dis)agreement or, in two cases, for an evaluation of intensity (weak/strong). The remaining three items are binary (yes/no) questions. See [Table 3](#) for exact wording of the items and corresponding response scales. It should be noted that scoring is not consistent in the sense that, for example, higher levels of agreement signal higher levels in some instances, whereas these point at disempowerment on other items, depending on positive/negative wording or male/female perspective. Also, the scores across women and husbands on the same item cannot be interpreted consistently, as some questions ask both female and male respondents to evaluate women's position while others request them to evaluate the situation of the opposite sex. In the results table, we will therefore indicate whether a negative or positive sign on a coefficient implies higher or lower levels of women empowerment.

## 6. Results

Before analyzing the impacts of SHG membership, we start out by briefly describing the experiences of the women who have joined a group. Most of them obtained SHG membership either three or four years before the survey in 2013, which coincides with the original rollout of the program by the Ethiopian government around 2010. However, one in five had been a member for two years only at the time of fieldwork, and a handful even reported shorter exposure. As for the effort that they invest in collective apple cultivation, the average member works 20 days per agricultural season on the plots allocated to the group. About 30% works more, even up to 60 days. By contrast, the most frequently recorded response is 10 days and some even report contributions as low as 2 or 3 days per season. Perhaps this variation in labor input explains part of the observed difference in perceived performance of the group. Roughly one in three rate their group's overall performance as high, while most others rate it as medium, and only 5% indicate to take part in a low-performing group. On the distribution of the benefits from the collective enterprise, two out of three indicate that this is fairly equal, while the other third believe that some members benefit disproportionately. A similar picture emerges when asked whether members put in equal effort. A more uniform opinion arises regarding the degree of loyalty that members display towards the group. Over 90% confirm strong group loyalty, although this should be qualified by the fact that 95% prefer to work for their own account rather than for the group. Still, 9 out of 10 think it is fun to work as a group despite, or perhaps because, a lot of gossip goes around in their group according to 80% of the members. Group discipline is deemed important, but not universally. Four out of five state that they monitor the quality of each other's work and feel that those who do not sufficiently contribute should be sanctioned by expulsion from the group. Finally, and perhaps most importantly, high levels of group solidarity are reported. Only 10% of the members entertain doubts as to whether the group would be willing to help out an individual member in times of distress, implying that most are confident that the group will engage in acts of solidarity.

Changing the scene to their own households, members typically face a husband who is six years older (median value). The average age gap shown in [Table 2](#) is substantially higher

**Table 3.** Descriptive statistics on outcome variables, by treatment status and gender

	Women					Husbands				
	(1) <i>n</i>	(2) Treatment	(3) <i>n</i>	(4) Control	(5) Diff (T – C)	(6) <i>n</i>	(7) Treatment	(8) <i>n</i>	(9) Control	(10) Diff (T – C)
(a) Women should be more involved in politics (1 = strongly disagree, ..., 5 = strongly agree)	94	2.7	98	2.0	5.00***	92	2.7	98	1.8	4.47***
(b) Women should be more involved in civil society (1 = strongly disagree, ..., 5 = strongly agree)	94	3.4	98	2.1	8.52***	92	2.8	98	2.1	3.49***
(c) Your spouse has the right to control resources (1 = strongly disagree, ..., 5 = strongly agree)	93	3.2	98	3.5	-3.34***	87	3.2	98	3.4	-1.12
(d) I have good access to information regarding apple cultivation and marketing (1 = strongly disagree, ..., 5 = strongly agree)	94	2.7	98	2.2	3.52***	94	3.4	98	2.8	2.87***
(e) I have more power compared to other family members in taking household decisions (1 = strongly disagree, ..., 5 = strongly agree)	93	2.7	98	2.6	0.67	93	3.1	98	3.0	0.72
(f) Women participate equally in apple business (1 = strongly disagree, ..., 5 = strongly agree)	94	3.6	97	3.4	3.36***	94	4.6	98	3.1	10.23***
(g) Women have equal access to the resources generated from apple (1 = strongly disagree, ..., 5 = strongly agree)	94	3.6	98	3.3	3.38***	94	4.3	98	3.4	7.27***
(h) Men take prime responsibility for decision-making (0 = no; 1 = yes)	94	0.10	98	0.01	2.66***	92	0.03	98	0.13	-2.48**
(i) To what extent are women free to take their own decisions? (1 = very weak, ..., 5 = very strong)	94	3.0	98	3.2	-1.96*	92	3.4	98	2.3	7.49***
(j) I have more control over household resources than my partner (1 = strongly disagree, ..., 5 = strongly agree)	93	2.2	98	2.6	-2.54**	93	3.1	97	2.9	1.54
(k) Male household member has final say regarding decisions on children's health (0 = no; 1 = yes)	94	0.19	98	0.00	4.54***	92	0.32	98	0.12	3.22***
(l) Is it acceptable for a husband to hit his wife? (0 = no; 1 = yes)	94	0.53	98	0.17	5.20***	92	0.56	98	0.55	-0.10
(m) To what extent do women have access to credit? (1 = very weak, ..., 5 = very strong)	94	2.6	98	3.0	-4.91***	92	2.4	98	2.5	-0.89

\*, \*\*, \*\*\* indicate significance at 10%, 5%, and 1%, respectively.

at 8.3 years, which is due to a few couples showing extreme age gaps of more than 40 years. Also, husbands tend to be more educated, having had three more years of education on average. This educational gap is even larger in the control group (3.7 years), which is primarily a consequence of the weak educational profile of the women having been in school for less than a year on average. However, differences in schooling by treatment status and by gender should be seen in the light of an abysmal education record overall. Most women in the sample (78%) have never gone to school and only 1% has completed secondary education. Male performance is also underwhelming with an average school career of 4.4 years.

Culturally, a difference can be observed between members and nonmembers in [Table 2](#) with respect to religion. The treatment group has a stronger representation of Protestants, which includes both Pentecostals and charismatic Evangelists, than the comparator group (85% against 63%). Orthodox Christians thus constitute a larger share in the latter, though still a minority. While we have not been able to verify whether cultural or economic factors are at play, the share of women who brought an asset to the household at the time of marriage is significantly lower in the SHG member group (36% against 64%).

At the bottom of [Table 2](#), indicators of household apple cultivation are compared, which are remarkably similar across the two groups. The average household owns 25–30 apple trees of about 7–8 years old and works with five different varieties of apple fruits and seedlings. More crucially, economic dependence on household apple cultivation is in the same range of 55–60% of total household income.

Now we turn to the impact estimation proper. While [Table 3](#) shows the raw scores on the 13 outcome variables for the treatment and control group, the remainder of this section concentrates on the results in [Table 4](#), displaying the average treatment effects on the matched sample. The number of observations varies slightly across outcomes due to missing values, but none of the analyses misses out on more than two individuals from the entire sample, except for the “right to control resources” outcome. The latter has seven missing observations among males, all husbands of SHG women. The outcomes in [Table 4](#) are organized from the strongest positive effects at the top of the table to the most pronounced negative ones at the bottom, as judged from the women’s rather than their husbands’ responses (see columns 1–6). Taking the women’s perspective on their empowerment, positive effects can be observed on four outcomes, no effect on three outcomes, and a negative effect on the remaining six indicators. Comparing the top and bottom of the table reveals that positive effects concern items that relate to women’s position in the wider community, in case their involvement in politics and society, and, moreover, have a normative character (women “should”), whereas the negative effects refer to women’s position in the domestic sphere and relate more to actual than to desired situations. This difference can be illustrated by two items that look very similar at first; “Your spouse has the right to control resources” (*c*) versus “I have more control over household resources than my partner” (*j*). The former features among the positive effects, while the latter contrasts negatively with the responses in the nonmember group. The “right to” element in the first item seems essential, as it indicates that SHG women are less willing to accept male dominance on resource control within the household, but when actual control over resources is concerned, their perception signals relative disempowerment compared to the control group. This negative evaluation is likely rooted in the fact that the mentality of husbands on the issue of resource control appears to have remained unaffected. They are as likely to claim the right to control resources as husbands in non-SHG areas (see columns 7–12). This offers a sharp contrast with their strong support for an expansion of women’s “room for maneuver” in public life (items *a* and *b*), which suggests that their sensitization to liberal ideas about women’s position has been selective and biased towards those aspects that are less threatening, at least in the short run, to their position as head of household.



**Table 4.** Average treatment effects from SHG participation using nearest-neighbor matching<sup>a</sup>, and sensitivity to unobservable bias

		ATE – women					ATE – husbands						
		(2) <sup>a</sup> Coef. NN [K]	(3) AI Robust Std. Err.	(4) <i>p</i>	(5) WomEmp Effect	(6) <sup>b</sup> $\Gamma$	(7) <i>n</i>	(8) <sup>a</sup> Coef. NN [K]	(9) AI Robust Std. Err.	(10) <i>p</i>	(11) WomEmp Effect	(12) <sup>b</sup> $\Gamma$	
(a)	Women should be more involved in politics	192	<b>0.52</b> <i>0.50</i>	0.12	0.000***	+ve	5.1	190	<b>0.67</b> <i>0.65</i>	0.15	0.00***	+ve	4.3
(b)	Women should be more involved in civil society	192	<b>1.19</b> <i>1.14</i>	0.11	0.000***	+ve	20.0	190	<b>0.42</b> <i>0.48</i>	0.15	0.007***	+ve	4.3
(c)	Your spouse has the right to control resources	191	<b>-0.48</b> <i>-0.49</i>	0.08	0.000***	+ve	5.3	185	<b>-0.12</b> <i>-0.16</i>	0.10	0.214	<b>0</b>	
(d)	I have good access to information regarding apple cultivation and marketing	192	<b>0.35</b> <i>0.44</i>	0.16	0.035**	+ve	1.1	192	<b>0.66</b> <i>0.68</i>	0.19	0.001***	?	3.6
(e)	I have more power compared to other family members in taking household decisions	191	<b>0.25</b> <i>0.28</i>	0.24	0.292	<b>0</b>		191	<b>0.02</b> <i>-0.08</i>	0.24	0.941	<b>0</b>	
(f)	Women participate equally in apple business	191	<b>0.10</b> <i>-0.06</i>	0.16	0.544	<b>0</b>		192	<b>1.54</b> <i>1.46</i>	0.11	0.000***	+ve	n.a.
(g)	Women have equal access to the resources generated from apple	192	<b>-0.01</b> <i>-0.06</i>	0.22	0.970	<b>0</b>		192	<b>0.71</b> <i>0.79</i>	0.15	0.000***	+ve	5.4
(h)	Men take prime responsibility for decision-making	192	<b>0.12</b> <i>0.11</i>	0.06	0.052*	-ve	1.3	190	<b>-0.13</b> <i>-0.12</i>	0.04	0.000***	+ve	1.8
(i)	To what extent are women free to take their own decisions?	192	<b>-0.21</b> <i>-0.30</i>	0.11	0.048**	-ve	3.4	190	<b>1.25</b> <i>1.24</i>	0.13	0.000***	+ve	9.3
(j)	I have more control over household resources than my partner	191	<b>-0.72</b> <i>-0.60</i>	0.16	0.000***	-ve	1.4	190	<b>0.33</b> <i>0.36</i>	0.22	0.133	<b>0</b>	
(k)	Male household member has final say regarding decisions on children's health	192	<b>0.18</b> <i>0.19</i>	0.04	0.000***	-ve	3.1	190	<b>0.12</b> <i>0.15</i>	0.07	0.106	<b>0</b>	
(l)	Is it acceptable for a husband to hit his wife?	192	<b>0.36</b> <i>0.36</i>	0.07	0.000***	-ve	4.0	190	<b>-0.07</b> <i>-0.04</i>	0.09	0.424	<b>0</b>	
(m)	To what extent do women have access to credit?	192	<b>-0.38</b> <i>-0.44</i>	0.09	0.000***	-ve	5.5	190	<b>-0.04</b> <i>-0.06</i>	0.13	0.767	<b>0</b>	

<sup>a</sup>Based on matching with five nearest neighbors using *teffects psmatch* command in STATA14 (NN). As a robustness check, ATE coefficient generated by Kernel matching using *psmatch2* command is provided in italics [K].

<sup>b</sup>Gamma at which result loses significance at 10%, using Mantel–Haenszel bounds. In one case (f), sensitivity could not be computed due to nonparametric nature of the bounds calculation.

\*, \*\*, \*\*\* indicate significance at 10%, 5%, and 1%, respectively.

In this line of reasoning, however, it is somewhat puzzling that husbands, compared to their counterparts in the control group, are more likely to perceive women as participating equally in apple cultivation (*f*) and having equal access to resources generated from apple cultivation (*g*), grant them more freedom to take their own decisions (*i*), and seem willing to shift some responsibility for decision-making to their partner (*h*). Strikingly, women show particularly poor evaluations of these same items (*h* and *i*), or at least no better than nonmembers (*f* and *g*). On other counts, the attitude of male respondents is indistinguishable from those in the control group, such as where it concerns having a final say on decisions regarding children's health (*k*), tolerance of wife-beating (*l*), and women's access to credit (*m*). On each of these three items, SHG women seem particularly frustrated, reporting significantly less empowering outcomes than nonmembers (bottom three entries in Table 4). The fact that they signal a higher tolerance among husbands to engage in physical abuse vis-à-vis their spouse is particularly worrying.

The effects described above appear rather strong. Out of 10 significant effects on women's attitudes (column 4), 7 reach significance at the 1% level (3 positive and 4 negative). Note that we disregard the positive effect on male access to information (column 10), which is highly significant, but does not have a clear relation with women empowerment. Moreover, all six (positive) effects observed on male attitudes are significant at 1% as well. In order to check whether the results are sensitive to the matching procedure applied (nearest neighbors with replacement), columns (2) and (8) of Table 4 also report coefficients estimated using Kernel matching (in italics). This alternative produces very similar results, both qualitatively as well as in magnitude. The largest difference is observed on women's perception regarding equal participation of both spouses in apple business. SHG women observe lower equality when compared to non-SHG women using Kernel matching, but not significantly so.

Sensitivity to unobservable bias, as reflected in the critical values for gamma (columns 6 and 12), is reportedly low for most effects. When gamma = 2.0, for example, unobservables should at least double the probability of SHG membership in order to undermine the significance of the observed effect. Except for three cases, the values for gamma exceed 2.0. The more sensitive ones include spouses' relative control over household resources (*j*), primacy of responsibility for decision-making (*h*), and women's access to information on apple technology (*d*). The latter is the weakest in this regard. An unobserved factor that would change the likelihood of SHG participation by 10% could invalidate the positive effect.

## 7. Discussion

The general impression that emerges from Table 4 is that SHG members are more aware of their subordinate position vis-à-vis male members of society and feel an urge to challenge this, both within and outside their household. However, husbands of SHG members seem to support such demand for more agency almost exclusively in the public domain, which suggests that empowerment gains from SHGs are concentrated at the community level. Our focus group discussion with members confirms that women have started to share more information among each other and that, as a collective, they increasingly became a force to reckon with in the community. It is also this broader role that the Ethiopian government stressed in its intervention model. For instance, the government uses SHGs to advocate educational and health-related issues within the groups and, by extension, to other women in the village. The SHG women revealed during the focus group discussion that they advise their fellow women to implement the health packages (like hygiene, family planning, delivery at health stations, prevention and control of common diseases in the

locality) and promote the enrollment of school-age children. They claim that due to their actions, the awareness of women in the community on health and educational benefits has been raised from a very low base some years ago. They also stimulate other women to participate in community meetings and women SHG activities in spite of resistance encountered from spouses and village officials. They also pointed out that groups even go to households where husbands mistreat their wives to offer advice and put pressure on the men. Since men anticipate that they will be approached by the SHG members in case of mistreating their spouses, violence against women has reportedly diminished.

Another piece of qualitative evidence in support of positive community-wide impacts concerns the domain of education. The women mentioned that they used to send their boys to the capital Addis Ababa to work in weaving, in exchange for an annual financial compensation for the parents, but that this practice has nowadays been abandoned under pressure from SHGs. The boys that were sent out as child laborers currently attend school, avoiding the pernicious impact of exploitation in the labor market on their short- and long-term welfare. The halt to this practice might even break an important intergenerational channel of poverty transmission. The women cooperate with the village administration and participate in committees that control child trafficking. Moreover, coming together as a group has the benefit that they share information among themselves which increases their understanding about their rights, the rules of the community and the state, business opportunities, and the problems which affect individuals and the community at large.

While the collective action against child labor and marital violence influences important decisions at the household level, our results at the same time suggest that SHGs may have had a perverse impact on the perceived bargaining power of women in the domestic sphere. This could tentatively be attributed to increased awareness of the power imbalance among women, increasing their frustration as long as the status quo is maintained. However, the focus group discussion and key informant interviews revealed that both open and tacit resistance from men may also have played a part. Especially in the start-up phase of the groups, opposition from husbands was so strong that a number of women who showed up for some time for SHG meetings soon stopped attending. More subtle forms of male assertiveness would include a tightening of their grip on the family's apple business. If this holds true more widely, it would be consistent with the observation that spouses entertain different views on the degree to which spouses participate in, and benefit from, apple cultivation. If husbands' objective is to keep a check on their wives' control on household resources, they would factor in the additional income that women obtain from the SHG enterprise and restore the balance by capturing increased control on the household business. In their view, the two would then be "equal" again. From the female perspective, however, this likely feels as a loss, as established claims on household income are eroded, despite the fact that SHGs allow them to tap into a new source of income.

Notwithstanding the limitations of our cross-sectional design, which only offers a "snapshot" and thus does not warrant strong causal claims, our results best fit a scenario in which SHG membership puts pressure on spousal relations and, possibly, upsets the quasi-cooperative model, albeit a strongly male-biased one, in order to give way to a noncooperative bargaining model. In this light, it is interesting to consider one of the SHG women from the focus group discussion, who recalled that when they began planting apple seedlings in their own backyard in the past, spouses tended to ignore or even discourage these efforts. When the product was ready for commercialization, however, they decided to involve anyway and take the produce to the market. In the SHG case, husbands do not have the option to co-opt women's initiatives, as it is a space reserved for the women's group only, which makes the household business vulnerable to becoming a "battleground" for spousal control instead.

## 8. Conclusion

The paper evaluated the impact of women SHG participation on a set of empowerment outcomes, most of which related to intra-household aspects, but others indicating levels of empowerment at community level. Based on cross-sectional data collected from 192 apple-producing women and corresponding husbands from four subdistricts in the Chencha district of Southern Ethiopia, a scenario emerged in which SHG membership effectively supports empowerment of women at the community level, which is strongly supported by husbands as well, but in which such empowerment gains do not translate into the household domain. If anything, spousal relations appear to have been strained due to stronger male assertiveness in restoring control. Framed differently, women seem to have gained “power with” but did not improve on, or possibly even lost out on, “power to” and “power over” (cf. Pereznieto and Taylor 2014). Our results from the female subsample are consistent with a male backlash effect, even though husbands do not seem to admit as such, or are unaware of their assertiveness in exercising control. Overall, the picture that we obtain is less reassuring than the distinct positive “average” outcome reported by Brody et al. (2017) in their global, but markedly South Asia-biased, systematic review. While the above scenario needs further scrutiny, preferably in a panel study that would be able to capture the effects from increasing economic returns in SHGs as apple trees mature, a tentative explanation for this outlier case may be found in the choice for women-only collective apple cultivation *alongside* family-based apple growing. Apple cultivation was already governed by gendered norms about resource control and distribution, and the introduction of women-only cultivation could have upended this “model” and have triggered defensive instincts among husbands as a consequence.

While acknowledging that the results obtained could be highly context-specific, either driven by Gamo-specific cultural traits and/or distinct economic features of the Ethiopian highlands, our findings speak to results obtained elsewhere in East Africa. For instance, Manzanera-Ruiz and Lizarraga (2016) study reasons of (non)participation in informal women’s groups of tomato production in Soni, Tanzania. Their qualitative work signaled that one of the reasons for not joining a women group was to secure their (secondary) claim on income from home production of tomatoes, which is male-dominated but where women contribute in irrigation and harvesting tasks (101). Similar tactics have been reported for women avoiding engagement with water groups in the Kenyan highlands (Were, Roy, and Swallow 2008). The authors discredit the idea that women are simply submissive to male dominance, but rather calculate the net benefit of participation taking into account an anticipated male backlash. More evidence is provided in a study of SHGs in coffee production in Uganda, where some husbands gained membership into SHGs that were initially female-only (Meier zu Selhausen and Stam 2013). This led to increased male assertiveness in claiming income from coffee and less spousal cooperation in general. A follow-up study on the same case makes clear that joint home production of coffee is susceptible to capture by men, “as 24 percent of wives sold unprocessed coffee at a lower price (to private buyers) to avoid their husband ‘stealing’ the coffee” (Meier zu Selhausen 2016, 143). More systematic evidence for Uganda is available outside the agricultural sector. A large-scale cluster-randomized trial of a program offering \$150 business grants to women in two northern districts finds increased controlling behavior on the part of husbands in households of beneficiary women, as “women assigned to the treatment reported having to give money to their partner more frequently and that their partners had taken money against their will” (Green et al. 2015, 185).

Another possible concern regarding the transferability of our findings lies in the fact that the economic activity of the women SHG is the same as the one that spouses perform jointly. While it is hard to estimate the likelihood of such a scenario, it has recently been acknowledged that it is misguided to consider agriculture in sub-Saharan Africa as a duality between female-managed and male-managed plots, which is common in research on gender disparities in agricultural productivity, for example. As Doss (2018, 46) reminds us, “most farming takes place in households in which men and women share responsibility for the same plots and for the whole of the household enterprise.” The broader message, therefore, is that the selection of a particular economic activity in SHGs that aim for collective income generation is more complex than “only” taking into account market feasibility, interest of the women concerned, and the required level of skills and experience. Anticipation on the interaction of the SHG business with economic activities employed as an individual or as a family is important to avoid a potential backlash. Even if the negative impacts experienced by SHG members prove transitory, or perhaps even a necessary condition for a “deep” transformation of women’s status in society, it would still be worthwhile to make an *ex ante* risk assessment in order to allow for better expectations management. Further research into how SHG activities and household enterprises “communicate” in terms of shifting or undermining “family norms” (cf. Van Staveren and Ode bode 2007) would also help to understand why backlash effects are triggered in some settings, but not in others.

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