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Does market inclusion empower women?

Evidence from Bangladesh

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Abstract

Increased market inclusion through participation in agricultural value chains may increase employment and household incomes, but evidence on its empowerment impacts is mixed. In societies with restrictive social norms, greater market inclusion can enhance existing income and empowerment inequalities by relegating marginalized groups, including women, to low value chains or lower value nodes within those chains. We use primary data from rural Bangladesh to investigate the associations between households' primary economic activity – agricultural wage-earning, production, or entrepreneurship – and absolute and relative levels of men's and women's empowerment. Women in producer households, on average, fare better on empowerment outcomes than women in wage-earner or entrepreneur households; the opposite is true for men. The gap between men's and women's empowerment scores is also lowest in producer households. A decomposition of these results into composite indicators yields insights into potential trade-offs, while accompanying qualitative work highlights the importance of social and cultural norms in shaping the economic roles women can adopt. With a push towards diversification of agriculture into higher value market-oriented crops, more careful programming is needed to ensure that market inclusion translates into an increase in women's empowerment.

Keywords: Gender, Market inclusion, Agriculture, Bangladesh, Women's empowerment, Livelihoods, Mixed methods.

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1 Introduction

Increased market inclusion through participation in agricultural value chains offers rural households a chance for higher economic and social empowerment and enhanced overall worker well-being (Maertens and Swinnen 2012; Minten, Randrianarison, and Swinnen 2009).

Is this potential realized where agriculture, as in South Asia, is often characterized by low productivity and low returns (Gillespie, Harris, and Kadiyala 2012; Rahman and Salim 2013)? Agricultural value chain interventions sometimes exclude poor or marginalized farmers, exacerbating existing inequalities (Dolan and Humphrey 2000; Reardon et al. 2003; Weatherspoon, Cacho, and Christy 2001), including those related to gender (Quisumbing et al. 2015). Even when increasing women's employment and income, gender relations within the household may not improve, particularly in contexts with regressive gender norms (Bain 2010; Barrientos 2014; Dunaway 2014). The gender division of labour (including care work), restrictions on women's mobility, and education disparities might limit women's participation altogether, or relegate them to low value chains or lower value nodes within these chains, resulting in significant gender gaps in earnings and opportunities (Barrientos 2014; Coles and Mitchell 2011; Hill and Vignieri 2014; Njuki et al. 2011). Women's participation in household decision-making and their control over income plays a role in determining who benefits from the returns to higher value production activities (Coles and Mitchell 2011; Quisumbing et al. 2015).

This paper studies how households' participation in different nodes of agricultural value chains in rural Bangladesh influences women's empowerment and investigates the factors associated with men's and women's empowerment both generally, and within the same household, and trade-offs and synergies between different empowerment domains. We use quantitative primary survey data on 1200 households, split equally between those engaged in agricultural production, agricultural entrepreneurship, and agricultural sector wage employment. We also draw on in-depth qualitative work on respondents' engagement in agricultural value chains and their understanding of the term 'empowerment' (Rubin et al. 2018).

Bangladesh illustrates well the tension between traditional norms and the opportunities of increased market engagement. Women make up a substantial proportion of the agricultural workforce, contributing significantly to productivity even while being inadequately compensated (Rahman 2000, 2010). Efforts to improve the value and profitability of agricultural value chains could directly impact women's income, with implications on patterns of household expenditure (Duflo and Udry 2004). While most farmers grow rice, the government, civil society organizations and others are increasingly promoting higher value agricultural crop production to boost farmer income (Rahman and Salim 2013). However, social norms, such as those imposed by the *purdah* system – a religious and social practice that advocates (among other things) that women cover their heads when leaving the home, and that the two sexes are physically segregated - limit women's participation and empowerment in economic and

social spheres (Rahman 2010, Kabeer 1994). Despite this complexity, Bangladesh has seen significant improvements in women's empowerment and economic participation in recent years. Female labour force participation in agriculture and labour-intensive export-oriented industries increased substantially from the 1990s until quite recently, largely supported by the microfinance revolution, accompanied by substantial improvements in several empowerment measures between 2011 and 2015 (ADB 2016; Holland and Rammohan 2019; Rahman and Islam 2013).

Whether increased market inclusion empowers rural Bangladeshi women is a challenging question to answer because empowerment is a complex multidimensional concept (Kabeer 1999; Miedema et al. 2018). Attempts to formalize measures of empowerment that are grounded in theories of empowerment and the resources-agency-achievements framework (Kabeer 1999) are fairly recent. One such measure is the Women's Empowerment in Agriculture Index, or WEAI, an internationally validated index with several key advantages. Notably, the WEAI permits the decomposition of the overall empowerment score into various domains, thereby aiding the identification of key areas of disempowerment for men and women within the same household, and the design of appropriate interventions (Alkire et al. 2012).

This paper uses data from one of four mixed methods pilot studies conducted to adapt the WEAI to analyse value chains and market inclusion (Ahmed et al. 2018; Malapit et al. 2020). This adaptation, known as the project-level WEAI for Market Inclusion (pro-WEAI+MI)[1], is designed to capture how women's participation in various nodes of agricultural value chains affects their empowerment. This paper provides evidence on whether or how value chains work to empower women, and which nodes of the value chain are more closely associated with women's empowerment in rural Bangladesh.

We find that women's empowerment is not necessarily positively correlated with household wealth. Women from households in the richest wealth quintile are less likely to be empowered and have lower empowerment scores relative to those in the poorest quintile. Nor is household entrepreneurship associated with women's empowerment: although entrepreneur households are the wealthiest and wage-earner households the poorest, women in these two types of households have lower empowerment scores and higher intrahousehold inequality than women in producer households. In contrast, men in entrepreneur and wage-earner households have higher overall empowerment scores, on average, than their counterparts in producer households. Men's overall empowerment scores also increase weakly with household wealth.

Our qualitative findings yield interesting insights into local understandings of 'empowerment'. Women's independent decision making and mobility are not often viewed positively or admired, unless their circumstances – widowhood, or a migrant husband – leave them no choice. Instead, characteristics to be admired and emulated are obedience, honor and respect. Women's contributions to agriculture are

[1] Originally called WEAI for value chains (WEAI4VC), this measure was piloted in the Philippines, Bangladesh, Benin, and Malawi.https://weai.ifpri.info/files/2020/10/brochure_2020_pro-weai.pdf

routinely undervalued, and beliefs around their strength and ability limit their participation in many activities. With constraints on women's freedom to conduct financial transactions or market purchases, it is uncertain that agricultural entrepreneurship can improve their agency.

The next section provides context and discusses the data and methods used to estimate the correlates of empowerment across the three types of households in our survey. We present the quantitative results from our estimations and relate the qualitative findings to these. Finally, we discuss the implications of our findings and provide some policy recommendations.

2 Context and data

2.1 Context

The agriculture sector in Bangladesh contributes close to 40% of total employment and almost 15% of the country's GDP (BBS 2020). Cereal cultivation accounts for more than 75% of the total area under cultivation, and rice alone, the largest crop, accounts for over half the total cultivated area (Rahman and Salim 2013). In recent years, however, area under cultivation of horticulture crops – fruits and vegetables – has been steadily increasing, as the government has opted to promote crop diversification (Rahman and Salim 2013). Despite substantial improvements in rice production and the use of inputs (fertilizer, pesticides and irrigation interventions) since the 1960s, the performance of high-yielding varieties of rice has recently declined, as has the rate of technology adoption (Rahman and Salim 2013). The average size of operational landholdings has also fallen steadily since the 1960s, making the adoption of agricultural technologies harder, and prompting the call for reforms to consolidate land and increase farm size, improve agricultural extension services, and build physical capital (Rahman and Rahman 2008; Rahman and Salim 2013).

Women in rural Bangladesh play key roles in the agriculture sector, but their contribution is often unrecognized and inadequately compensated (Rahman 2000, 2010). Cultural restrictions dictate unequal inheritance of land by gender (Kieran et al. 2015) and impose limits on women's mobility, resulting in a very limited female hired labour market (Kabeer 1994). Most women farmers work on land owned in the name of their father or husband. The Green Revolution and its emphasis on automated production technologies had the unintended consequence of displacing women from the agricultural workforce. Some of this decline was reversed with the adoption of new systems of rice cultivation, and recent government-supported policies to promote non-cereal crops such as jute, spices, pulses, vegetables and oilseeds may increase women's employment in agriculture and related sectors (Rahman 2000). Interestingly, the overall female labour force participation rate, while much lower than that of men, has been growing steadily over the last three decades, driven largely by the export-oriented garment sector. As of 2013, however, more than half of all working women in Bangladesh were still employed in agriculture and allied sectors (Rahman and Islam 2013).

2.2 Data

2.2.1 Quantitative survey

The quantitative survey, conducted from May to July 2017, sampled 1200 households, equally distributed across agricultural production, agricultural entrepreneurship, and agricultural wage employment - to construct and compare measures of empowerment. Households are classified according to their economic activities:

(1) A household is classified as a **production household** if any member has participated in crop farming/fishing/livestock raising in the past 12 months.

(2) A household is classified as an **entrepreneur household** if any member owns/operates an agriculture-driven business for commercial purposes in the past 12 months.

(3) A household is classified as a **wage earner household** if any member worked for someone outside the household in exchange of money, food, or goods in the agriculture sector in the past 12 months. This work can be work for agriculture production (crop production, livestock, or fish production), agri-business, or non-agri-business.

These categories are not mutually exclusive. Households typically have a diverse portfolio of activities, and both risk diversification and seasonality of agricultural cycles result in households drawing income from multiple sources. Instead of sampling households by economic category before administering the survey, we sampled 1200 households in total to increase the chances of finding at least 400 households in each category. The sampling of households proceeded in two steps (see Ahmed et al 2018 for a full description of the sampling strategy).

First, five upazilas[2] in the Feed the Future Zone of Influence (FTF ZOI) in southwestern Bangladesh were selected purposively for producer and entrepreneur groups, taking into account diversified agriculture and the availability of enterprises. Four villages were selected as Primary Sampling Units (PSUs) from each upazila with probability proportional to size (PPS) sampling, and a village census conducted in these 20 villages. From the census list, 400 producer and 200 agricultural wage-earner households were selected.

Second, since enterprises were more concentrated in urban or peri-urban areas, a census of entrepreneurs and agriculture-sector employees was conducted in the five upazila and union centres (designated PSUs) in these five upazilas. From these lists, 400 entrepreneur households and 200 wage-earner households were selected.

[2] The upazila is a sub-district administrative region in Bangladesh. There are 491 upazilas in 64 districts.

These two stages combined gave us a total sample size of 1200 – 400 producer households (selected from villages), 400 entrepreneur households (selected from upazila and union centres), and 400 wage-earner households (200 from villages, 200 from upazila and union centres). Table 1 summarizes the sample distribution of selected upazilas and households. Households engaged in diversified agriculture, which comprised agriculture-based enterprises as well as niche commodities like cut flowers and betel leaves, were also included.

Detailed individual and household surveys were administered to the primary male and female decision makers from the final sample of 1200 households. A total of 77 households were woman-only households (56 of these were producer, 2 entrepreneur and 19 wage-earner households); in these, only the primary female decision maker was interviewed. The household questionnaire included eight modules on demographics, agricultural production, employment, entrepreneurship, assets, transfers, and shocks. The individual questionnaire included 19 modules covering key dimensions of empowerment such as livelihoods, resources, income, leadership, time use, and intrahousehold relationships and access to information and extension, as well as specific modules for individuals engaged in particular economic activities. These data are used to compute the pro-WEAI+MI, designed to measure the extent of empowerment of women involved in rural agricultural wage employment and entrepreneurship, in addition to agricultural production. More details on this index are provided in Section 3.1.

The classification into economic activities is at the household and not the individual level, which means a woman who is a producer in an entrepreneur household is classified as an entrepreneur for the purpose of analysis (similarly, a wage-earning woman in a producer household is classified as a producer, and so on).

2.2.2 Qualitative study

A qualitative study was conducted between August and October 2017 with a subset of the interviewees from the quantitative survey across the same three economic categories, as well as market traders and officials knowledgeable about the study communities (Rubin et al. 2018). When there were too few respondents of a certain category, community members identified additional respondents not included in the quantitative surveys. Key informant interviews (including with community leaders and government officials) and focus group discussions with four or five people were used. In total, 102 interviews were conducted. The qualitative research collected information on respondents' engagement with agricultural value chains, their sources of livelihood, barriers on women's participation in these livelihood activities, and respondents' understanding of the meaning of 'empowerment.'.

Table 1: Sample distribution of selected upazilas and households

			Number of households			
Division	**District**	**Upazila**	**Producer**	**Wage-earner (agricultural and entrepreneur)**	**Entrepreneur**	**Total**
Barisal	Barisal	Gouronadi	80	80	80	240
Khulna	Jessore	Jhikargacha	80	80	80	240
Khulna	Chuadanga	Sadar	80	80	80	240
Khulna	Jhenaidah	Kaliganj	80	80	80	240
Khulna	Satkhira	Kaliganj	80	80	80	240
Total			400	400	400	1200

Source: (Ahmed et al. 2018).

3 Methods

3.1 Measuring empowerment

This paper measures empowerment for women and men using an adaptation of the project-level WEAI (pro-WEAI) to market inclusion or value chain studies, known as the pro-WEAI for Market Inclusion, or pro-WEAI+MI (Malapit et al. 2019). The pro-WEAI+MI is composed of two sub-indices, the Three Domains of Empowerment Index (3DE), and the Gender Parity Index (GPI). In this paper, the 3DE is an aggregate measure of men's and women's performance across 11 equally weighted indicators mapped to three primary domains of "agency", or the ability of individuals to make strategic life choices (see below). These three domains of agency are intrinsic ("power within"), instrumental ("power to"), and collective ("power with"). The second sub-index, the GPI, is a score that captures women's achievements in the three domains relative to the men in the same household and is calculated for all dual-adult households (DHH) in our sample.

Intrinsic agency, which assesses an individual's sense of worth, self-confidence, and self-respect, includes indicators for autonomy in income, self-efficacy, attitudes about intimate partner violence (IPV) against women, and respect among household members. Although pro-WEAI comprises 12 indicators, questions on self-efficacy were not included when this survey was fielded.[3] ***Instrumental agency*** includes indicators for input in productive decisions, ownership of land and other assets, access to and decisions on financial services, control over use of income, work balance, and visiting important

[3] Self-efficacy was excluded because this indicator was originally an optional sub-module in the pro-WEAI baseline survey.

locations. ***Collective agency*** determines the power of association and includes indicators for group membership and membership in influential groups.

The empowerment scores for this paper are drawn from achievements on these 11 indicators, each scored as 0 or 1, with 1 indicating that the individual has an adequate achievement, or meets a pre-specified threshold, for that indicator. Table 2 defines each indicator used in our analysis; it also provides the definition and range of the underlying count variable for each domain. An individual is deemed empowered if they are adequate in at least 75% of the weighted indicators.

We adapted the survey tool for this study to evaluate women's and men's empowerment in their roles as agricultural producers, agricultural entrepreneurs, and wage-earners in the rural Bangladeshi context. First, activity categories were modified to include specific livelihood activities: agricultural production (i.e., staple grain farming, livestock raising, horticulture), entrepreneurship (i.e., food processing, sorting/packing, and wholesale trading) and wage-earning (i.e., crop farming, fish production, processing). Second, wage-earner households were not asked any questions related to control over outputs generated from livelihood activities. As a result, for wage-earner households, the definition for the control over use of income indicator does not include input in decisions related to how to use outputs from agricultural activities. Third, we ensured that scales measuring the extent of input in productive decisions and decisions around use of income were equivalent to the scales used to construct the pro-WEAI definitions of adequacy. Finally, we expanded the list of important locations in the mobility module to include a category for religious places, to capture the ability to travel to temple/churches/mosques at least once per month. The adapted locations were then matched to the categories outlined in the pro-WEAI framework.

Table 2: Pro-WEAI indicators, component indicators, and definitions

Pro-WEAI Domain	Indicator definition of adequacy (0/1)	Underlying count variable	3DE Weight
Intrinsic Agency			
Autonomy in income	More motivated by own values than by coercion or fear of others' disapproval: Relative Autonomy Index (RAI) score>=1 RAI score is the sum of responses to the three vignettes (yes=1; no=0), using the following weighting scheme: 0 for vignette 1 (no alternative), -2 for vignette 2 (external motivation), -1 for vignette 3 (introjected motivation), and +3 for vignette 4 (autonomous motivation)	N/A	1/11
Attitudes about intimate partner violence against women	Believes husband is NOT justified in hitting or beating his wife in all five scenarios: 1) She goes out without telling him 2) She neglects the children 3) She argues with him 4) She refuses to have sex with him 5) She burns the food	Number of scenarios where respondent disagrees with IPV against women, range (0-5)	1/11
Respect among household members	Meets ALL of the following conditions related to another household member: 1) Respondent respects relation (MOST of the time) AND 2) Relation respects respondent (MOST of the time) AND 3) Respondent trusts relation (MOST of the time) AND 4) Respondent is comfortable disagreeing with relation (MOST of the time)	N/A	1/11
Instrumental Agency			
Input in productive decisions	Meets <u>at least ONE of the following</u> conditions for <u>ALL of the agricultural activities</u> they participate in 1) Makes related decision solely, 2) Makes the decision jointly and has at least some input into the decisions 3) Feels could make decision if wanted to (to at least a MEDIUM extent)	Number of activities for which respondent has some input or feels can make decisions, range (0-6) for producers, (0-7) for entrepreneurs, and (0-8) for wage earners	1/11

Ownership of land and other assets	Owns, either solely or jointly, at least ONE of the following: 1) Any three assets 2) Land	Total number of assets that are solely/jointly owned by respondent, range (0-18)	1/11
Access to and decisions on financial services	Meets at least ONE of the following conditions: 1) Belongs to a household that used a source of credit in the past year AND participated in at least ONE sole or joint decision about it 2) Belongs to a household that did not use credit in the past year but could have if wanted to from at least ONE source 3) Has access, solely or jointly, to a financial account	Number of accessible sources where respondent solely/jointly participated in credit decisions, range (0-7)	1/11
Control over use of income	Has input in decisions related to how to use BOTH income and output from ALL of the agricultural activities they participate in AND has input in decisions related to income from ALL non-agricultural activities they participate in, unless no decision was made *(Note: for wage-earners input in decisions related to how to use output from activities was NOT included)*	Number of activities respondent has input in decisions on income and output from all activities participated in, , range (0-6) for producers, (0-7) for entrepreneurs, and (0-8) for wage earners	1/11
Work balance	Works less than 10.5 hours per day *(Note: hours worked = time spent in primary activity + (1/2)*time spent in childcare as a secondary activity)*	Total number of hours worked	1/11
Mobility	Meets at least ONE of the following conditions: 1) Visits at least TWO locations at least ONCE PER WEEK of [city, market, family/relative], or 2) Visits least ONE location at least ONCE PER MONTH of [health facility, public meeting, temple/church/mosque] *(Note: the category of religious locations – temple. church, mosque – was added to the list of locations in the original pro-WEAI)*	Number of places visited daily/weekly/biweekly/monthly or when required, range (0-10)	1/11

Collective Agency			
Group membership	Active member of at least ONE group	Number of groups where respondent is an active member, range (0-10)	1/11
Membership in influential groups	Active member of at least ONE group that can influence the community to at least a MEDIUM extent	Number of influential groups respondent is a member, range (0-10)	1/11

Source: (Malapit et al. 2019). Notes: Self-efficacy, a component of intrinsic agency, was excluded from this analysis. The weights for each indicator have been adjusted accordingly. Please see text for details.

3.2 Quantitative analyses

3.2.1 Correlates of individual-level empowerment scores

To analyse the correlates of the individual-level empowerment outcomes, we estimate the following regression model separately for women and men:

$$Empowerment_i = \beta X_i + \varepsilon_i \quad (1)$$

where $Empowerment_i$ is the empowerment related outcome of interest, X_i is a set of individual- and household-level characteristics associated with empowerment, and ε_i is the individual-level estimated error term, clustered at the village level.

Our individual-level empowerment outcomes are as follows:

1) Binary indicator for whether the individual is empowered (1=empowered)
2) Continuous empowerment score calculated as the share of the 11 weighted pro-WEAI indicators in which the individual is adequate (range 0-1)
3) Binary measures of pro-WEAI indicators (1= adequate)
4) Underlying count variables for specific pro-WEAI indicators

We estimate equation (1) using a probit model for the binary indicator of whether the individual is empowered, and a fractional regression model for the continuous empowerment score. For the sub-domain analyses, we use a probit model for the binary pro-WEAI domain-wise sub-indicators, and a Poisson regression model for the underlying count variables. We use all four outcomes for a more nuanced exploration of the sub-domains of the empowerment measures, some of which could plausibly have opposing associations with household type or other covariates of interest. The composite outcome of whether an individual is empowered, while useful, can mask movements in the distribution of empowerment scores that do not change the proportion above the threshold, as well as movements in the underlying binary and count variables for each indicator. Indicator-specific changes often provide insight into the synergies and trade-offs between different aspects of empowerment, and how these differ for men and women.

Individual-level characteristics include an indicator for whether a woman respondent lives in a woman-only household (WOH) (1=WOH; only included in the female respondent regressions), the years of schooling of the respondent, a dummy variable for whether the respondent is married, age of the respondent in years and its square. Household-level characteristics include indicators for household type (reference group: producer households), household size, indicators for the household receiving cash assistance or transfers or in-kind assistance or transfers, and indicators for asset/wealth quintiles (reference group: poorest quintile). We also include upazila-level fixed effects.

3.2.2 Identifying factors associated with household-level empowerment measures

To examine correlates of relative empowerment outcomes between men and women respondents within the same household, we use the following regression model:

$$Intrahousehold\ Inequality_i = \beta Z_i + \epsilon_i \quad (2)$$

where $Intrahousehold\ Inequality_i$ is the measure of women's empowerment scores relative to those of men in the same household (see below), Z_i is a set of individual-level characteristics, and ϵ_i is the individual-level estimated error, clustered at the village level. Regressions for intrahousehold level outcomes are only estimated for men and women respondents that live in a DHH. The covariates used in the household-level regressions are identical to those in the individual-level regressions.

We use three measures of intrahousehold inequality: (1) a binary indicator for intrahousehold parity (=1 if the woman is empowered or has the same empowerment score as the man); (2) a continuous inequality score that measures the difference between the male empowerment score and the female empowerment score, ranging from -1 to 1. A negative inequality score suggests that the woman is more empowered than the man in the household while a positive inequality score suggests the opposite; and (3) a categorical variable with categories for (i) whether the man has a higher empowerment score than the woman, (ii) whether the woman has a higher empowerment score than the man, or (iii) whether the man and woman have the same empowerment score.

We estimate a probit model for household parity, a simple OLS regression model for the continuous score of intrahousehold inequality, and multinomial logit regressions for the categorical variables listed above, where the reference category is the binary indicator for the man and woman having equal empowerment scores.

3.3 Qualitative analysis

Of the 102 interviews conducted, 37 were transcribed by a local Dhaka firm, and translated from Bangla to English. These transcriptions were reviewed by the field teams several times. The subset of interviews transcribed for further analysis was based on field officers' assessment that these adequately represented the full sample. See Rubin et al. (2018) for a discussion of possible limitations arising from this and from the process of translation more generally. The final transcripts were coded for themes according to a code list prepared by the field officers and analysed using NVivo Pro 11.

3.4 Individual and household-level descriptive statistics

Few women belong to WOHs –14.5% of women in producer households, but 5% or fewer women in wage-earner and entrepreneur households (Table 3). Most respondents have some primary or secondary education, but very few have completed or studied beyond secondary school. Among the three household types, entrepreneur households report the highest average years of schooling at slightly over 6 years for both men and women. Wage-earner households report the lowest averages at 4 years for men and 3.2 for women; these households also have the largest percentages of men (38%) and women (27%) with no schooling at all (not reported). Producer households lie in between. Almost everyone in the sample is married. The mean age is 35-38 years for women, and 41-46 years for men, with slight differences across household types.

Average household size is 4.3 members for producer and wage-earner households, and 5 members for entrepreneur households. Fewer men and women in entrepreneur households report receiving cash or in-kind assistance/transfers than in the producer or wage-earner households. Men and women from entrepreneur households are concentrated in the top two wealth quintiles (50% in the wealthiest, and close to 24% in the second wealthiest), while close to two thirds of the wage-earner households fall in the poorest two quintiles. Producer households are split largely across the middle three wealth quintiles.

Table 3: Household and individual characteristics, by household type and sex

	Producer		Entrepreneur		Wage-earners	
	W	M	W	M	W	M
Individual level characteristics						
Respondent in woman-only household (WOH)	14.5		0.5		5.2	
Years of schooling	4.9	4.7	6.2	6.4	4.1	3.3
Married (%)	97.1	97.9	98.7	97.2	94.5	96.5
Mean age of respondent (years)	37.8	46.2	36.5	44.4	34.7	41.3
Household level characteristics						
Average household size	4.3	4.5	5.0	5.0	4.2	4.3
Household received cash assistance/transfer (%)	32.2	30.6	22.2	22.7	35.6	34.7
Household received in-kind assistance/transfer (%)	29.1	29.4	11.6	11.6	37.6	35.9
Wealth (%)						
Poorest	12.7	8.6	3.5	3.3	37.8	34.1
Poor	24.4	24.2	7.1	7.1	30.1	32.1
Middle	25.2	26.3	14.9	14.9	22.7	23.8
Wealthy	28.3	30.6	23.9	24.0	8.8	9.4
Wealthiest	9.4	10.4	50.6	50.8	0.6	0.6
Number of households	**385**	**327**	**397**	**396**	**362**	**340**

Source: Authors' calculations. Notes: Differences in household level characteristics between men and women of the same household type are driven by the presence of WOHs in the sample. W: women, M: men.

3.5 Empowerment measures – descriptive statistics

3.5.1 Summary of pro-WEAI indicators

More men are empowered than women in all three types of households (Table 4), but with differences across household types. In entrepreneur households 31% of the men are empowered, compared to 26% in producer and only 21% in wage-earner households. In contrast, the highest proportion of empowered women is in producer households, at 15%, compared to only 4% and 3% in wage-earner and entrepreneur households, respectively. Average empowerment scores follow the same pattern across household types; with the largest gap between men's and women's empowerment scores in the entrepreneur households (.73 versus .49) and the smallest in producer households (.70 versus .60).

When broken down by pro-WEAI indicator, we see roughly similar patterns by household type. Adequacy is high for men and women in autonomy in income, input in productive decisions, ownership of land and other assets, and access to and decisions over credit, but considerably lower in attitudes about IPV against women, work balance and both measures of collective agency. Relative to producer households, women in entrepreneur and wage-earner households fare worse on autonomy in income, input in productive decisions, control over use of income, and membership in influential groups. Relative to men, women in all household types demonstrate low adequacy across indicators, but the gaps are largest in input in productive decisions and control over use of income (for women in entrepreneur and wage-earner households) and mobility. Exceptions are the collective agency indicators, where a higher proportion of women are adequate than men, likely reflecting deliberate targeting of women for group formation by the government and NGOs, as with microfinance-based groups.

Table A.1 presents the underlying count variables for the 11 indicators of pro-WEAI (see Table 2 for definitions). The trends remain broadly similar to those indicated by the proportion of men and women adequate in each indicator by household type in Table 4.

Table 4: Summary of pro-WEAI indicators

	Producer		Entrepreneur		Wage-earners	
Indicator	W	M	W	M	W	M
Empowered	15.1	26.0	3.3	30.8	4.1	21.2
Empowerment score (average)	0.60	0.70	0.49	0.73	0.49	0.70
% adequate on pro-WEAI indicators						
Intrinsic agency						
Autonomy in income	81.0	89.9	80.4	93.4	80.7	89.1
Attitudes about IPV against women	59.2	66.7	69.0	72.7	66.6	64.7
Respect among household members	55.8	79.8	57.7	78.5	50.6	80.9
Instrumental agency						
Input in productive decisions	93.8	95.4	19.9	98.2	15.5	97.9
Ownership of land and other assets	81.3	98.5	81.9	98.5	72.4	97.6
Access to and decisions on financial services	70.4	80.4	77.8	92.7	64.9	82.1
Control over use of income and outputs	66.2	71.9	12.3	96.5	15.2	97.6
Work balance	61.8	59.9	55.7	33.1	77.9	51.2
Visiting important locations	27.5	99.7	23.4	100.0	31.5	98.8
Collective agency						
Group membership	50.6	19.3	42.8	27.8	52.2	8.8
Membership in influential groups	14.5	8.0	14.1	11.6	14.4	3.5
N	**385**	**327**	**397**	**396**	**362**	**340**

Source: Authors' calculations. The empowerment score ranges from 0 to 1, with a higher score indicating greater empowerment. W: women, M: men.

3.5.2 Contributors to disempowerment

Figure 1 decomposes the total levels of disempowerment for men and women in all household types to investigate which indicators contribute the most to overall disempowerment. Among women in entrepreneur and wage-earner households, control over use of income is the largest contributor to disempowerment, followed closely by input in productive decisions. In contrast, these indicators are the smallest contributors to disempowerment for men. Group membership and membership in influential groups are large contributors to disempowerment for both men and women across all three household categories. Indicators related to intrinsic agency (autonomy in decision making, attitudes about IPV against women, and respect among household members) contribute minimally to overall disempowerment. Table A.2 presents the indicator-wise disempowerment for women and men across the three types of households.

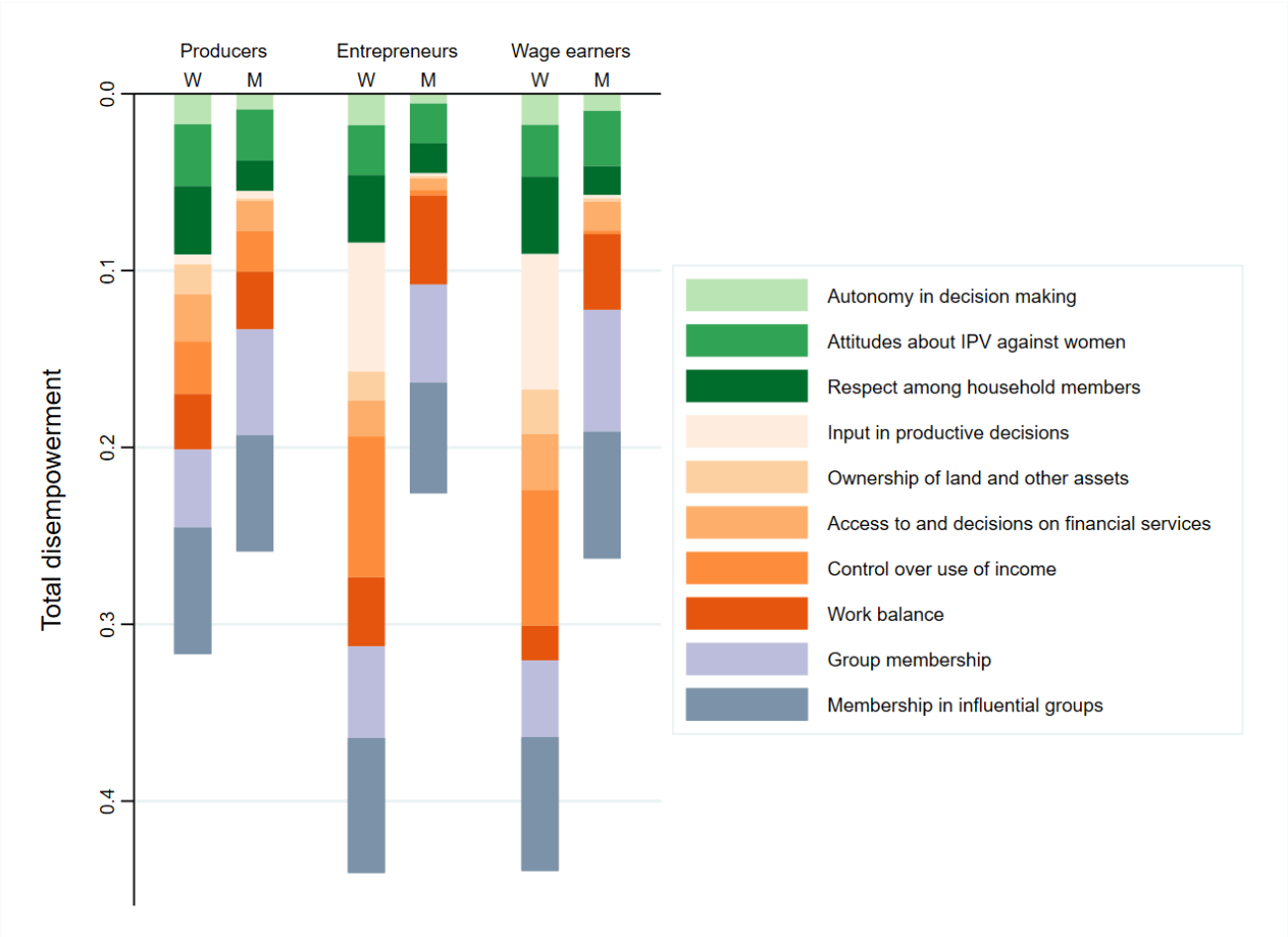

Figure 1: Contributors to disempowerment for men and women by household type

Notes: W: women, M: men.

4 Results

4.1 Factors associated with individual-level empowerment scores

Table 5 presents the individual and household-level factors associated with whether the man or woman is empowered, and the continuous empowerment scores. Women in a WOH are 10.1 percentage points (pp) more likely to be empowered ($p<0.05$) and have a significantly higher empowerment score ($p<0.01$). Education is also positively correlated with empowerment for both men and women, though the effects are stronger for men – a one-year increase in years of schooling is significantly associated with a 1 pp increase in the likelihood of the man being empowered ($p<0.01$). The relationship between a woman's education and the likelihood she is empowered, while positive, is not statistically significant. However, years of schooling is positively and significantly associated with increases in the empowerment scores for women and men. Older women are both more likely to be empowered and

have higher empowerment scores; this association might be concave, since the coefficient on the age-square variable is negative.

Relative to producer households, women in entrepreneur households are 5.5 pp less likely to be empowered ($p<0.01$) and have empowerment scores that are significantly lower ($p<0.01$). The same is true for women in wage-earner households, though the magnitude of the shortfalls is larger. However, relative to producer households, men in both entrepreneur and wage-earner households have slightly higher empowerment scores, though these are only statistically significant at the 10% level. Receiving cash or in-kind transfers seems to have a small to null association with empowerment of either men or women. Wealth quintiles, on the other hand, show opposite associations for women and men. Women in the richest quintile are 4.8 pp less likely to be empowered ($p<0.01$) relative to women in the poorest quintile, and to have significantly lower empowerment scores on average ($p<0.05$). In contrast, relative to the poorest quintiles, men in the richest quintile have significantly higher empowerment scores ($p<0.01$).

Composite indicators of empowerment can mask underlying associations, which could operate in mutually reinforcing or weakening ways. We unpack this dynamic by looking at the associations with the binary and underlying count variables for each of the pro-WEAI indicators (Table 6). For brevity, we retain only the coefficients on the main covariates of interest, i.e., the household type relative to the base category of producer households. However, we summarize broad associations with other covariates in the last row of the table.[4]

Relative to the producer households, women in entrepreneur and wage-earner households are 10-11 pp more likely to report that IPV against women is not justified ($p<0.1$ and $p<0.05$, respectively). The association between the underlying count variable and household type is not statistically significant for men or women.

Women in entrepreneur and wage-earner households are 72 pp ($p<0.01$) and 85 pp ($p<0.01$) less likely to be adequate in input in productive decisions, relative to women in producer households. Women in entrepreneur households provide input or feel they can make decisions on 2.7 fewer activities than women in producer households ($p<0.01$), the same is true for women in wage-earner households as well (point estimate 2.7, $p<0.01$).[5] The association between household type and men's input in productive decisions is not statistically significant, but men in entrepreneur and wage-earner households provide

[4] Detailed results are available upon request.

[5] This could reflect that women were less engaged in agricultural production but more engaged in other economic decisions, or that agricultural production involves a greater number of activities (crop production, livestock raising etc); unfortunately, we are unable to test this with the data at hand. The reader should also note that the number of activities does differ slightly among the three household types, see Table 2 for complete definitions.

input or feel they can make decisions on 1.1 fewer activities on average ($p<0.01$), relative to men in producer households.

The association between household type and the likelihood of being adequate in ownership of land and other assets is not statistically significant for men or women. However, we find that relative to their counterparts in producer households, men in entrepreneur households own 0.05 fewer assets on average ($p<0.1$), and women in wage-earner households own 0.06 fewer assets on average ($p<0.1$). Men in both entrepreneur and wage-earner households are more likely to be adequate in access to and decisions on financial services, but the associations are not statistically significant for women. Relative to their counterparts in producer households, women entrepreneurs are 40 pp ($p<0.01$) less likely to have control over use of income and output from all activities and women wage-earners are 47 pp ($p<0.01$) less likely to have adequate control over use of income, while men from both household types are 13 pp more likely to have adequate control ($p<0.01$). However, the underlying count variable shows that both men and women have fewer activities in which they can provide input or make decisions, relative to the producer households. Men in entrepreneur and wage-earner households are respectively 20 pp ($p<0.01$) and 10 pp ($p<0.05$) less likely to attain adequacy in work balance, reflected also in the higher number of hours worked. Women in wage-earner households, in contrast, are 16 pp more likely to be adequate in the work balance domain than women in producer households ($p<0.01$), and worked, on average, .66 hours less ($p<0.01$). Men in wage-earner households visit 0.3 fewer places than men in producer households ($p<0.05$), but differences in mobility are small across household types. This is unsurprising given the descriptive statistics presented above – men are almost universally adequate in the mobility domain, while women of all household types display very low levels of adequacy.

On collective agency measures, men earning wages are 11 pp ($p<0.01$) and 4 pp ($p<0.01$) less likely to achieve adequacy on group membership and membership in influential groups than men in producer households, with corresponding negative associations with the underlying count variables. We do not find any statistically significant associations between household type and adequacy on collective agency measures for women.

Finally, the last row of Table 6 summarizes other broad associations between covariates and measures of women's empowerment. Detailed results are available upon request. Older and more educated women and those in WOHs have, on average, higher measures of empowerment, consistent with Table 5. The negative association of women's empowerment with household wealth remains true for most measures; more educated men and those belonging to richer quintiles are, on average, more empowered.

Table 5: Correlates of men and women's empowerment

	Probit		**Fractional**	
	Whether empowered (=1 if empowered)		**Empowerment score (continuous)**	
	W	M	W	M
Respondent is in a woman-only household (WOH)	0.101**		0.006***	
	(0.050)		(0.001)	
Years of schooling	0.002	0.010***	0.022**	0.013***
	(0.003)	(0.004)	(0.008)	(0.004)
Married (=1)	0.017	0.070	0.025	0.029
	(0.022)	(0.076)	(0.026)	(0.021)
Age (years)	0.006**	-0.006	0.689***	-0.016
	(0.003)	(0.006)	(0.084)	(0.070)
Age squared	-0.000*	0.000	-0.301***	0.019
	(0.000)	(0.000)	(0.041)	(0.035)
Household type (reference=household is a producer)				
Entrepreneur (=1)	-0.055***	0.019	-0.027***	0.006*
	(0.016)	(0.045)	(0.005)	(0.003)
Wage-earner (=1)	-0.063***	-0.020	-0.032***	0.005*
	(0.014)	(0.039)	(0.004)	(0.003)
Household size	-0.003	-0.006	-0.036***	-0.011
	(0.004)	(0.008)	(0.012)	(0.009)
Household received cash assistance/transfer (=1)	-0.017	0.006	0.003	0.001
	(0.016)	(0.030)	(0.003)	(0.002)
Household received in-kind assistance/transfer (=1)	0.004	0.071*	0.005*	0.003
	(0.015)	(0.041)	(0.003)	(0.002)
Asset/wealth quintile (reference=poorest) †				
Quintile 2	-0.031**	0.008	0.001	0.003
	(0.014)	(0.051)	(0.003)	(0.002)
Quintile 3	-0.020	0.005	-0.002	0.004
	(0.018)	(0.055)	(0.003)	(0.002)
Quintile 4	-0.023	0.007	-0.004	0.003
	(0.015)	(0.052)	(0.004)	(0.003)

Quintile 5 (Richest)	-0.048***	0.096	-0.010**	0.010***
	(0.016)	(0.068)	(0.004)	(0.003)
Observations	1144	1063	1144	1063
Pseudo R-squared	0.148	0.035	0.021	0.003

Source: Authors' calculations.

Notes: Standard errors in parenthesis. *, **, *** represent significance at 10, 5 and 1 percent, respectively. Marginal effects are reported for the fractional regressions. (=1) represents binary variables and the probit coefficients report the discrete change. Upazila fixed effects are included in all regressions. †Asset index using principal component analysis based on roof and floor material, number of bedrooms, access to toilet and electricity, improved cooking fuel source, dwelling in excellent state, land ownership, large livestock, fishing equipment, mechanized farm equipment, inventory/stock business, non-agricultural land, mechanized means of transport, shop facility, and storage facility. W: women, M: men.

Table 6: Correlates of Pro-WEAI indicators and their component indicators

	Probit				**Poisson**			
	Reference group: Household is a producer							
	Household is an entrepreneur (=1)		Household is a wage-earner (=1)		Household is an entrepreneur (=1)		Household is a wage-earner (=1)	
	W	M	W	M	W	M	W	M
Intrinsic agency								
Attitudes about IPV against women								
Adequate in attitudes about IPV against women indicator (=1)	0.101*	0.029	0.113**	-0.002				
	(0.052)	(0.048)	(0.051)	(0.033)				
Number of scenarios where respondent disagrees with IPV against women					0.059	0.012	0.053	-0.009
					(0.038)	(0.023)	(0.037)	(0.023)
Instrumental agency								
Input in productive decisions								
Adequate in input in productive decisions indicator (=1)	-0.723***	0.001	-0.849***	0.002				
	(0.050)	(0.002)	(0.028)	(0.002)				
Number of activities for which respondent has some input or feels can make decisions					-2.666***	-1.101***	-2.728***	-1.104***
					(0.127)	(0.040)	(0.130)	(0.036)

Ownership of land and other assets								
Adequate in ownership of land and other assets indicator (=1)	0.025	-0.007	-0.043	0.004				
	(0.037)	(0.010)	(0.035)	(0.005)				
Total assets solely/jointly owned by respondent					-0.037	-0.047*	-0.063*	-0.010
					(0.042)	(0.027)	(0.037)	(0.028)
Access to and decisions on financial services								
Adequate in access to and decisions about credit indicator (=1)	0.067	0.090***	0.002	0.038**				
	(0.044)	(0.022)	(0.043)	(0.017)				
Number of accessible sources where respondent solely/jointly participated in credit decisions					0.117	0.152**	-0.027	0.054
					(0.112)	(0.066)	(0.101)	(0.056)
Control over use of income								
Adequate in control over use of income and output indicator (=1)	-0.399***	0.129***	-0.466***	0.134***				
	(0.036)	(0.026)	(0.044)	(0.021)				
Number of activities respondent has input in decisions on income and output from all activities participated in					-2.952***	-1.008***	-2.584***	-1.015***
					(0.168)	(0.033)	(0.124)	(0.034)
Work balance								
Adequate in work balance indicator (=1)	-0.069	-0.195***	0.163***	-0.104**				
	(0.050)	(0.049)	(0.047)	(0.047)				

Number of hours worked=time spent on primary activity plus ½ time spent in childcare as secondary activity					0.018	0.112***	-0.659***	0.063**
					(0.035)	(0.030)	(0.119)	(0.031)
Mobility								
Adequate in mobility indicator (=1)	0.000		0.043	-0.019				
	(0.049)		(0.037)	(0.014)				
Number of places visited daily/weekly/biweekly/monthly or when required					0.011	0.010	0.019	-0.033**
					(0.024)	(0.019)	(0.021)	(0.015)
Collective agency								
Group membership								
Adequate in group membership indicator (=1)	0.013	0.040	-0.057	-0.105***				
	(0.051)	(0.029)	(0.045)	(0.026)				
Number of groups where respondent is an active member					-0.003	0.152	-0.080	-0.775***
					(0.107)	(0.160)	(0.079)	(0.237)
Membership in influential groups								
Adequate in membership in influential groups indicator (=1)	0.026	-0.001	-0.022	-0.040***				
	(0.035)	(0.018)	(0.028)	(0.015)				
Number of influential groups respondent is a member					0.254	-0.023	-0.038	-0.639*
					(0.263)	(0.247)	(0.227)	(0.341)

Other associations	Associated with measures of **women's** empowerment: *Positive associations*: Indicator for woman-only household, educational level, age. *Negative associations*: Wealth quintiles 4 and 5, relative to poorest quintile. Associated with measures of **men's** empowerment: *Positive associations:* Educational level, wealth quintiles 3, 4, 5 relative to poorest quintile.	Associated with measures of **women's** empowerment: *Positive associations*: Indicator for WOH, educational level, age. Receiving cash assistance had positive associations with making credit-related decisions. *Negative associations:* household size, wealth quintile 5 relative to poorest quintile. Associated with measures of **men's** empowerment: *Positive associations:* Educational level, wealth quintiles 3, 4, 5 relative to poorest quintile.

Source: Authors' calculations. Notes: Standard errors in parenthesis. *, **, *** represent significance at 10, 5 and 1 percent, respectively. W: women, M: men. See Table 2 for definitions of outcomes measures. Mobility among men in the entrepreneur households is perfectly predicted by the covariates.

4.2 Factors associated with household-level empowerment measures

Among the 1069 dual-adult households in our sample, men had higher empowerment scores than women in 32% of the households, compared to only 5% of the households where women had higher empowerment scores than men (Table 7). In 63% of the households, men and women had the same empowerment score.

We find positive associations between men's marital status and intrahousehold parity. Older women are 3 pp more likely to achieve parity with their partners. Individuals in entrepreneur and wage-earner households are almost 20 pp less likely to achieve intrahousehold parity relative to those in producer households. Household wealth shows a monotonically negative association with parity, with the richest households 13 pp ($p<0.01$) and households in the second poorest quintile 6 pp less likely ($p<0.1$) to achieve parity relative to those in the poorest quintile. A one-year increase in men's schooling is associated with 0.003 reduction in the inequality gap. The difference in empowerment scores between men and women in entrepreneur and wage-earner households is significantly larger compared to producer households; the inequality gap increases in the upper two wealth quintiles.

The multinomial logit regressions show no significant relationships between education and marital status of either respondent and the likelihood of the man or woman having a higher empowerment score relative to the base category. However, belonging to an entrepreneur or wage-earner household is strongly positively associated with the likelihood that the man has a higher empowerment score than the woman. Access to in-kind assistance is associated with a 20 pp greater likelihood of the man having a higher empowerment score than the woman, and a corresponding 6 pp reduction in the likelihood of the woman having a higher empowerment score than the man. Finally, positive marginal effects associated with richer wealth quintiles suggest that wealth is associated with an increased likelihood of the man having a higher empowerment score than the woman.

Table 7: Correlates of intrahousehold inequality (dual-headed households only)

	Probit	**OLS**	**Multinomial logit, *Base = households where man and woman are equally empowered***	
	Parity (=1 if woman is empowered or as empowered as a man)	**Intrahousehold inequality (Male empowerment score - Female empowerment score)**	**Whether man is more empowered (=1)**	**Whether woman is more empowered (=1)**
Years of schooling, male respondent	-0.002	0.003**	-0.001	-0.003
	(0.004)	(0.002)	(0.004)	(0.002)
Years of schooling, female respondent	0.003	-0.004	0.000	0.001
	(0.006)	(0.002)	(0.006)	(0.003)
Married (=1), male respondent	0.134**	-0.003	-0.168	-0.028
	(0.067)	(0.057)	(0.155)	(0.061)
Married (=1), female respondent	0.121	-0.006	-0.168	0.578
	(0.089)	(0.066)	(19.968)	(34.889)
Age (years), male respondent	-0.006	0.001	0.008	-0.004
	(0.011)	(0.005)	(0.014)	(0.006)
Age (years), female respondent	0.034***	-0.021***	-0.047***	0.005
	(0.013)	(0.006)	(0.015)	(0.007)
Age squared, male respondent	0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Age squared, female respondent	-0.000**	0.000***	0.001***	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Household type (reference=household is a producer)				
Entrepreneur (=1)	-0.182***	0.095***	0.195***	-0.064***
	(0.033)	(0.019)	(0.035)	(0.018)
Wage-earner (=1)	-0.194***	0.122***	0.253***	-0.091***
	(0.031)	(0.018)	(0.035)	(0.023)
Household size	-0.007	0.006*	-0.000	-0.005

	(0.007)	(0.003)	(0.009)	(0.005)
Household received cash assistance/transfer (=1)	0.032	-0.008	-0.018	-0.012
	(0.031)	(0.014)	(0.032)	(0.017)
Household received in-kind assistance/transfer (=1)	-0.182***	0.095***	0.195***	-0.064***
	(0.033)	(0.019)	(0.035)	(0.018)
Asset/wealth quintile (reference=poorest)				
Quintile 2	-0.063*	0.017	0.040	-0.025
	(0.034)	(0.019)	(0.047)	(0.026)
Quintile 3	-0.077**	0.031	0.094*	0.012
	(0.036)	(0.022)	(0.049)	(0.024)
Quintile 4	-0.096***	0.043**	0.124**	-0.001
	(0.032)	(0.022)	(0.053)	(0.025)
Quintile 5 *(Richest)*	-0.127***	0.099***	0.252***	0.004
	(0.040)	(0.027)	(0.065)	(0.032)
Constant		0.480***		
		(0.096)		
Observations	1069	1059	1059	1059
Adjusted R-squared		0.171		
Pseudo R-squared	0.105		0.105	0.105

Households in which empowerment scores are equal (% of total): 63.1
Households in which man has higher empowerment score (% of total): 31.9
Households in which woman has higher empowerment score (% of total): 5.0

Source: Authors' calculations

Notes: Standard errors in parenthesis. *, **, *** represent significance at 10, 5 and 1 percent, respectively. Marginal effects reported for the multinomial logit regressions. For further information, see additional notes in Table 5.

5 Qualitative findings

The qualitative work supports several key findings from the broader literature on women's roles in agriculture in Bangladesh and on the severe restrictions cultural norms place on women's participation and men's recognition of their contributions (Rubin et al. 2018).

Instead of using the term 'empowerment' in translating interview and focus group guides, the qualitative research team discussed which qualities of men or women were to be admired and asked how respondents would describe women in their community who were able to make and execute important decisions regarding their lives. Perhaps unsurprisingly, women who took decisions on their own without consulting their husbands were not admired, nor were women who worked outside the home or went to the market or bank. Permissible exceptions were made for women supporting their families, such as widows, or women whose husbands were sick or absent for work. Obedience, honor and respect were terms used to describe 'good' women; women who fought with their husbands or disobeyed them were not respected.

Households participated in a wide range of livelihoods activities: farming of staples, horticultural crops and, in some cases, non-food crops like betel leaf and jute, along with raising poultry and livestock and a range of agribusinesses. Landless laborers and sharecroppers also worked on a variety of tasks. Consistent with the literature (Rahman 2000, 2010), women's contribution to agricultural tasks is often underestimated by men, though recognized by the women themselves. Cultural norms around mobility, 'honor' and 'respect', along with beliefs about women's strength and ability (including whether they wear appropriate attire to be able to work effectively), limit women's participation in work in the fields. Women instead work in or near the homes, managing their own homestead gardens, but also engaging in tasks such as crop sorting and cleaning, extracting jute fibers and so on. The absence of women from the fields seems to translate into a failure to account for their contributions, with some men terming their role as 'women's work' and not a serious involvement in agriculture,

Rubin et al (2018) outline a number of barriers to women's active participation in agriculture, ranging from perceptions of their inferior physical strength, to their lack of access to resources such as credit, inputs, and technical knowledge, to cultural norms, which are all pervasive. Women face many restrictions: they may be limited in traveling alone; in meeting with men outside their families; or in working in the fields if doing so while wearing a saree will be considered too revealing. Women are also inhibited by the real or perceived risk of physical and sexual violence outside the home. Finally, a working woman risks dishonoring her family if her employment is perceived as meaning her husband is incapable of looking after his family's economic needs.

Nonetheless, some Bangladeshi women known to the respondents have successfully established agribusinesses, have migrated to larger cities or overseas to work in manufacturing or service industries,

or completed a post-graduate education, suggesting that pathways do exist for women to explore other opportunities outside their villages.

These findings emphasize the many complexities around increasing women's empowerment within agriculture and agricultural value chains. Rubin et al (2018) conclude that given existing barriers to women working as producers and agricultural wage-earners, engaging women instead in other nodes of the value chain, especially in tasks that can be performed from homes or with other women, could increase women's incomes while continuing to be culturally acceptable. Social norms are ubiquitous and highly restrictive; despite progress, much needs to be done to enhance women's ability to participate in and gain from agricultural economic activity.

6 Discussion and conclusion

Bangladesh's agricultural sector has historically revolved around the production of rice, the main staple. More recently, efforts both by the government of Bangladesh and other organizations are encouraging shifts towards higher-value agricultural crops, including cut flowers, jute, spices, oilseeds and vegetables. Studies elsewhere have shown that market-oriented production through high-value agricultural value chains could increase women's employment and income, improve economic and social empowerment, and help reduce poverty. But agricultural value chain interventions could also unintentionally exacerbate existing inequalities by excluding those who are poor or otherwise marginalized. Value chains, after all, are subject to the social and cultural restrictions of the contexts in which they operate. In Bangladesh, with its strict religious and social norms constraining women's mobility and their ability to participate actively in economic, social and financial spheres, the question arises - does a move in the household's primary economic activity from agricultural production or wage-earning work to entrepreneurship necessarily empower women in those households? To provide a partial answer to this question, we assess how women's absolute and relative empowerment varies in households participating in different nodes of the value chain.

In answering this question using survey data, we find that more men are empowered, and have higher empowerment scores, than women in all three types of households. We also find a clear distribution of these household types by wealth quintiles – entrepreneur households are largely concentrated in the richest two quintiles, wage-earners in the poorest two, while producer households are largely distributed in the middle three wealth quintiles – unsurprising, since entrepreneurship is inherently risky, and wage-earners are likely those households without access to land. Belonging to entrepreneur or wage-earner households is not necessarily empowering for women: women in these household types are, on average, fare worse on empowerment outcomes than their counterparts in producer households, which also have the smallest gap between male and female empowerment scores. In contrast, men in entrepreneur households fare better relative to men in producer households. We note here the caveat mentioned

before that these results were estimated using the primary livelihood activity of the household rather than the individual, necessitated by insufficient sample sizes and consequent low power. Ahmed et al. 2018 provides empowerment statistics for the subsample of women who participated in production, entrepreneurship, and wage employment. Further analysis using individual-level livelihoods may provide a more nuanced understanding of how intrahousehold dynamics influence empowerment and gender parity along different value chain nodes.

Decomposing the overall empowerment measures into the underlying indicators and corresponding count variables yields a similar pattern. Possible exceptions include the results that, relative to women in producer households, women in entrepreneur and wage-earner households are more likely to be adequate in their attitudes towards IPV, and, to some extent, in the work balance indicator. Our qualitative findings point to the commonly held misconceptions around women's contribution to agricultural work, and an underestimation of the amount of time women spend engaged in activities crucial to household income generation, even as our quantitative results show that women work longer hours than men and are less likely to be adequate in work balance. Although we also use count variables to measure empowerment, we caution that adding more activities, for example, does not necessarily signal increased empowerment, as women with already undervalued and overburdened workloads will have to take on more work. Furthermore, increasing the number of activities in which one works may be easier in some value chain nodes, such as crop production, but more difficult in other nodes such as entrepreneurship or with increased specialization.

What do these findings mean for our overall research question? Household agricultural entrepreneurship is not consistently associated with improved empowerment for women, as measured by the pro-WEAI+MI, even while it appears to be positively associated with men's empowerment. Nor is household wealth associated with greater empowerment for women, consistent with other work in South Asia (Acharya et al. 2010; Kabeer 2020; Mahmud, Shah, and Becker 2012). Women in wealthier households might not be compelled to participate in productive or income-generating work for economic reasons, and instead be confined to their homes or take on more care work. Diagnosing the specific areas of inadequacy for women in wealthier versus poorer households can shed light on how wealth interacts with norms to influence empowerment. In addition, because entrepreneur households are more likely to be wealthy, it is difficult to separate whether women in these households are more likely to be disempowered because wealthier households tend to have more restrictive norms or if these findings are an artefact of our sample that categorizes women producers as entrepreneurs because of household-livelihood categorization. The qualitative results point to 'sticky' barriers to improving women's roles within and outside the household, especially around what types of characteristics or behaviors are considered 'appropriate' – obedience, hard work, respect, honor – or 'inappropriate' – answering back, opposing your husband, or taking decisions without consulting him. More than 90% of our sample practised *purdah*. Under cultural and social norms that restrict women's free and active

participation in economic spheres, increased market inclusion might serve to increase inequalities by limiting women to low-value nodes of agricultural value chains. For example, women could be responsible for tasks such as cleaning and sorting the crop within the home but prevented from participating in taking the crop to the market, in financial transactions including banking, or in decisionmaking on the purchase of inputs.

Nevertheless, even these sticky barriers can be changed over time. Unlike several of its South Asian neighbors, Bangladesh has performed well on several social indicators over the past several decades. The female labor force participation rate, while lower than that of men, has been steadily increasing, even as India has seen a consistent steady decline in the same indicator. Evidence shows that exposure to women leaders reduces bias and increases real outcomes such as educational attainment (Beaman et al. 2009, 2012), but further research is needed on the mechanisms through which increasing women's market inclusion and LFP improves agency and economic empowerment, while tracking potential unintended consequences such as backlash from spouses or family members, or trade-offs with domestic work or leisure. While not sufficient, improving women's participation in the economic workforce and their consequent contribution to household income is necessary to improve their agency and empowerment, and to change the expectations of the next generations of young men and women.

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Appendix

Table A.1: Summary of pro-WEAI indicator-wise underlying count variables

Indicator-wise underlying count variables	Producer		Entrepreneur		Wage-earner	
	W Mean (SD)	M Mean (SD)	W Mean (SD)	M Mean (SD)	W Mean (SD)	M Mean (SD)
No. situations where respondent disagrees with IPV against women	4.0	4.4	4.2	4.5	4.1	4.3
	(1.5)	(1.1)	(1.4)	(1.0)	(1.5)	(1.2)
No. activities for which respondent has some input or feels can make decision	3.7	3.5	0.2	1.3	0.2	1.1
	(1.1)	(1.2)	(0.5)	(0.6)	(0.4)	(0.4)
Total assets that are solely/jointly owned by respondent	4.3	7.1	4.0	7.8	3.7	6.1
	(2.0)	(2.0)	(1.9)	(2.6)	(1.8)	(2.0)
No. accessible sources where respondent solely/jointly participated in credit decisions	0.8	1.2	0.7	1.4	0.8	1.2
	(0.9)	(1.1)	(1.0)	(1.1)	(0.8)	(1.0)
No. activities respondent has input in decisions on income and output from all activities participated in	3.2	3.1	0.2	1.2	0.2	1.1
	(1.5)	(1.1)	(0.5)	(0.6)	(0.4)	(0.4)
No. hours worked	9.6	9.4	9.9	11.2	4.9	9.9
	(3.1)	(3.0)	(3.4)	(3.3)	(5.6)	(3.8)
No. places visited daily/weekly/biweekly/monthly or when required	6.3	7.8	6.3	7.9	6.4	7.5
	(1.4)	(1.3)	(1.4)	(1.2)	(1.4)	(1.5)
No. groups where respondent is an active member	0.7	0.2	0.5	0.3	0.7	0.1
	(0.8)	(0.5)	(0.7)	(0.6)	(0.9)	(0.4)
No. influential groups respondent is a member of	0.2	0.1	0.2	0.1	0.2	0.0
	(0.4)	(0.3)	(0.5)	(0.4)	(0.5)	(0.2)
N	**385**	**327**	**397**	**396**	**362**	**340**

Source: Authors' calculations. Note: only 9 out of 11 indicators have underlying count variables, please see Table 2 for definitions.

Table A.2: Indicator-wise disempowerment for women and men across household types

	Producer		Entrepreneur		Wage earner	
	W	M	W	M	W	M
Autonomy in decision making	1.7	0.9	1.8	0.6	1.8	1.0
Attitudes about intimate partner violence against women	3.5	2.9	2.8	2.2	2.9	3.1
Respect among household members	3.9	1.7	3.8	1.7	4.4	1.6
Input in productive decisions	0.6	0.4	7.3	0.2	7.7	0.2
Ownership of land and other assets	1.7	0.1	1.6	0.1	2.5	0.2
Access to and decisions on financial services	2.7	1.7	2.0	0.6	3.2	1.6
Control over use of income	3.0	2.3	8.0	0.3	7.7	0.2
Work balance	3.1	3.3	3.9	5.0	2.0	4.3
Group membership	4.4	6.0	5.2	5.6	4.3	6.9
Membership in influential groups	7.2	6.6	7.6	6.2	7.6	7.2
Total disempowerment	**31.7**	**25.9**	**44.1**	**22.6**	**43.9**	**26.3**

Source: Authors' calculations.

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