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From bargaining power to empowerment: Measuring the unmeasurable

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Abstract

Measuring power is central to empirical work on intrahousehold and gender relations. Early efforts to test household models focused on measuring spousal bargaining power, usually in models featuring two decisionmakers within the household. Proxy measures for bargaining power included age, education, assets, and "outside options" that could affect spouses' threat points within marriage. Evidence rejecting the collective model of the household has influenced the design of policies and programs, notably conditional cash transfer programs. Efforts have since shifted to measuring empowerment, drawing on theories of agency and power. Since 2010, several measures of women's empowerment have been developed, including the Women's Empowerment in Agriculture Index (WEAI) and its variants. A distinct feature of the WEAI, like other counting-based measures, is its decomposability into its component indicators, which makes identifying sources of disempowerment possible. The WEAI indicators also embody jointness of decision-making or ownership, which better reflects actual decision-making within households compared to 2-person bargaining models. This paper reviews how progress in the measurement of power within households has facilitated our understanding of household decision-making and creates new opportunities for programs and policy.

Keywords: bargaining power, empowerment, household model

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1. Introduction

Since the 1990s, attempts to model gender and intrahousehold dynamics have used bargaining power and empowerment to characterize factors that influence decisionmaking within households. Although both factors are inherently unmeasurable, measuring power has always been central to empirical work on intrahousehold and gender relations. If power is unmeasurable, what is the value of metrics? After all, there is a rich scholarship in the social sciences based on ethnographic and qualitative methods to analyze these concepts. Sir Anthony Atkison's rationale for poverty measurement motivates continued efforts: measurement matters if it can motivate political action, monitor progress, and help guide the design of effective policy actions, so that one can discern what works and what does not (Atkinson, 2019).

Research on measuring power to better understand intrahousehold dynamics has slowly shifted from proxy measures of bargaining power to direct measures of empowerment. Proxy measures figured prominently in early tests of the collective model of the household. The learnings from this analysis were valuable for policy: the identity of recipients of transfers mattered, transfers may affect the behavior of non-recipients, information and other resources may not necessarily be shared within the household, and adherence to a unitary model of the household eliminates many potential solutions to development problems (Quisumbing 2003). Yet the predictions of those models have not changed since early work in the 1990s despite continuing research focused on finding better proxy measures or accounting for more complex household and family structures. In the academic literature, while efforts turned toward finding exogenous variations in bargaining power, often taking advantage of natural experiments or increasing use of randomized controlled trials (RCT), many of the findings—that factors affecting marriage markets, including divorce and inheritance laws, matter—have not changed

substantively. Qualitative researchers have also pointed out the drawbacks of the rather mechanical application of bargaining models, ranging from the inability to characterize intrahousehold dynamics in different contexts and cultures, to the lack of nuance in the analysis.

An impetus toward more direct measurement of empowerment came from the adoption of the Sustainable Development Goals (SDGs) in 2005 and their recognition that women's empowerment and gender equality are intrinsically valuable. With the adoption of these goals also came the need to monitor them to track progress. Reflecting this need, research has shifted towards attempting to measure empowerment directly. The earlier critique of the quantitative approaches to measuring bargaining power has also prompted researchers to draw more on qualitative methods to better understand what empowerment means to people themselves (e.g. Meinzen-Dick et al. 2019).

This paper reviews how conceptualization and measurement of bargaining power and empowerment has shaped both the evolution of the empirical literature on gender and intrahousehold issues and policies to close the gender gap. It begins by reviewing bargaining models and proxy measures of bargaining power used in tests of household models and how these have influenced the design of development policy. It then shifts toward measurement of women's empowerment: the evolution of new metrics, the use of these metrics in diagnosing sources of disempowerment, evaluating agricultural development programs, and building support for further investment in efforts toward women's empowerment and gender equality. It concludes with directions for future work.

2. Bargaining power in household models

Tests of the unitary vs. the collective model of the household conducted in the 1990s used bargaining models as their point of departure. Becker's unitary model of the household (1981) assumed either that all household members have the same preferences, pool all resources, and agree on all decisions, or that one household member decides for everyone. In contrast, collective models of household behavior allow decision makers to have different preferences and do not assume a single household welfare index or utility function (Chiappori, 1992). Pareto-efficient collective models (Chiappori 1988, 1992), in particular, allow different preferences for individuals, assuming only that decisions are made such that outcomes are Pareto-optimal.

The unitary model characterizes the household as a group of individuals who behave as if they agree on how best to combine time and purchased goods to maximize household welfare. Thus, either all members of the household share the same preferences or a (self-interested or altruistic) dictator makes all the decisions. For example, in a two-person household composed of a man (m) and a woman (f) who both derive utility from a consumption bundle of commodities including goods and leisure ($\mathbf{x}$), conditional on household characteristics ($\boldsymbol{\gamma}$), only *total* household income is relevant for demand and not its components, i.e., the specific male or female contributions. This result is known as income pooling.

Concern about the strong assumptions underlying the unitary model, particularly the aggregation of preferences, has generated alternatives that weaken them by explicitly considering individual household members. Among these are Pareto-efficient collective models (Chiappori 1988, 1992) that allow different preferences for individuals, so long as decisions are made to achieve Pareto-optimal outcomes.

Consider a two-person household in which preferences are altruistic; the husband cares about the wife's allocation so that her private consumption increases his welfare, and vice versa.

In this two-person household, a man (*m*) and a woman (*f*) both derive utility from a consumption bundle of commodities including goods and leisure (**x**), conditional on household characteristics (**γ**). This leads to individual-specific utility functions in which both members' consumptions appear: $U_i (\mathbf{x}_i, \mathbf{x}_j ; \boldsymbol{\gamma})$ with $i = f, m$ and $j = m, f$. Then, for all Pareto-efficient outcomes, there exists some weight μ for which the household's optimization problem can be written as:

$$\text{Max } \mu U_m (\mathbf{x}_m, \mathbf{x}_f ; \boldsymbol{\gamma}) + (1 - \mu) U_f (\mathbf{x}_m, \mathbf{x}_f, ; \boldsymbol{\gamma}) \quad (1)$$

subject to a budget constraint in equation (2) (Thomas and Chen 1994).

$$\mathbf{p} \bullet \mathbf{x} = Y = y_J + y_m + y_f \quad (2)$$

Equation (1) shows that the unitary model is a special case of the more general model; the former obtains either when the individual utility functions U_m and U_f are identical (common preferences) or when μ is equal to zero or one (dictator). This formulation yields demand equations that are also functions of the bargaining weight μ in addition to prices, incomes, and household characteristics:

$$x_i = x_i (\mathbf{p}, Y, \mu ; \boldsymbol{\gamma}). \quad (3)$$

The above derivation can be interpreted as a two-stage budgeting process. In the first stage, household members pool all their income and allocate it according to the weight, or sharing rule, μ. This sharing rule is likely to be related to individuals' relative bargaining power within the household; a more powerful individual would command a greater share of the household's resources. In the second stage, each individual maximizes his or her utility given his or her income share.

Letting a_m and a_f represent proxy measures for bargaining power (for the man and woman, respectively) that influence μ, demand functions ignoring price variation can be expressed as

$$x_i = x_i (Y ; \mu (a_m, a_f) , \gamma). \quad (4)$$

Holding household income constant, the effect of individual bargaining power on demand for good *i* can be interpreted as the effect of changing the share (μ) of household income allocated to each household member. Because income pooling implies that the identity of the income earner, or person in control of the resources, is irrelevant, these effects should be zero:

$$Mx_i / Ma_j = 0 \text{ with } j = m, f$$

(5)

This provides a straightforward test of the unitary model by including proxy measures for male and female bargaining power in the estimation of demand equations.

Later formulations of the collective model have expressed demand functions explicitly as conditional on distribution factors z; a distribution factor is a variable that does not enter individual preferences nor the overall household budget constraint but influences the decision process (Bourguignon et al., 2009). Distribution factors are important because: (1) their existence is inconsistent with the traditional, unitary framework; (2) the influence of distribution factors provides the only testable restrictions for the collective model without price variation; and (3) they can help recover some features of the intra-household decision process (Bourguignon et al. 2009). Such z-conditional demand functions express the demand for one type of good as a function of the demand for another good, total expenditure, and distribution factors. Empirical tests of the collective model using z-conditional demand functions only require a distinction between factors that affect the allocation process within households (distribution factors) and

those that are likely to affect personal preferences. Finding plausible distribution factors remains an empirical challenge.

3. Measuring bargaining power: what we have learned and policy implications

Proxy measures of bargaining power were important in empirical tests of the unitary vs. the collective model of the household. This section discusses the proxy measures of bargaining power used in the literature, their strengths and limitations, and the policy implications that can be derived therefrom.

3.1 Proxy measures of bargaining power[1]

From the beginning, proxy measures of bargaining power have been used, given the absence of direct measures. These included: (1) shares of income earned by women (Hoddinott and Haddad, 1995); (2) unearned income (Schultz, 1990; Thomas, 1990); (3) current assets (Doss, 2005); (4) inherited assets (Quisumbing, 1994); (5) assets at marriage (Quisumbing and Maluccio, 2003); and (6) the public provision of resources to specific household members (Lundberg et al., 1997). Many of these studies also controlled for such factors as age, schooling, and relationship to the household head since these could affect individuals' bargaining power within the household. Early papers focused on identifying bargaining power in consumption decisions and were largely based on observational data. Later work testing the collective model has drawn from lab-in-the-field experiments, natural experiments, and randomized controlled trials (see Doss and Quisumbing 2019 for a review).

Recent empirical work, particularly those focused on distribution factors, continues to use exogenous variations in resources provided to specific household members, taking advantage of

[1] This draws from Quisumbing and Doss (2021).

random allocation of resources or natural experiments. In several cases, these are extensions or combinations of proxy measures used in the literature, such the public provision of resources to specific household members. For example, Attanasio and Lechene (2014) use the random allocation of PROGRESA, a conditional cash transfer program in Mexico, and the relative importance of the husband's and wife's networks of relatives in terms of size or wealth as distribution factors. Having data on two plausible distribution factors enables the authors to reject the unitary but not the collective model. Similar to the use of assets at marriage in the earlier literature, Chiappori and Nadoo (2020) state that any variable that affects an individual's position on the "marriage market" is a potential distribution factor, provided that its variations can influence the intrahousehold allocation of resources. This highlights the importance of considering changes in marriage and inheritance laws and legislation affecting property rights and the labor market as potential distribution factors.

Early tests of the collective model had limited ability to evaluate the intertemporal effects of policies because they ignored the dynamics of intrahousehold processes. Chiappori et al. (2020) use data from the U.S. Panel Survey of Income Dynamics (1999-2017) to test alternative models ranging from one extreme in which spouses fully commit to all future (and state-contingent) allocations of resources between them to the other, in which spouses renegotiate Pareto weights in every period. They find that couples' labor supply is consistent with limited commitment (significant impact of older shocks, cross-effects from past shocks to partner's hours), which differs from the impact of shocks on singles' labor supply. The authors conclude that "the extent to which individuals commit to their partner for life is crucial for understanding how policy may affect household formation, divorce, income, wealth, and child development

among other things" (Chiappori et al. 2020, p. 34), which reiterates the role of marriage markets and institutions, distribution factors that affect outside options.

3.2 *Strengths and limitations of proxy measures of bargaining power*

Proxy measures of bargaining power come with their strengths and limitations. All of them capture some dimension of bargaining strength, but only the relatively uncommon natural experiments related to public provision of resources or the deliberate randomization of program roll-out are likely to be entirely exogenous to individual and household decisions. For example, labor income, typically included in the calculation of income shares, is problematic because it reflects time allocation and labor force participation decisions that may have been the *result* of previous bargaining. Similarly, the exogeneity of non-labor income is questionable: it may not be independent of labor market decisions if a substantial portion comes from pensions, unemployment benefits, or earnings from accumulated assets. Current asset holdings are likely to be affected by asset accumulation decisions made during marriage. Inherited assets, although less likely to be influenced by decisions within marriage, remain vulnerable to other potential "endogeneity" problems. Inheritances may be correlated with individual unobservable characteristics, such as tastes or human capital investments in the individual, which in turn influence the outcomes under study (Strauss and Thomas 1995) and may be endogenous to the marriage because of marriage market selection. Assets brought to marriage are not affected by decisions made within the marriage but are susceptible to the same potential endogeneity problems as inheritances because they represent inter-vivos transfers from parent to child. Exogenous variations, such as the random allocation of transfers and the size of social networks that were exploited as distribution factors by Attanasio and Lechene (2014), as well as factors

that affect an individual's position on the "marriage market" (Chiappori and Nadoo (2020) have been explored in the recent literature.

A drawback of the early work on bargaining power was its almost exclusive focus on two-person bargaining games, which paid insufficient attention to jointness in household decisionmaking. Lafave and Thomas (2017), for example, suggest that the number of decisionmakers increases the complexity of decisionmaking in polygynous households. Decisionmaking is complicated not only by polygyny but also by multi-generational and laterally extended household structures.

However, even among households with two decisionmakers, the collective approach often misses key elements of household dynamics. Bargaining models emphasize competition and rivalry among household members but the fact that people form households, share ownership and control over some resources, work together on family farms, produce some output jointly, have and raise children together, and share in some consumption indicates that there are gains to jointness in gender and family dynamics (Doss & Meinzen-Dick, 2015; Fafchamps & Quisumbing, 2007). Jointness and cooperation — and possible gains to efficiency and welfare from increasing cooperation — have until recently been neglected in the analysis of household behavior (Quisumbing and Doss 2021).

A nagging question remains regarding the policy relevance of these proxy measures, especially outside the setting of a particular impact evaluation, unless conducted at scale (like PROGRESA). Natural experiments are often used *ex post* to identify exogenous changes in policy, but this may be unsatisfactory to those researchers who want to influence policy more pro-actively. Although these measures go beyond the unitary model of the household to identify a wider range of options to change bargaining power, many of them rely on very similar

measures, and by association, a very similar set of policy instruments. If measurement is to be relevant to policy, the literature on bargaining power seems to have stagnated.

4. Empowerment: conceptual and measurement challenges

The landscape of empirical work on gender dynamics changed with the adoption of women's empowerment and gender equality as SDG5 in 2015. While the earlier focus on women's empowerment may have emphasized its instrumental value in attaining such development outcomes as better health, nutrition, and education, elevating women's empowerment and gender equality to an SDG, recognizing its intrinsic importance, created the need for accountability. Thus, it is unsurprising that the period from the 2010's through the mid-2020s has been an extraordinarily rich time for the development of women's empowerment metrics.

4.1 Conceptualizing empowerment

A rich conceptual literature on women's empowerment exists, but the most common definition that is clearly reflected in current empowerment metrics draws from the work of Naila Kabeer (1999), who defines empowerment as the process by which people expand their ability to make strategic life choices, particularly in contexts in which this ability had been denied to them. This conceptualization of empowerment encompasses three main elements: resources, agency, and achievements. Interestingly, there are more empirical measures of gender equality than women's empowerment, particularly on resources and achievements, because of the existence of established metrics and rapidly increasing availability of sex-disaggregated, individual-level data. The typical achievements measured include poverty, income, wealth, nutrition/health (women's and children's), education, among others. While these measures of achievement provide information about gender gaps, they are not directly aligned with Kabeer's concept of empowerment, which is about goals that are unique to individuals. Measured achievements may

be linked or associated with individual goals but may not provide a full picture of whether the person is achieving their own personal goals. Thus, recent efforts to measure empowerment, such as the Women's Empowerment in Agriculture Index (WEAI), have focused on measuring agency. In this regard, Rowlands's (1995, 1997) typology of power has also been influential. Her typology juxtaposes the notion of dominating or exerting "power over" others with generative forms of empowerment, including "power within" (involving self-respect, self-efficacy, and an awareness of rights), "power to" (enacting personal goals) and "power with" (acting collectively toward shared interests).

4.2 Measuring empowerment[2]

As empowerment metrics have expanded to include measurement of agency in addition to resources and achievements, data requirements have shifted from aggregate country level data to those collected directly from individuals. Aggregate measures do not allow for heterogeneities between regions, socioeconomic status, marital status, age, or ethnicities. For example, the annual Global Gender Gap Index (World Economic Forum 2022 and previous years), covers gender inequalities in a broader set of domains (education, health, economic opportunity, and political opportunity) but is based on aggregate, country-level indicators that do not provide a direct measure of empowerment. Nationally representative surveys such as some Demographic and Health Surveys (DHS) include a range of questions about decisionmaking, such as who decides about the use of woman-earned income and who within the family has the final say about a range of decisions (for example, decisions about the woman's own healthcare, large and daily household purchases, visits to family or relatives, and what food should be cooked each day).

[2] This draws from Elias et al. (2021) and Quisumbing et al. (2023a).

Although DHS provide a direct measure of decisionmaking within the household, the domains of measurement are typically confined to the household and domestic sphere. Therefore, these questions do not adequately cover other dimensions of a woman's life, particularly decisions in the productive and economic spheres.

Increases in the availability of sex-disaggregated and intrahousehold data have improved assessment of the extent of gender equality in resources and achievements, but measuring agency is more difficult. Most attempts to measure empowerment have collected cross-sectional data or asked respondents to recall their experiences retrospectively. Because internationally validated measures of women's empowerment have only recently been developed, only a few countries have panel data on women's empowerment, but the Demographic and Health Surveys, for which there are multi-year observations, are often used to create panel data on proxies of women's empowerment, such as decisionmaking.

Tools for measuring empowerment can be clustered roughly into four groups: those that (1) focus only on one dimension (resources, agency or achievements) and assess empowerment at one level (individual, relationship or environmental); (2) focus on one empowerment dimension but at multiple levels; (3) use a multidimensional approach to assessing empowerment at one or more levels; and (4) explore the three dimensions of empowerment at the three levels of inquiry—personal, relational and environmental. A comprehensive review of these tools (Elias et al. 2021) provides insights into the current state of efforts to measure women's empowerment (Figure 1); this paper focuses on multidimensional measures of empowerment.

4.3 Multidimensional measures of empowerment

Prior to the development of the WEAI, most quantitative metrics of women's empowerment had been unidimensional (i.e., focused on measuring a single aspect of agency) or indirect (i.e., focused on measuring women's access to material or economic resources) and were often calculated based on country-level statistics, rather than self-reported, individual-level data. No existing metric exclusively focused on measuring women's agency within the agricultural sector.

WEAI (Alkire et al. 2013) was co-developed by IFPRI, OPHI, and USAID to measure the extent of women's inclusion in agricultural sector growth in the US Feed the Future Initiative. It is a counting-based index that uses the Alkire-Foster (2011) approach to measuring multidimensional poverty and is calculated based on interviews of a woman and a man in the same household. The WEAI comprises two subindices: 1) the Five Domains of Empowerment index (5DE), which measures women's empowerment at the individual level, and 2) the Gender Parity Index (GPI), which directly compares the empowerment of women and men from the same households. WEAI has five domains and 10 indicators: (1) production; (2) resources; (3) income; (4) leadership; and (5) time. In the production domain, the indicators are input in productive decisions and autonomy in production; in the resource domain, the corresponding indicators are asset ownership, rights over assets, and access to and decisions over credit. The income domain has only one indicator, control over the use of income. The leadership domain includes two indicators, membership in groups and confidence in speaking out in public. Finally, the time domain includes workload and satisfaction with leisure. The domains and indicators of empowerment in the WEAI and successive versions are presented in Table 1. In response to feedback that the survey was too long and that some questions were difficult to administer, A-

WEAI dropped four indicators, resulting in an index with the same five domains and six indicators (Table 1). Both the original WEAI and A-WEA reflect the domains and indicators that USAID intended to affect through its programming.

In contrast to WEAI and A-WEAI, which were developed for population-based monitoring, pro-WEAI was co-developed by IFPRI and a portfolio of agricultural development projects, the Gender, Agriculture, and Assets Project, Phase 2 (GAAP2) (Malapit et al. 2019). It has 12 indicators that correspond to what project designers and implementers deemed important to achieving project success, grouped into three domains following Rowlands' typology of power. The instrumental agency (power to) domain has the most indicators, including: (1) productive decisions, (2) asset ownership (including land), (3) access to credit and financial services, (4) control over the use of income, (5) work balance and (6) visiting important locations. The intrinsic agency (power within) domain has four indicators: (1) autonomy in income decisions, (2) self-efficacy, (3) attitudes towards intimate partner violence against women and (4) respect within the household. Finally, the collective agency (power with) domain has two indicators: (1) group membership and (2) membership in influential groups. Qualitative work undertaken to develop pro-WEAI (Meinzen-Dick et al. 2019) found that respondents rejected the concept of "power over" as a definition of empowerment, and thus this domain is not included in pro-WEAI.

More recently, pro-WEAI for health and nutrition (pro-WEAI+HN; Heckert et al. 2022) and pro-WEAI for market inclusion (pro-WEAI+MI) propose additional specialized indicators, which complement the set of standard indicators included in pro-WEAI and measure agency related to health and nutrition decisions and value chain activities, including the empowerment environment and factors such as sexual harassment in the workplace. As Alkire-Foster indices,

all WEAI-related metrics are additive and decomposable, which lend themselves to detailed diagnostics of the sources of disempowerment. WEAI and its variants have been used in 62 countries and by 256 organizations as of May 2024, providing a comprehensive picture of women's empowerment in agriculture and the empowerment gap between men and women across continents and contexts.

Other recent multidimensional empowerment indices use the same underlying Alkire-Foster methodology but focus on measuring empowerment in different domains and/or utilize different survey questions than the WEAI family of indices (see Figure 1 for several examples). For example, the Empowerment in WASH Index (EWI), also an Alkire-Foster Index using survey data from both women and men, is based on the WEAI but is applied to the water, health, and sanitation sector (Dickin et al. 2021).. The Women's Empowerment in Fisheries Index (WEFI) adapts the WEAI to a fisheries-dominant context, in addition to including a gender-norms component (Cole et al. 2020). The Women's Empowerment in Livestock Index (WELI) adapts the WEAI to settings where livestock farming is the dominant form of livelihood and adds a domain on decisions related to nutrition (Galiè et al. 2019). The Women's Empowerment in Nutrition Index (WENI; Narayanan et al. 2019) and abbreviated WENI (A-WENI; Saha and Narayanan 2022) use the Alkire-Foster methodology but are otherwise distinct from the WEAI. WENI and A-WENI measure women's empowerment in four domains, food, health, fertility, and institutions, utilizing different survey questions than the WEAI. Notably, unlike the WEAI family of indices, the WEFI, WELI and WENI do not collect data from men and thus do not provide direct estimates of the empowerment gap between men and women. Not collecting data on men in household surveys on empowerment is a missed opportunity both to assess the extent of the gender gap in empowerment and to identify whether disempowerment is due to gender or

factors that affect the whole household (such as caste in South Asia). In impact evaluation applications, data on men is also helpful to detect negative impacts on men's empowerment that might generate a backlash against women's empowerment efforts.

The amount of information in the WEAI metrics comes at the cost of requiring more time to administer, resulting in higher survey costs and the risk of respondent fatigue. Further efforts to streamline WEAI are ongoing. For example, pro-WEAI has been subsequently revised to 10 indicators (Seymour et al. 2023). The indicator for respect among household members was dropped because the indicator could not be calculated in households with only a single adult, which resulted in these households being dropped from the sample. Membership in influential groups was dropped because it was closely correlated with group membership, and hence, did not provide additional information on collective agency.

5. Measuring empowerment and assessing empowerment impacts: what we have learned and policy implications

The availability of new tools for measuring empowerment and gender equality has created opportunities for researchers and policymakers alike to diagnose sources of disempowerment, design programs to address them, and assess whether these interventions have achieved their objectives. Documenting the returns to women's empowerment in terms of other development outcomes can also help build political support for women's empowerment efforts.

5.1 Using empowerment metrics for diagnostics

The additive and decomposable nature of the WEAI family of metrics lends itself to identifying the sources of disempowerment. These have been used to highlight differences across

countries in baseline disempowerment (Malapit et al. 2014) as well as to showcase differences between men's and women's empowerment in specific contexts. Figure 2, for example, shows the extent of women's disempowerment across 13 countries in the US Feed the Future Initiative baseline surveys, Across these countries, lack of access to credit, excessive workload, and lack of group membership were identified as leading contributors to disempowerment. This influenced global US Feed the Future Initiative programming, as well as efforts undertaken by individual countries.

Although it was expected that women's disempowerment would be higher in the patriarchal cultures of South Asia, the extent of disempowerment in Bangladesh spurred action by the Bangladeshi government, which undertook programming to address gender inequality. Further analysis of the Bangladesh Integrated Household Survey suggested positive correlations among women's empowerment, agricultural production diversity, and household food security (Sraboni et al. 2014). This information spurred the Government of Bangladesh to co-design a pilot program addressing these linkages, the Agriculture, Nutrition, and Gender Linkages (ANGeL) project, exploring which combination of agriculture, nutrition, and gender sensitization training was most effective in diversifying agricultural production, improve gender equality, and increasing women's empowerment.

5.2 Using empowerment metrics in impact evaluations

WEAI-based metrics have been used to evaluate the impacts of agricultural development programs on women's empowerment. The project-level WEAI or pro-WEAI was co-developed with 13 agricultural development projects in the Gender, Agriculture, and Assets Project, Phase 2 (GAAP2) to assess their empowerment impacts. ANGeL (described above), one of the GAAP2 projects, piloted pro-WEAI in a cluster-randomized controlled trial implemented by the

Government of Bangladesh (Ahmed et al. 2023, Quisumbing et al. 2021). The project's treatment arms included agricultural training, nutrition behavior change communication (BCC), and gender sensitization trainings to husbands and wives together – with these components combined additively, such that the impact of gender sensitization could be distinguished from that of agriculture and nutrition trainings. Aside from collecting pro-WEAI, attitudes regarding gender roles were elicited from both men and women, to explore potentially gender-transformative impacts. ANGeL increased both women's and men's empowerment, raised the prevalence of households achieving gender parity, and led to small improvements in the gender attitudes of both women and men. There were significant increases in women's empowerment scores and empowerment status from all treatment arms but with no significant differences across these. There was no evidence of unintended impacts on workloads and evidence of possible increases in IPV, an unintended consequence of women-oriented programming, was inconclusive. While the study could not assess the extent to which including men and women within the same treatment arms contributed to the results, it is plausible that the positive impacts of all treatment arms on women's empowerment outcomes may have arisen from implementation modalities that provided information to both husbands and wives when they were together. This suggests that engaging men and women jointly in interventions is a promising implementation modality for women's empowerment-oriented interventions.

Using pro-WEAI throughout a project portfolio also enables comparisons to identify which strategies are most effective. Examples include the GAAP2 portfolio (Quisumbing et al. 2024) and the UN Joint Program for Rural Women's Economic Empowerment (Quisumbing et al. 2023b).

A synthesis of mixed methods impact evaluations of 11 agricultural development projects that were part of the Gender, Agriculture, and Assets Project, Phase 2 (GAAP2) (Quisumbing et al., 2024) highlights the need for projects to design their strategies specifically for empowerment, rather than assume that projects aiming to reach and benefit women automatically empower them. In the GAAP2 portfolio, the projects that succeeded in empowering women were intentional about their project strategies, had activities adapted to culture and context, and paid attention to unintended consequences (whether backlash from men or increased workload). Another synthesis across four country case studies of the United Nations Joint Programme for Rural Women's Economic Empowerment (Quisumbing et al., 2023) points to the potential of group-based approaches, the need to involve men, and being mindful of increased workload resulting from women's involvement in livelihood programs.

A side-by-side comparison of the distribution of impacts on composite indicators of empowerment and gender equality of GAAP2 and JP RWEE (Figure 3) shows that a larger proportion of JP RWEE projects had positive impacts on women's empowerment indicators than the GAAP2 portfolio, reflecting more women-focused programming. Some of the JP RWEE projects also implemented the Gender Action Learning System (GALS), an approach that involves the whole household in setting goals and identifying activities to achieve those goals. But both programs report a large proportion of null results on men's empowerment and whether the household achieved gender parity. It appears that shifting gender norms to achieve gender parity is more difficult to achieve.

Both syntheses, based on impact evaluations that used WEAI-based metrics in their impact assessments, show the value of both a common metric to compare empowerment impacts across projects and contexts and qualitative work to understand and contextualize these impacts.

Both syntheses recommend that agricultural development programs include empowerment measures as part of regular monitoring and evaluation to flag potential problems as they arise.

5.3 Using empowerment metrics to highlight gains to WEGE

Finally, analyses of women's empowerment in relation to other development outcomes can be used to highlight the returns to women's empowerment. Myers and colleagues (2023) review studies on the association between women's empowerment and primary food systems outcomes across a range of different contexts; the amount of and extent of agreement of evidence from the included studies are presented in Table 2. Their review confirms that fostering women's empowerment may have a positive effect on many food system-related outcomes. Notably, women's empowerment seems to be closely linked to improved child nutrition, but is also associated such outcomes as household level food security and, to a lesser degree, to women's own diets and nutrition. Although there is evidence that women's empowerment and intrahousehold gender equity is also positively associated with agricultural productivity, the context and type of crop matter. As is often the case with studies involving empowerment, household, societal and institutional factors – wealth, class, norms, for example – often play critical moderating roles.

6. Conclusions and future directions

This paper has examined developments in the measurement of two concepts that have helped us understand household decisionmaking: bargaining power and empowerment. Although both concepts lend themselves to assessing power within the household, based on the three criteria suggested by Atkinson (2019)—motivating political action, monitoring progress, and assessing effectiveness—the two concepts have vastly different degrees of utility for informing policy.

Although the early work on bargaining power and the collective model of the household has influenced policy, particularly the design of transfer programs, later work on distribution factors confirmed the importance of factors affecting the marriage market but has not uncovered significantly new policy instruments. Household decisionmaking is not limited to spousal decisionmaking; interactions within and across generations, particularly in complex households, may also be important. Moreover, a model of the household that is based on two-person bargaining games often fails to account for the jointness in household decisionmaking that is common all over the world. The lack of attention to jointness and gains to cooperation may be a missed opportunity to increase household efficiency.

In contrast, the indicator-based measures of women's empowerment typified by the WEAI and its variants yield results of immediate policy significance. This may have been because the WEAI was designed for monitoring progress toward women's empowerment using indicators that programs (like the Feed the Future Initiative) and projects (those in in the GAAP2 portfolio) hoped to affect. WEAI-based indicators also account for jointness in ownership and decisionmaking in assessing empowerment. WEAI-based measures, although typically collected for the primary male and female adult in the same household, can also be collected on other household members. This may reveal important insights into changes in empowerment across the life-cycle, as work exploring the relationships between daughters- and mothers-in-law in Nepal suggests (Doss et al. 2022). The risk that modifications may erode the comparability of WEAI-related indices has been minimized by proposing a core set of indicators, and validated add-on modules for specialized use (such as health and nutrition or market inclusion). Moreover, a WEAI Resource Center (weai.ifpri.info) provides up-to-date materials and guidance documents (including do-files) for potential users.

Nevertheless, the utility of these measures for monitoring progress toward SDG5 will be limited unless they are taken up by national statistical systems. IFPRI, in partnership with Emory University, the University of Oxford, and the World Bank's Living Standards Measurement Survey Unit, has recently developed the Women's Empowerment Metric for National Statistical Systems (WEMNS) for use by the 50 x 2030 Initiative, a a global partnership that aims to build capacity and close the agricultural data gap in 50 countries by 2030, as well as other large multi-topic surveys. A streamlined women's empowerment module, WEMNS measures women's and men's empowerment and is applicable to urban and rural areas and a variety of livelihood strategies (farming, self-employment, wage labor) across countries in different stages of structural transformation (Seymour et al. 2024). WEMNS is a counting-based, multidimensional index composed of four domains: intrinsic agency, instrumental agency, collective agency, and agency-enabling resources. Each domain is measured with binary indicators derived from question sets in the WEMNS module. WEMNS was developed and piloted in Bangladesh, Guatemala, Malawi, and Nepal, using cognitive interviewing, phone surveys, and face-to-face surveys and is being scaled up this year by FAO in three 50 x 2030 countries. WEMNS is designed to be administered to both women and men, so that it can yield measures of gender equality whether at the household or at the cluster level, depending on survey design. Fielding WEMNS as a module within multi-topic household surveys is crucial to linking women's empowerment directly to other development outcomes at the individual and household levels, enabling us not only to monitor progress toward women's empowerment and gender equality, but also to build a stronger evidence base for investing in this intrinsically valuable goal.

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Table 1. Comparison of domains and indicators across WEAI, A-WEAI, and pro-WEAI

Domains	WEAI	A-WEAI	Domains	Pilot pro-WEAI	Revised pro-WEAI
Production			**Intrinsic Agency**	Self-efficacy	Self-efficacy
				Attitudes about IPV against women	Attitudes about IPV against women
	Autonomy in production			Autonomy in income	Autonomy in income
	Input in productive decisions	Input in productive decisions	**Instrumental Agency**	Input in livelihood decisions	Input in livelihood decisions
Resources	Purchase, sale, or transfer of assets				
	Ownership of assets	Ownership of assets		Ownership of land and other assets	Ownership of land and other assets
	Access to & decisions on credit	Access to & decisions on credit		Access to and decisions on financial services	Access to and decisions on financial services
Income	Control over use of income	Control over use of income		Control over use of income	Control over use of income
				Visiting important locations	Visiting important locations
Time	Workload	Workload		Work balance	Work balance
	Leisure			Respect among household members	
Leadership	Group membership	Group membership	**Collective Agency**	Group membership	Group membership
	Speaking in public			Membership in influential groups	

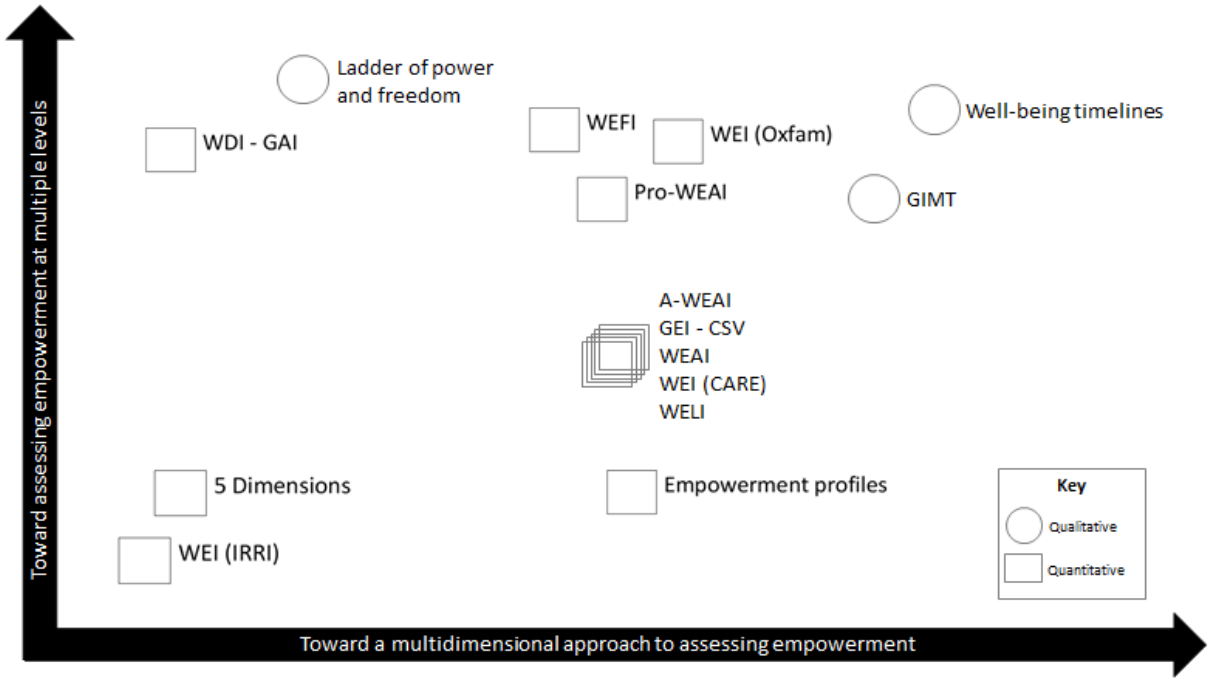
Source: Seymour et al. (2023)

Table 2. Women's empowerment in relation to food systems outcomes

		Amount of evidence		
		Low (1 – 3 studies)	Medium (4 – 6 studies)	High (7 – 13 studies)
Degree of agreement among studies	Low			
	Medium		Women's nutrition and diets Household level food security and diets	Agricultural production
	High	Life satisfaction Children's educational outcomes WASH Poverty transitions		Child nutrition and diets

Source: Meyer et al. (2023)

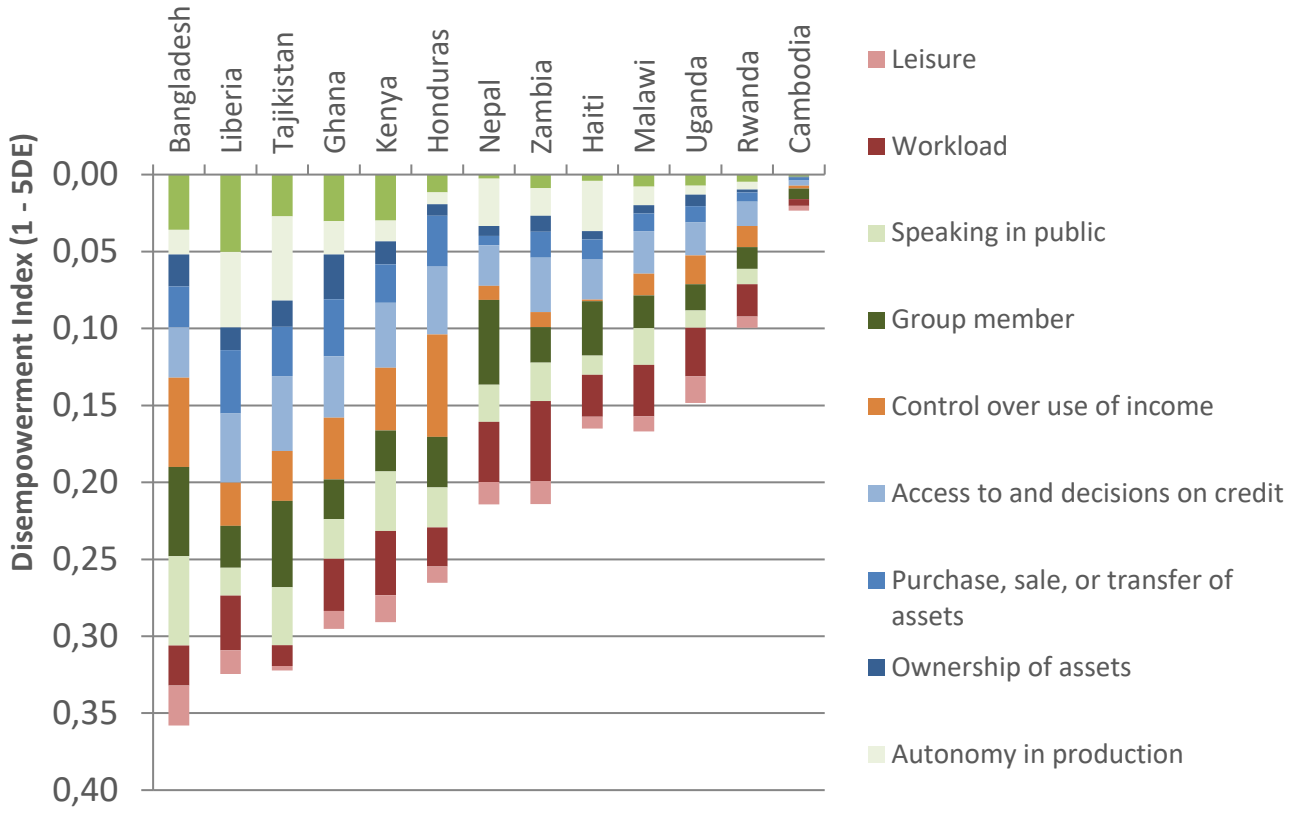
Figure 1. Mapping of empowerment measurement tools by dimension and level of empowerment



Key: WEI (IRRI): Women's Empowerment Index, International Rice Research Institute; 5 Dimensions: Comparison of the Five Dimensions of Men's and Women's Empowerment; WDI-GAI: Women's Decision-Making Index and Gender Attitudes Index; WELI: Women's Empowerment in Livestock Index; WEI (CARE): Women's Empowerment Index (CARE); WEAI: Women's Empowerment in Agriculture Index; GEI-CSV: Gender Empowerment Index for Climate Smart Villages; A-WEAI: Abbreviated WEAI; Pro-WEAI: Project-level WEAI; WEI (Oxfam): Women's Empowerment Index (Oxfam); WEFI: Women's Empowerment in Fisheries Index; GIMT: Gender Indicator Monitoring Tool (CARE)

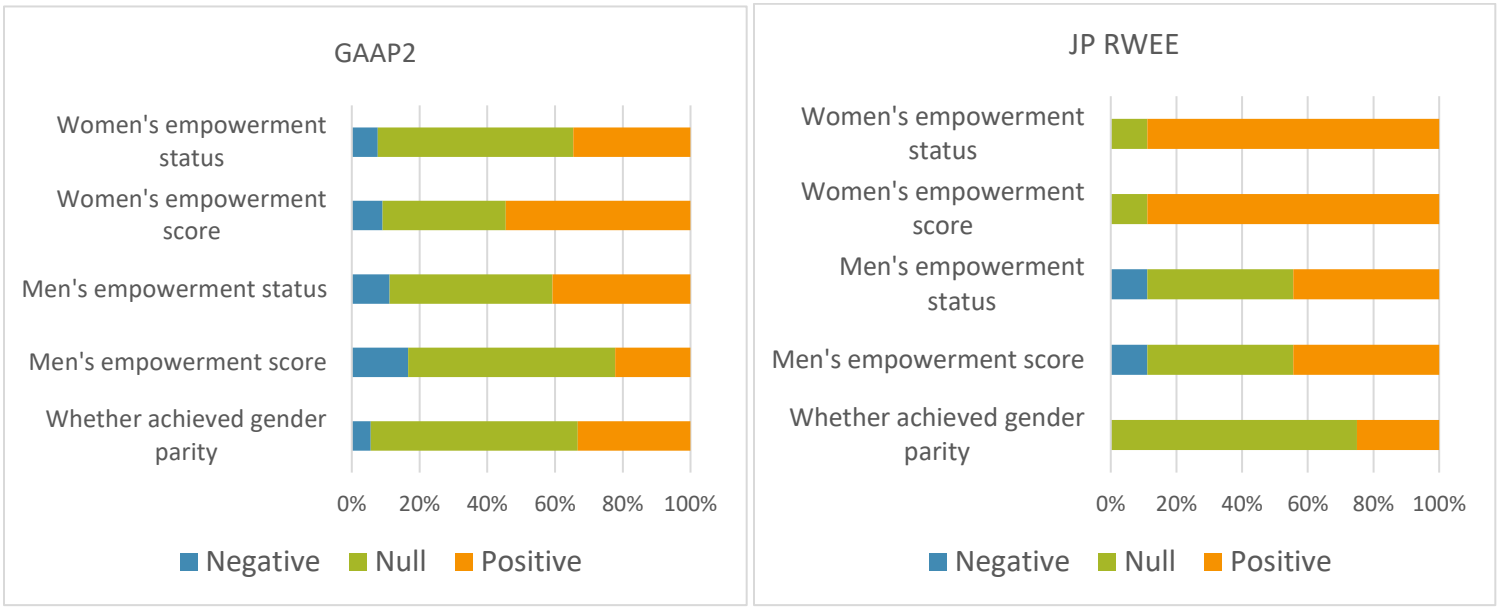
Source: Elias et al. (2021)

Figure 2. Contributions of WEAI indicators to disempowerment



Source: Malapit et al. (2014)

Figure 3. Distribution of impacts on composite indicators of empowerment and gender parity, GAAP2 and JP RWEE portfolios



Source: Quisumbing et al. (2024, 2023)