

# Grapppling with the Challenges of Measuring Women's Economic Empowerment

By Sonia Laszlo, Kate Grantham, Ecem Oskay and  
Tingting Zhang (McGill University)



**ISID**

INSTITUTE FOR THE STUDY  
OF INTERNATIONAL DEVELOPMENT

GrOW Working Paper Series  
GWP-2017-12 – Research Contribution Paper

# Grappling with the Challenges of Measuring Women's Economic Empowerment

Sonia Laszlo\*  
Kate Grantham  
Ecem Oskay  
Tingting Zhang  
*McGill University*

December 19, 2017

## Abstract:

Defining and measuring women's economic empowerment (WEE) has been at the centre of the current debates among international development scholars and practitioners. The lack of clear consensus on both may limit widespread efforts to design and evaluate programs and policies aimed at improving women's well-being. This paper sets out a proposed classification and conceptual framework for measuring WEE in international development research. It proposes a typology for measuring WEE which combines proximity of concept to measurability. Findings from a systematic review of the scholarly literature between 2005 and 2017 are then presented to demonstrate the diversity of published approaches that exist to measure WEE. We recommend that researchers avoid using outcomes (e.g. labour market outcomes) as measures of WEE and stress the importance of linking measures to theoretical constructs. Finally, researchers must balance the trade-off between the specificity of the measure (to account for specific contexts) and the generalizability of the measure (for cross-regional or time comparisons).

**Keywords:** *Women's Economic Empowerment; Developing Countries; Measurement*

**Acknowledgements:** This work is made possible thanks to funding by Canada's International Development Research Centre (IDRC) Grant #108513-001, through their Growth and Economic Opportunities for Women (GrOW) program. GrOW is a multi-funder partnership between the United Kingdoms Department for International Development, the Hewlett Foundation, and IDRC. Javad Samieenia provided excellent research assistance. We thank Arjan de Haan, Franque Grimard and participants at IDRC seminars for useful comments and feedback. \*Corresponding author: Prof. Sonia Laszlo, Economics and Institute for the Study of International Development, McGill University: sonia.laszlo@mcgill.ca.

# 1 Introduction

Development objectives increasingly aim to improve women’s well-being globally. The contemporary emphasis placed on women’s empowerment is both conspicuous and explicit in the international dialogue around development (as evidenced by the UN’s focus on women in the Sustainable Development Goals) and among Development Assistance Committee countries’ foreign policies (as evidenced by Canada’s feminist international assistance policy). This emphasis has translated into development programming targeting women in the Global South, and especially with the ultimate goal of increasing their economic empowerment. While this focus on women and women’s economic empowerment (WEE) has been well-intentioned to correct gender imbalances, especially in developing countries, the effectiveness of this programming and WEE policies more generally is still a matter of considerable debate.

One challenge in establishing whether such policies are effective in improving women’s empowerment and well-being is how to measure such complex concepts. There are almost as many different instruments used to measure WEE as there are research papers or development projects that utilize them. But underlying the difficulty in finding common ground on how to measure empowerment – or even slightly more narrowly women’s economic empowerment – is the often diffuse nature of the concept itself. Yet measurement is important to assess and understand the context and to benchmark projects to evaluate their impact.

To illustrate the complexity in measuring WEE, consider a core focus of empowerment which rightly centers around women’s labour market outcomes, specifically their ability to be gainfully employed. We can crudely deconstruct this outcome into two relevant components: that women work (and thus participate in the labour market) and that they earn income. The literature on intra-household allocation and bargaining power makes a clear case for a woman’s income, relative to her spouse’s, to be considered a primary determining factor in empowering her in household-level decisions. However, her decision to participate in the labour market to begin with is not equivalent to empowerment and should not be used

as a measure of such. To be sure, whether and how much she works is an outcome of the empowerment process and so the direction of causality works in both ways. Yet both whether and how much she works is also largely a factor of labour market dynamics and her own preferences over consumption and leisure. Similarly, she may be over (or under) employed due to frictions in the labour market (perhaps due to child care related time constraints) making her work more (or less) hours than she would like at lower paying jobs. Indeed, a recent paper by Cronin-Furman et al. (2017) highlights the disconnect between employment and empowerment in development programming stressing certain forms of gender-specific employment (such as raising chickens or weaving baskets). Raising employment levels does not equate to empowering women, if this employment strips women of their agency and ability to assert their own preferences (in this example, in occupational choices).

The paper by Cronin-Furman et al. (2017) underlines the necessity to rethink the measurement of WEE. If development decision-makers falsely equate empowerment with, following this example, employment status, then a measure of success (observing a woman who switches from not working to weaving baskets after some intervention) will confound a number of causal factors and may not be in line with most definitions of empowerment, especially those that place agency and choice at their core. As Cronin-Furman et al. (2017) charge, by de-politicizing empowerment to reflect a binary measure of ‘employment’, development programs may further marginalize women rather than meaningfully empower them.

We add to this discussion by proposing a new but simple typology for measuring WEE. We do so by relying heavily on the literature developed by economists on intra-household allocation and bargaining. While we acknowledge that the WEE process extends beyond the household, this literature nevertheless provides us with a useful analytical framework in which we can distinguish measures of the direct determinants of empowerment from more indirect measures of the effects or outcomes of the empowerment process. We also distinguish between these direct and indirect measures of WEE and socially or externally imposed constraints

(such as legally imposed constraints), and thus provide a three-way classification of WEE measures, relating to proximity of concept: direct, indirect and constraints.

This classification is not far removed from the categorization in Kabeer (1999), who distinguishes between three interconnected dimensions of WEE: resources, agency and achievements. Our conceptual framework builds on an intrahousehold model with three somewhat more narrowly defined components. First we define direct measures those which are directly related to a woman’s ability to assert her preferences in decision-making (akin to the notion of agency in Kabeer (1999)). Second, we define indirect measures those that are outcomes of the decision-making process. Finally we define constraint measures as factors outside of the direct control of the woman and/or her household which constrain her ability to achieve desirable outcomes. Examples of these constraints may be formal rules (e.g. laws) limiting women’s access to productive resources (e.g. property rights, rights to education, etc).

We follow this framework with a systematic and multidisciplinary review of the recent literature surveying the measures used in scholarly research on WEE in key domains closely connected to household decision-making (labour market outcomes, control over resources, marriage and fertility, and child rearing). This framework complements existing classifications surrounding the empirical measurability of the concept which distinguishes between objective (observable by the researcher) and subjective (centered on respondents’ beliefs and experiences) measures (e.g. Quisumbing et al, 2016). Our typology formalizes the connection between measurement and concept within microfoundations from intra-household allocation models. It should be viewed as complementary to the work by Buvinic and Furst-Nichols (2016) who distinguish between different outcome measures of WEE which we would classify as indirect. We view these categorizations as important and cross-cutting.

Our paper makes a number of recommendations. First, we observe a very large degree of heterogeneity in published measures of WEE. This can be in part explained by a lack of consensus in the literature, and the need for WEE measurement to adapt to different domains,

contexts and to the research question itself. We thus do not recommend any one measure over any other, though we do recognize the value of generating a comparable cross-regional and time-invariant instrument which may be useful for cross-country comparisons. Given the vast spectrum of studies on WEE, measures should be flexible to accommodate the research question, and we are cognizant of the trade-off between specificity in and generalizability of the instrument. Nevertheless, our second recommendation is to avoid using *outcomes* of the empowerment process to be a *measure* of empowerment itself. The illustration above with labour market outcomes is a case in point, but there are many measures utilized in the literature that conflate empowerment with outcomes (e.g. educational attainment, job training, loan receipt, etc) which are strongly determined by market forces and preferences, as well as WEE. We distinguish here between direct measures, indirect measures and measures of constraints, but there could be other classifications that can be made. However, we do recommend the practice that measuring WEE rely more strongly on a theoretical concept of empowerment, and that this may be specific to the research question. Our third recommendation is thus to provide an explicit definition of WEE.

Our paper is structured as follows. First, we provide a conceptual framework based on a notion of WEE drawn from Kabeer (1999) and Sen (1989, 1999) and apply it to intra-household decision-making models. We then propose a three-way classification for measuring WEE. Third we briefly describe the methodology used for a systematic review of the literature before discussing the evidence on WEE across different domains. Finally, we conclude with a discussion of commonly utilized instruments to measure WEE.

## 2 Conceptual Framework

### 2.1 Women’s Economic Empowerment

For the purposes of this paper, we follow the most widely accepted conceptualizations of WEE, traced back to Sen’s capability approach (Sen, 1989) or the notion that empowerment is linked to the ability people have to live the life they want. This notion is developed more formally in the seminal work by Kabeer (1999), in which empowerment is comprised of agency, resources and achievements. Since then, the concept of women’s empowerment (and WEE more specifically) has been picked by academics (e.g. Taylor and Perezneito, 2014; Tornqvist and Schmitz, 2009; and Golla et al., 2011) and practitioners or policy makers (e.g. Global Affairs, 2017). While definitions vary moderately, they all centre on a multi-dimensional concept placing agency, decision-making and control over resources, all the while highlighting social and cultural dimensions. In the case of *economic* empowerment, most conceptualizations also recognize the ability women have to experience economic fulfilment through meaningful and gainful employment.

Linking this concept to measurement is complicated since the concept itself is multi-dimensional and comprised of dimensions which are inherently hard to measure (such as agency, capabilities, etc). A recent working paper by Quisumbing et al. (2016) makes an important distinction between ‘subjective’ and ‘objective’ dimensions of WEE. Objective measures tend to be those which are easily observable by a researcher or practitioner and often include empowerment outcomes or economic achievements (e.g. labour market outcomes or loan use). Subjective measures tend to be those that are based on women’s own, subjective experiences and are more difficult for a researcher or practitioner to observe (e.g. self-esteem or life satisfaction). These distinctions are related to the differences between outcomes and processes (e.g. Kabeer, 2001; and Garikipati, 2012). Nevertheless, recent efforts are pushing the envelope and developing an emerging area of research using psychosocial metrics

(Donald et al., 2017) and behavioural approaches (e.g. Martinez-Restrepo et al., 2017). As is evident in this literature, the concept of WEE is both complex and context-specific and its measurement will reflect this complexity. We take this literature further, with support from economic theory on intra-household allocation.

This paper takes a holistic approach to conceptualizing WEE, combining different aspects of these definitions and approaches. We define WEE as the process by which women acquire access to and control over economic resources, opportunities and markets, enabling them to exercise agency and decision-making power to benefit all areas of their lives. We further identify three key domains of WEE that are present across existing scholarship: (1) labour market outcomes, (2) control over household resources, (3) marriage, fertility, and child rearing. Regarding how best to study and to measure WEE, we follow the approach of Quisumbing et al. (2016), Kabeer (2001), Garikipati (2012) and others, but distinguish between ‘direct’ and ‘indirect’ measures of WEE. We consider, for instance, a measure of a woman’s autonomy in individual and household decisions (e.g. control over household resources) to be a direct measure, while a proxy variable indicating her school enrolment would be an indirect measure that instead captures outcomes of the decision-making process such as human capital accumulation, education, etc. Similarly, women’s time use is an outcome of intra-household allocation of labour and unpaid care work, rather than a measure of empowerment *per se*. Indirect measures are typically easier to study and to measure and readily available in many multi-purpose data sets, and may or may not be ‘objective’. They often include socio-economic or demographic characteristics like employment and marital status, and health measures such as women’s life expectancy and contraceptive use. While these are indeed measurable factors that relate to women’s lives, and many are outcomes of the empowerment process, they do not measure WEE itself.

The next section builds on the microfoundations of intrahousehold allocation models to illustrate the distinction between direct, indirect and constraint measures. Direct measures

are those that relate to individual factors which allow for women’s assertion of her own preferences within the objective function (e.g. her agency). Indirect measures relate to the outcomes of the decision-making process. Meanwhile, constraint measures relate to factors exogenous to the woman or her household constraining her ability to optimize.<sup>1</sup>

## 2.2 Basic Constructs

Browning and Chiappori (1998), McElroy and Horney (1981) and Haddad et al. (1997), among others, provide the theoretical underpinnings for intrahousehold allocation and bargaining models and Browning and Chiappori (1998) provide the rationale for moving away from unitary towards collective models in developing countries. Looking at WEE, especially in household decisions about allocating resources, labour supply, child rearing, marital outcomes and fertility, it is necessary to consider models that allow for individual rather than aggregate household preferences. We consider a collective model of household decision-making which is a weighted average between, to keep it simple, the woman’s utility  $U_f(.)$  and her spouse’s  $U_m(.)$  over consumption and leisure.<sup>2</sup> Following this literature, the weights assigned to each member in the household decision-making problem corresponds to their bargaining power  $\theta$  (also known as Pareto weights) such that the household will maximize, subject to a budget constraint, the following objective function:

$$U(.) = \theta U_f(.) + (1 - \theta) U_m(.) \quad (1)$$

Rather than taking  $\theta$  as constant, there are theoretical reasons and empirical evidence to suggest that a woman’s bargaining power in household decision-making is highly influenced by the share of income generated by her labour relative to that of her spouse. As a result,

---

<sup>1</sup> For instance, constraints dictated by formal legal systems (e.g. property rights) may introduce kinks in her budget constraint leading to sub-optimal outcomes at corner solutions.

<sup>2</sup> We focus on collective rather than non-cooperative models here, as is common in the development literature. For recent literature reviews on the range of intra-household models, please see Haddad et al. (1997), Vermeulen (2002) and Deopke and Kinderman (2017).

many papers specify the bargaining power parameter to be an increasing function of her income  $y_f$  (holding constant her spouse's income  $y_m$ ) such that  $\theta = \theta(y)$  or  $\theta = \theta(y_f)$  (e.g. Browning and Chiappori, 1998; Basu et al., 2002), where  $0 \leq \theta \leq 1$ . An important new literature is emerging, drawing on game theoretic arguments of bargaining, which is making this formulation endogenous to the decision-making process itself (e.g. Iyigun and Walsh (2007), Basu (2006)). While we believe this is a rich avenue of research, for the purposes of this paper, we maintain a simpler approach in which we allow bargaining power to be a function of more than (women's) income alone and to include some of the more 'normative' dimensions of bargaining and empowerment.

Indeed, we wish to have a theoretical concept of women's empowerment, applicable to an intra-household decision-making setting, which more accurately reflects the conceptual construct as discussed in Kabeer (1999), Kabeer (2017), Quisumbing et al. (2016) and reflected in Sen's (1989, 1990) capability approach. Specifically, we acknowledge the importance of both social and cultural norms (including laws, religion and generalized attitudes towards women, gender and empowerment) and psychosocial characteristics - such as self-esteem and self-confidence - related to the notion in Sen (1990) that perceptions of well-being and agency are a fundamental requirement for individuals to act and assert their preferences in a household decision-making setting (e.g. Katz, 1997). In order to do so, we build on the formulation that  $\theta = \theta(y_f)$  is a positive function of the woman's income, as in Browning and Chiappori (1998) and Basu et al. (2002), such that  $\frac{\delta\theta(y_f)}{\delta y_f} > 0$ :

$$\theta(y) = \frac{y_f}{y_f + y_m} \tag{2}$$

In what follows, we will allow income  $y_i$  ( $i = f, m$ ) to include both labour income as well as any individual level non-labour income. Few papers in economics have attempted to make bargaining power an explicit function than anything other than income, let alone social norms or psychosocial factors. Cherchye et al. (2012) and Doepke and Kinderman (2017) allow Pareto weights to be a function of income (earned and unearned) as well as exogenous

determinants  $z$ . Specifically, drawing on the seminal work by Bourguignon et al. (2009), these papers consider the  $z$  to be ‘distributional factors’. Bourguignon et al. (2009) define these broadly to include “relative incomes, relative wages, the ‘marriage market’ environment, and the controls of land (p. 504)”, while Doepke and Kinderman (2017) consider ‘time cost per child’ as a distributional factor.<sup>3</sup> We can reformulate this by extending this notion to incorporate the normative and psychosocial determinants of bargaining/empowerment. The only explicit representation allowing normative issues to feature in the bargaining equation is the working paper version of Iyigun and Walsh (2002) which incorporates social and cultural norms directly in this specification. Following their contribution, we can augment equation (2) to incorporate a parameter  $\psi$  which is increasing in (discriminating or disempowering) social and cultural attitudes towards women:

$$\theta(y, \psi) = \frac{y_f}{y_f + \psi y_m} \quad (3)$$

which satisfies the condition that  $\theta$  be bound by 0 and 1 as long as  $\psi > 0$ . The interpretation of this specification is straightforward. Let  $\psi = 1$  be interpreted as a social and cultural propensity for gender equality and may be individual (e.g. individual beliefs about gender equality). If  $\psi > 1$ , there is a social and cultural propensity favouring men over women. In other words, if  $\psi > 1$ , even if men and women’s incomes are equal ( $y_f = y_m$ ), women would not have equal bargaining power in household decision-making. In the extreme, if social and cultural norms are exceptionally hostile towards gender equality (increasing further  $\psi$ ), then a woman’s bargaining power will be eroded:

$$\lim_{\psi \rightarrow \infty} \theta(y, \psi) = 0$$

To allow for psychosocial measures, we raise this share of a woman’s income relative to

---

<sup>3</sup> Fisher (2012) models a woman’s bargaining power to be a function of the number of children she has. Because of substantial evidence that bargaining power *influences* fertility choices and behaviour (e.g. Eswaran, 2002; Ashraf et al., 2014), we feel that the number of children is better modelled as an outcome of the empowerment process.

her spouse's to a power  $e^{(1-\phi)}$  such that:

$$\theta(y, \phi) = \left( \frac{y_f}{y_f + y_m} \right)^{e^{(1-\phi)}} \quad (4)$$

where  $\phi$  represents a psychosocial measure increasing with low self-confidence or self-esteem (where  $\phi = 1$  corresponds to gender equality in self-esteem and self-confidence), and  $\phi > 1$  as corresponding to women having more self-esteem and self-confidence than men).<sup>4</sup>

In this case, we can reformulate a woman's bargaining power as:

$$\theta(y, \psi, \phi) = \left( \frac{y_f}{y_f + \psi y_m} \right)^{e^{(1-\phi)}} \quad (5)$$

and it is easy to show that  $\frac{\delta \theta(y, \psi, \phi)}{\delta \phi} > 0$  such that the higher self-esteem or self-confidence (relative to spouse), the higher the woman's bargaining power in household decision-making. It is also easy to show that  $\theta(y, \psi, \phi)$  is bound by 0 and 1 for any value of  $\phi > 0$  and  $\psi > 0$ .

The household's decision-making problem is thus to choose (for simplicity) a bundle (vector)  $\mathbf{C}_i$  of private and public household goods and leisure ( $l_i$ ) to maximize, subject to a full income budget constraint:

$$U(\mathbf{C}_f, \mathbf{C}_m, l_f, l_m) = \theta(y, \psi, \phi)U_f(\mathbf{C}_f, \mathbf{C}_m, l_f, l_m) + (1 - \theta(y, \psi, \phi))U_m(\mathbf{C}_f, \mathbf{C}_m, l_f, l_m) \quad (6)$$

where  $\theta(y, \psi, \phi)$  is defined as in (5).<sup>5</sup> The household's full income budget constraint is the usual (for simplicity holding the price of consumption goods as numeraire), with  $w_f$  and  $w_m$  denoting male and female wages,  $Y$  is non-labour income ( $Y = Y_f + Y_m$ ) and  $T_i$  are individuals' time endowments:

$$\mathbf{C}_f + \mathbf{C}_m + w_f l_f + w_m l_m = Y + w_f T_f + w_m T_m \quad (7)$$

---

<sup>4</sup> Koolwal and Ray (2002) similarly introduce an exponential formulation by raising the same of income to a power representing relative education between the spouses.

<sup>5</sup> Note that because we are using implicit functional forms for the individual utility functions, we do not restrict the woman's and the man's utility functions and hence preferences to be the same. In otherwords,  $U_f(\cdot)$  may put different weights on certain consumption goods than  $U_m(\cdot)$ , and may include consumption goods consumed only by women.

Women’s ability to possess assets, participate in the labour market because of care giving or other unpaid family responsibilities, access credit and so on, are constrained by social and cultural factors. These are best modelled as constraints and ought to be separate from the bargaining power parameter, which is modelled here to reflect the degree to which a woman is able to make her own choices and assert her own preferences in any domain of decision-making.<sup>6</sup> In such cases, the optimization problem of maximizing equation (6) subject to budget constraint (7) can be easily augmented by adding additional constraints, constraining labour supply hours ( $h = T - l$ ) to be below some threshold ( $\bar{h}$ ) to account for, say, child care. Similarly, we could add assets ( $A_i$ ) to the model and constrain it to be below some socially constructed threshold ( $\bar{A}$ ) which may even be zero (for instance in the case where women do not have any legal rights to own property).

Thus, depending on the domain of decision-making of interest, the intra-household model above can be adapted to specify a particular consumption good or item over which individuals have preferences, such as productive assets, investment in children (and fertility), human and social capital investment, etc. It would be a matter of adapting the optimization problem while also specifying the additional relevant constraints (such as ownership laws, constraints on hours supplied to the labour market, access to education, etc). Similarly, in non-cooperative Nash bargaining models, empowerment can be represented by the bargaining parameter as well as a threat-point (e.g. McElroy and Horney, 1981; and Eswaran, 2002). In these models, the threat point is represented in the formulation of the utility function as the value of the outside option (Eswaran, 2002; and Doepke and Kinderman, 2017).

We note here that we are considering  $\psi$ ,  $\phi$  and  $y$  as independent from each other. However, it is reasonable to believe that over time a woman’s self-confidence is positively affected by her earnings and labour force participation. Similarly, it is also reasonable to believe that as more women participate in the economy and self-confidence rises, so will gender attitudes

---

<sup>6</sup> These constraints are distinct from  $\psi$  because they may be exogenous to the household’s decision-making process and not easily malleable.

change towards more equality. We leave this issue of endogenous bargaining as a challenge for researchers wishing to deepen the conceptualization and measurement of WEE.

## 2.3 From Theory to Measurement - a Proposed Classification

The above provided a representation of WEE as bargaining power in an intra-household allocation framework to reflect the notion that a considerable part of WEE is a woman's ability to make and act on choices over outcomes across multiple domains (labour market outcomes, human capital, control over household resources, marriage, fertility and child rearing). Her bargaining power (i.e. ability to make choices or negotiate with her spouse) relies positively on her relative income ( $y$ ) but negatively on social and cultural norms hostile to gender equality ( $\psi$ ) and negatively on her lack of self-confidence and self-esteem ( $\phi$ ). Here we consider the parameter  $\theta(y, \psi, \phi)$  as the intra-household bargaining parameter but we can easily extend this parameter to domains outside the household: an increase in a woman's self-confidence or income, as well as improvements in social norms towards gender equality, should see an increase in a woman's empowerment in other domains.

For the purposes of this paper, we categorize measurements that speak to these issues as *direct* measures of WEE.<sup>7</sup> This is distinct from *indirect* measures which capture the outcomes of the (domain-specific) decision-making process such as actual consumption and leisure (labour) decisions, savings, physical, human and social capital investments, marital (including instances of intimate partner violence) and fertility outcomes, etc (the solutions  $\mathbf{C}_i^*$  and  $l_i^*$  from the constrained optimization problem (6) and (7)). In some cases it may also be desirable to introduce a third category, *constraint* measures non-market but external constraints to the ability of women to participate meaningfully in different domains of the economy (e.g. land ownership restrictions  $\bar{A}$ , constraints on hours supplied to the labour market resulting from social expectations of care giving  $\bar{h}$ , etc)

---

<sup>7</sup> Note that for income, we stress that it is relative income (e.g. in the intra-household setting relative to her spouse's income).

This is similar to but substantively different from Quisumbing et al.’s (2016) distinction between “subjective” and “objective” measures. In their taxonomy, “objective” measures relate to measurable outcomes such as productivity and income while “subjective measures” relate to psychosocial and decision-making measures. Our proposed classification is along conceptual lines drawing on the literature on women’s bargaining and empowerment within the household. In fact, both types of classifications are relevant: an “objective” measure could be either direct or indirect, as could a “subjective” measure. Table 1 illustrates the mapping between the proximity of concept (direct, indirect and constraints) and the subjective/objective measurability classification. For instance, taking the direct measures, relative income ( $y$  in our conceptual framework) is objective as it is often measured in many multi-purpose surveys (cell I). Currently, most psychosocial measures ( $\phi$ ) are subjective as they are self-reported as perceived by the respondent, though some efforts are increasingly being made to test these more rigorously using psychosocial or behavioural experiments. Finally, social and cultural norms ( $\psi$ ) may be both objective (e.g. if wide-spread and common beliefs are observable by researchers) or subjective (e.g. respondents’ individual beliefs about gender equality). Each cell is then represented in a separate table (Table 2 through 8) cataloguing actual measures employed in the papers reviewed in this literature review paper. That is, each cell and corresponding table lists measures according to the combination of proximity to concept (direct, indirect, constraints) and measurability (subjective versus objective).

### 3 Measuring Women’s Economic Empowerment - Review of the literature

#### 3.1 A Systematic Review - Methodology

We now turn to the recent academic literature to see what scientific studies have to say about the measurement of WEE. We systematically searched online databases of academic journals for studies that measure WEE in the Global South. This search was restricted to studies published in English since January 1, 2005. We sought a balance of multi-disciplinary, qualitative and quantitative research. The following selected search terms were used to identify a pool of potentially relevant publications: agency, autonomy, decision-making, economic opportunities, empowerment, intra-household bargaining, measurement, measures, resource allocation and women/female. We excluded studies that were not conducted in developing countries, and those that did not seek to measure WEE empirically. We searched peer reviewed journal articles in Anthropology, Demography, Economics, Epidemiology, Gender and Women’s Studies, Geography, International Development, Political Science and Sociology. We focused primarily on top general interest or relevant field journals.<sup>8</sup> The list of journals per discipline is found in Table 9.<sup>9</sup> Search results are current as of June 2017.<sup>10</sup>

In the following section, we present the results of our literature review examining the measures commonly used to study WEE. To organize our findings, we outline different approaches to measuring WEE across three domains of empowerment present within the literature: (1) labour market outcomes, (2) control over household resources, and (3) mar-

---

<sup>8</sup> We did not intend to cover all scholarly work looking at WEE, and did not review working paper series (e.g. World Bank Working Paper Series, NBER, BREAD, ...) opting only for papers already vetted by peer review in high impact outlets.

<sup>9</sup> Though far from presenting an exhaustive search, we do feel this captures an appropriate array of outlets for papers on WEE.

<sup>10</sup> ‘Top’ was defined according to overall general readership and disciplinary reputation. This inevitably skews the representation towards Western, English language, academic journals (namely from the US and UK).

riage, fertility, and child rearing. Taken as a whole, our review demonstrates tremendous heterogeneity in approaches used by researchers, highlighting a lack of convention on how to conceptualize and measure WEE among academic and practitioner communities. While the Demographic and Health Survey (DHS) indicators of autonomy features predominantly in the literature, many studies generate their own instruments, specific to the research problem in question, using a combination of direct and indirect approaches to measuring WEE.

The heterogeneity in WEE measures in the literature shows that researchers tailor their measurement needs to the specific research question and data constraints. This literature further points to the difficulty in obtaining a single instrument to measure WEE across time and space. Yet we acknowledge the importance of such an instrument for policy and practice. Thus, researchers and practitioners are faced with the very difficult trade-off between specificity and generalizability. Consequently, attempts to measure WEE should closely map the measure to a conceptual framework, and allow for the possibility of benchmarking a context-specific instrument to a more generalizable indicator. The benefit of doing so will likely trigger new and innovative approaches to measurement, creating opportunities for cross-disciplinary dialogue, compare and benchmark methods, and draw from mixed-methods.

### **3.2 Labour Market Domain**

Not surprisingly, a good proportion of papers on WEE focus on the labour market domain. In fact, the concepts of WEE and employment are so intertwined that Anderson and Eswaran (2009) contend “that greater labour market access for women increases their autonomy has almost come to be taken as a stylized fact in development economics (p. 179).” In the framework above the relationship between labour markets and WEE could be *direct* by influencing a woman’s relative income share or *indirect* by way of labour market outcomes such as labour force participation, hours worked and occupational choice. Earned income has been front and centre in this literature, especially in intrahousehold allocation modelling

where a woman's bargaining power is proxied by the ratio of a woman's income relative to her spouse's as in equation (2) (see for instance the seminal work by Browning and Chiappori, 1998; McElroy and Horney, 1981; Haddad et al., 1997; and Basu et al., 2002).

Anderson and Eswaran (2009) provide a nice recent example of the interrelationship between these measures. They use data from rural Bangladesh to investigate the determinants of women's empowerment within households, looking specifically at the impact of earned income (i.e. wages that women derive directly from employment) compared to unearned income (derived from asset ownership), controlling for household income. Women's empowerment is directly measured in terms of autonomy and household decision-making power, specifically whether women have any say in decisions to make household purchases. Anderson and Eswaran (2009) find that earned income has a larger effect than unearned income in empowering women in the household in so far as their autonomy or decision-making power is concerned. Their results also show that working on the household farm provides women no more autonomy than doing housework even though such farm work generates income, because women do not earn this income independently from their husbands. An important result from this paper is that it is earned income, not individual unearned income, which influences their autonomy, raising two important points. First, from a measurement perspective, this suggests the importance of ensuring data collection measures individual earnings by source. Second, as they show in their theoretical model, the difference can be explained by the fact that unearned income does not lead to a trade-off between leisure (or household public good production) and labour, leading to diverging predictions on autonomy. Finally, this distinction is pertinent for policy makers as it questions the generalizability of cash transfers or other demogrant-type transfers in raising WEE.

Similarly, Mahmud and Tasneem (2014) also study the impact of paid work on women's empowerment in Bangladesh, using indicators they develop and apply in a household survey. Specifically, the researchers collected data on several direct and indirect measures of empow-

erment. For example, all women aged 15 years or more were asked about their participation in economic activities, their agency regarding income use, their mobility in the public domain, their participation in community life, and their personal attitudes and self-perceptions. They find that women who regularly work outside the home are more likely to experience freedom of mobility and self-awareness of their rights, and more likely to experience respect and decision-making power in their household and community. They document some of the negative characteristics of working outside the home, such as physical insecurity (i.e. harassment) and ill health effects of long work hours. From a purely measurement perspective, in addition to the usual identification concerns due to endogeneity in understanding pathways of empowerment in this domain, the authors note the difficulties in adequately measuring work in survey data, particularly for smaller productive tasks which are undertaken simultaneously with chores.

Cash transfer programs provide an interesting opportunity to study the impacts of income on WEE because they typically endogenously increase a woman's income independently of her labour supply behaviour, and the discussion in Radel et al. (2016) highlights some of the tensions mentioned above. On the one hand, conditional cash transfers (CCTs) may increase empowerment by changing intra-household bargaining and dynamics. On the other hand, they may "reinforce existing socially prescribed roles (p. 3)." Radel et al (2016) explore whether Mexico's CCT program Oportunidades empowers smallholder farmer women by improving intra-household gender dynamics. Using both ethnographic and quantitative methods, the authors find CCT recipients are more likely "to have experienced an enhanced position within their households, translating into improvements in land control and a lessening of the discrepancies between participation in farm decision-making, labour, and income (p. 9)." This finding contrasts with Anderson and Eswaran's finding that earned, and not unearned, income lead to higher autonomy. The differences in context may help reconcile this

as baseline empowerment may be very different between Mexican and Bangladeshi women.<sup>11</sup> This distinction flags the importance of considering context in the measurement of WEE.

Majlesi (2016) explores how changes in labour market opportunities in Mexico affect women’s decision-making power in the household. He measures women’s decision-making power relative to that of her husband by utilizing the Mexican Family Life Survey responses about who in the household makes decisions over consumption of household basic needs and major purchases, health and education (own and children’s), labour supply and control over money. These measures, which are mostly subjective, provide insights into the decision-making process and are thus described in our taxonomy as direct because they can be seen to reflect spouses’ Pareto weights in an intra-household framework. Majlesi (2016) finds that “labour demand shocks which change the relative number of jobs available for women in the Mexican manufacturing sector [positively] affect women’s relative decision-making power within households (p. 44),” consistent with the theory of bargaining power in an intra-household allocation framework.

Labour market opportunities also take the form of entrepreneurship and the relationship between entrepreneurship, material wellbeing and WEE is illustrated in the case of Brazil in Mello and Schumink (2016). Using semi-structured interviews of participants in a rural collective microenterprise program, they find that women reported greater knowledge and confidence around natural resource management, and a ‘greater voice’ in household decisions. Hence, the authors find a positive relationship between entrepreneurship and WEE in terms of women’s access to resources and land.

Over the past ten years many researchers have studied the relationship between microfinance and WEE. Microfinance can empower women by increasing their access to and control over economic resources (i.e. markets, income, assets, and savings) and ease their entry

---

<sup>11</sup> Martinez-Restrepo et al. (2017) make the compelling case that the notion of household autonomy and control over resources in Latin America is very unique, as women already participate in the labour market in large numbers and comparatively to their South Asian counterparts already make quite a few household decisions.

into entrepreneurship and thus generate income or increase productivity. Other studies look beyond the household level to examine the impact of microfinance on women's social capital and collective forms of agency. Sanyal (2009) uses interviews to examine whether access to credit has an impact on women's empowerment by studying forms of collective action taken by microfinance credit groups. In this context, WEE is measured directly by studying "women's capacity to increase self-reliance, their right to determine choices, and their ability to influence the direction of change by gaining control over material and nonmaterial resources (p. 530)." Study findings show that the group lending model of microfinance, with its built-in interactions between group members, has the potential to promote women's social capital, to increase their ability to organize, and to improve their collective agency.

A growing body of literature on the empowerment potential of microfinance points to the inadequacy of current approaches for measuring WEE, which has resulted in studies producing drastically different, often conflicting, results (e.g. Hulme and Arun, 2009; and Kabeer, 2001). Haile et al. (2012) set out to address the conflicting evidence on microfinance and women's empowerment. To test the cause of this discrepancy, they compare two microfinance providers in Ethiopia to see whether differences in the social-cultural, economic, and organizational contexts of these programs influence women's empowerment outcomes. Employing qualitative and quantitative methods, Haile et al. (2012) find that both microfinance programs empowered women in terms of their influence over expenditure decisions, ownership of assets, and reduction of marital conflict. The programs did not however lead to improvements in women's work load or in division of labour within the household.

Breuer and Asiedu (2017) investigate whether employment interventions targeting women have any effect on empowerment beyond the household. Specifically, their work speaks to the empowerment gains from employment to transfer into political or community participation domains. Their Togo study documents important psychological effects of employment that would allow women to break through any barriers to participation in public or community

life. This result is especially important in the context of our conceptual framework above because it adds evidence that the components of the bargaining power parameter  $\theta(y, \psi, \phi)$  are jointly determined. Morgan and Buice (2013) also link WEE to political participation, in a cross-country study of Latin America and the Caribbean. This macro-level study relates female employment levels to gendered attitudes towards women’s political participation. An interesting finding from their study is the nonlinearity in the proportion of women in the labour force that matters for changing attitudes. Research conducted by Orso and Fabrizi (2016) in Bangladesh, using DHS questions of autonomy (who in the household makes decisions about large household purchases, daily needs, visits to friends and family, child health, own health) corroborates this conclusion regarding the need to address community gender norms (measured using woman’s partner’s attitudes towards women’s empowerment) in order to economically empower women through microfinance. However, their results fail to find a strong relationship between these attitudes and women’s empowerment measures.<sup>12</sup>

### 3.3 Control Over Resources Domain

A woman’s agency within the household is commonly measured and empirically studied through investigations of women’s control and decision-making power over household resources. A number of recent excellent insights into this domain comes from investigations of social programs aimed at economically empowering women (such as micro-credit, cash transfers and savings programmes). The basic idea can be simply illustrated using the conceptual framework outlined above in which decision-making power, and hence control over resources, can be linked to Pareto weights and the ability of women to assert their own preferences.

---

<sup>12</sup> The relationship between political participation and WEE is also illustrated by Goldman and Little (2014) who show that NGO involvement is positively associated with both women’s increased agency (measured by her power in household decision making) and increased political participation in society (measured by the degree to which a woman participates in community meetings, and her attitudes around women’s rights and domestic violence). According to the authors, this demonstrates the transformative potential and relationship between women’s individual agency and their political participation, and wider social change.

Provide women with the opportunity to see an increase in  $\theta$  (say through higher incomes or self-esteem), as the logic goes, then more weight is placed on their preferences, and the more control over household resources they will have.

Long hailed for its promise to reduce poverty and economically empower women, the empirical evidence of micro-finance on achieving both goals has been mixed (Kabeer, 2001; Roodman, 2011). Several recent papers by Garikipati provide excellent examples of this mixed evidence and highlight the role that measurement of WEE can play in reconciling this evidence. For example, Garikipati (2008) examines quantitative and qualitative evidence on loan use to assess the impact of microcredit on beneficiary households and WEE in rural India. The study uses four direct measures of empowerment (women's ownership and control over household assets and incomes, her say in household decisions, allocation of her work time, and her ability to share household chores). A woman is considered empowered if three or more of these indicators are positive. Garikipati (2008) observes that women's loans often end up financing household durable goods, which does little to empower women who have little control over household resources. She concludes, therefore, that microcredit may fail to improve women's empowerment as long as gender norms in terms of control over household resources are skewed against them. We can relate this to our conceptual framework above by considering the bargaining expression in equation (5)  $\theta(y, \psi, \phi) = \left( \frac{y_f}{y_f + \psi y_m} \right)^{e^{(1-\phi)}}$  : holding  $y_m$  and  $\phi$  constant, even a large increase in  $y_f$  will not lead to greater control over household resources if social norms - in this case patriarchal hold on assets - is very high (e.g. a large  $\psi$ ). Further research conducted by Garikipati (2013) corroborates that women's microfinance loans may be diverted into household needs and assets which they do not control, leaving them unable to make repayments and, paradoxically, further widening the gap between men and women. In this paper, she makes a compelling case for rethinking measurement. According to Garikipati (2013), using *outcomes* (such as loan access) alone is insufficient and possibly also misleading. Echoing the work by Kabeer (1990 and 2001) and many others

reviewed above, she advocates for measures which focus on *process*, which using our typology would relate more to *direct* measures.

Qualitative research from Ghana echoes these mixed findings. Ganle et al. (2015) analyze the impact of a rural microcredit program on WEE. They define empowerment as a ‘process of change’ that “enhances the ability [of individuals] to exercise choice and freedom in ways that positively contribute to their well-being (p. 336).” Ganle et al. use a combination of direct and indirect measures for empowerment, including women’s participation in income-generating activities, disposable income, control over loan use, involvement in family decision-making, freedom from domination and abuse, reduced economic dependence on their husband, mobility, and self-confidence and assertiveness. Their results point to heterogeneous effects of access to finance and empowerment. While some women seemingly experience increased empowerment, they also find a nil effect on women who have little control over loan use, and worse, they find negative effects on women who are unable to repay their loans. Ganle et al. (2015) attribute these differences to women’s relative ability to service their debt on time, and they conclude that consequently certain models of microfinance (i.e. those with adequate screening measures in place, those offering smaller loan amounts, etc.) and certain clients (i.e. women that already have an income-generating activity profitable enough to repay the loan) are more likely to achieve empowerment.

A third example also finds different results depending on the concept (and hence measurement) of empowerment. Weber and Ahmad (2014) examine the impact of microfinance on Pakistani women’s empowerment. The study partitions the concept of empowerment into two dimensions: financial empowerment and social empowerment. Both dimensions are measured directly: the indicators used to track financial empowerment include women’s decisions about their loan, income use, and control of financial assets, whereas social empowerment is measured by analyzing women’s level of decision-making power in her household and her freedom of mobility. Weber and Ahmad (2014) find that women in higher loan cycles expe-

rienced greater financial empowerment, while the evidence on social empowerment is mixed. They attribute this discrepancy to the complexity of empowerment as a social construct.

Mahmud et al. (2012) analyze the determinants of WEE among women involved in a health and micro-credit experiment in rural Bangladesh. They measure empowerment directly by studying women’s decision-making control over their own life, measured along four dimensions (self-esteem, participation in household decision-making, freedom of mobility, and control of material resources). A key result of their study is that they document the important role of formal education and media exposure in empowering women: more educated women are more likely to experience high levels of self-esteem and freedom of mobility.

More recently, cash transfers have played an increasing role in development programming targeting women. These cash transfers, often conditional on beneficiaries enrolling their children in school and/or maintaining regular health checks, are most often distributed to women. A rationale for doing so is based on the early literature on intra-household allocation which found that an extra dollar given to a mother was more likely spent on food, children’s schooling and health than an extra dollar given to the father (Thomas, 1990; Thomas and Strauss, 1995; Fiszbein and Schady, 2009). While the target indicators for improvements are children’s health and education, by giving the transfer to the mother, these cash transfer programs could increase her bargaining power. Bonilla et al. (2017) study the women’s empowerment impact of the Government of Zambia’s Child Grant Program, an unconditional cash transfer given to poor mothers of young children. The study adopted a mixed-methods evaluation approach involving a longitudinal clustered randomized control trial among households in rural Zambia. They found that beneficiary women overwhelmingly maintained control over the use of cash transfers for household investment and savings purposes, a positive effect on empowerment.<sup>13</sup> Entrenched gender norms, however, moderate this effect if men’s dominance in household decision-making is maintained.

---

<sup>13</sup> These results echo earlier findings on Mexico’s Cash Transfer program PROGRESA (Adato et al., 2000).

Similar results are observed by Ashraf et al. (2010) in a study of a savings intervention in the Philippines. The idea is to provide women with control over existing financial resources, rather than increasing their income. They run a randomized controlled trial to examine whether access to a financial savings account impacts women’s decision-making power over household spending. Decision-making power is measured by women’s say over things like family purchases, recreational spending, family planning, and children’s education. The authors find that access to a savings account positively impacts women’s empowerment by increasing their decision-making power within the household.

Recognizing that women in rural areas are among the poorest, agricultural interventions may be key to raising living standards, incomes and thus empowerment. To measure and monitor the impact of such interventions on women’s empowerment, Alkire et al. (2013) developed the Women’s Empowerment in Agriculture Index (WEAI). This survey-based index measures women’s empowerment directly across five domains of decision-making power (e.g. production, productive resources, income, leadership, and time use). Each domain is assigned a value ranging from 0 to 1, generating a country score that sits between 0% and 100%, where higher values reflect greater levels of women’s empowerment. They apply this instrument to different settings (Bangladesh, Guatemala, Uganda) and find that the source domains for empowerment vary across culture and context. We return to a discussion of the WEAI in section 3.5.

### **3.4 Marriage, Fertility and Child Rearing Domains**

The relationship between marriage and empowerment is often discussed in the context of threat points: the more empowered a woman is, so the logic goes, the more she will be able to bargain and negotiate to assert her preferences because she is now more likely to credibly threaten to leave the marriage. This is the argument developed by McElroy and Horney (1981) and taken up in Eswaran (2002), Doepke and Kinderman (2017) and Anderson and

Eswaran (2009). The advent of cash transfer programs has provided a unique opportunity to investigate how empowerment influences marriage. In an evaluation of Mexico's PROGRESA, Bobonis (2011) tests this relationship. Theoretically, he argues, the direction of the effect could go in two ways. Increased income controlled by women will empower them and provide them with greater economic independence, with a greater potential for marriage dissolution. Conversely, an increase in unearned income could reduce stress and therefore spousal conflict, with a consequential reduction in the potential for marital dissolution. He finds a small but significant increase in marital dissolution among Mexican beneficiaries of the cash transfer program. In this empirical application, the instrument for empowerment is the cash transfer, which (directly) proxies for the woman's bargaining power. Jennings (2014) provides insights, using innovative subjective measures of marital experiences and perceptions, into the relationship between marital discord (disagreements or perceptions of disagreements, indicating different preferences) and marital dissolution in Nepal.

Since empowerment can lead to increased bargaining power within the household, it is possible that empowerment processes will trigger male backlash and increase intimate partner violence (IPV). Empowerment may shift the status quo in power relations within the household, leading to an increased probability of conflict and IPV. By increasing a woman's fallback position, empowerment may conversely reduce the probability of IPV if they are more able to exit the marriage. The evidence on this issue is mixed. From a measurement perspective, there are multiple pitfalls of using the incidence of IPV or domestic abuse as measures of empowerment. First, as above, there is no clear theoretical prediction about whether empowerment positively or negatively affects IPV. Second, the incidence of IPV is best classified as an indirect measure because regardless of whether it is an outcome positively or negatively influenced by empowerment, it is most likely also determined by factors independent of empowerment. Finally, most self-reported measures of IPV are likely measured with considerable error, partly because of the sensitive nature of the issue and

partly because of the difficulties in conceptualizing IPV (McHugh et al, 2005).

In this context, women’s experiences of IPV can be used as an indirect measure of WEE, whereas attitudes toward IPV are considered as a direct measure of WEE as they point to broader gender inequality in social norms. To this end, we distinguish between studies that analyze actual occurrences of IPV versus social attitudes toward IPV. Ghimire et al. (2015) find that widespread education reduced actual occurrences of IPV in Nepal and they show that this effect is driven by improvements in both women’s and men’s educational attainment. Pierotti (2013), meanwhile, uses DHS data to study the cross-country relationship between education and women’s attitudes about IPV. She examines attitudes toward IPV by asking women whether a husband is justified in beating his wife in various hypothetical situations, and finds that increased levels of female education go hand in hand with rejecting IPV. As well, a husband’s educational attainment is positively associated with his wife’s attitudes about IPV. Yount and Li (2009, 2010) corroborate this finding for Egypt.

Bobonis et al. (2013) also distinguish between actual IPV (measured as in the DHS as a combination of physical, sexual and emotional abuse) and threats of IPV in their investigation of the Mexican Conditional Cash Transfer program. While both measures may suffer from measurement error, the error should be independent of assignment to treatment (i.e. benefiting from the cash transfer). They find that beneficiaries are less likely to report being a victim of IPV, but more likely to have received threats of violence. These results add credence to the theoretical relationship described above between empowerment and violence.

One unresolved issue in this literature is the effect that a woman’s economic status, and specifically her participation in the labour market, has on her risk of IPV. Some studies find that employed women experience higher levels of IPV (Rocca et al. 2009), and others find the opposite relationship or no relationship at all (Kotsadam et al. 2016). Villarreal (2007) addresses this discrepancy by linking this relationship to the level of control exercised by her husband in the case of Mexico. He finds that women are more likely to experience IPV

and less likely to work if they are in a relationship with a controlling man. However, once they are employed, their risk of IPV is reduced. Grabe et al. (2015) find a similar negative association between women’s land ownership and IPV in Nicaragua and Tanzania.

In Myanmar, Miedema et al. (2016) show that a woman’s higher income relative to her husband’s does not necessarily translate into higher levels of empowerment. Instead, prevalent norms of male entitlement to family resources determined that female respondents are more likely to experience abuse if they were married under conditions of social or economic insecurity, or hold little control over household finances. They measure empowerment by examining a woman’s economic insecurity before marriage, her control over and access to economic resources within the marriage, her level of social isolation, her bargaining power and her sexual agency. These results can be framed within the conceptual framework discussed in section 2. The authors explicitly point to psychological distress caused by an abusive husband as a neutralizing force ( $\phi$  in equation (5)), which erodes the gains that increased relative income ( $y_f$ ) might have had on increased empowerment ( $\theta$ ).

At the other end of the marriage timeline, the literature has established a relationship between women’s empowerment and conditions at marriage (age at first marriage and bride price). Desai and Andrist (2010) provide an excellent discussion of these issues in the Indian context and find empirical support for a positive relationship between age at marriage and three measures of empowerment - control over family resources, access to resources and participation in household decisions. This contrasts with Crandall et al. (2016) who fail to find empirical support for an association between age at first marriage and empowerment in their study of Egypt. They argue that age at first marriage may not be an adequate proxy for post-marital agency.

Similarly, Gaspart and Platteau (2010) close the loop by establishing the relationship between marriage payments and empowerment. In theory, marriage payments might play a role as a commitment device to minimize the probability of marriage dissolution. A reduction

in bride prices may thus empower women in the marital setting, a result they corroborate using data from Senegal. This negative result of bride-price on empowerment within the marriage outweighs the often cited possible positive effect of bride-price on increasing a woman’s fall-back position. Instead, they argue, policy makers should consider encouraging income-earning opportunities outside agriculture to increase this fall-back position, echoing the results in the literature cited above (e.g. Anderson and Eswaran, 2009). In an interesting analysis of gender effects of an inheritance law reform in India, Roy (2015) shows that the social norm of bequeathing land to sons is maintained by “gifting” it to them and compensating daughters through education or dowries (despite the latter being illegal). Their paper provides evidence of the difficulties in changing social norms in the gender distribution of inheritance and highlights the difficulties in trying to change them *de jure*.

One of the most important decisions couples make is whether to have children, when and how many. Whether children are considered “normal goods” from the perspective of demand theory, it is a well established fact that as labour market opportunities for women improve, so does the opportunity cost of having children. We would thus expect the demand for children to be decreasing with economic empowerment, which would follow from global empirical evidence that indeed shows a negative relationship between a woman’s income and fertility rate. Yet the relationship between fertility and WEE lacks substantial exploration in the existing literature. Among the limited body of work in this area is research by Ashraf et al. (2014) who study household bargaining dynamics around fertility in Zambia. They find that women’s decision to use concealed birth control, especially those within spousal discordant couples, involves balancing the risk of alienating their husbands if they were not consulted prior, and their own desire to postpone childbearing. This trade-off is characterized as a ‘moral hazard in household decision-making’.<sup>14</sup>

Fertility decisions also include household preferences over the gender of the children,

---

<sup>14</sup> While their paper is clearly about empowerment, their paper does not rely on any explicit measurement of empowerment.

where in some settings both parents have strong son-preferences (Clarke, 2000; Rosenblum, 2013). Yount (2005) examines the influence of Egyptian women’s access to resources and exposure to new ideas on their empowerment. She uses direct measures of empowerment including women’s attitudes around son preference and household decision-making power, particularly, who in the household has the final say about visiting friends and family, household spending, children’s education, children’s marriage and children’s health care. Her results show that urban, educated, and working women report greater influence in child rearing decisions and lesser son preference. This suggests that exposure to new ideas may improve women’s empowerment in Egypt.

A small but growing body of research on WEE is focused on child care, with most studies in this area using direct measures that capture women’s household decision-making power, intra-household allocation of labour and responsibility for unpaid care. For example, Luke et al. (2014) examine the influence of spouses’ relative earnings on the division of housework among tea plantation workers in India. Applying a mixed-methods approach, the authors assess the extent to which earnings impact women’s bargaining power over four household tasks typically assigned to women: cooking, clothes washing, wood collection, and child care. They find that a woman’s bargaining power increases with her share of household income (e.g. the standard bargaining parameter in equation (2)), until her share of household income exceeds that of her husband. Their qualitative findings further indicate that social norms shape husbands’ participation in household tasks, with highly feminized activities like clothes washing and child care predominately performed by women regardless of earnings.

### **3.5 Common Instruments used to Measure WEE**

In addition to highlighting a lack of convention on how to define and measure WEE, our literature review also finds that researchers draw on a variety of sources when selecting the measures of WEE that they use. There are two widely used indicators of WEE. The first

comes from the set of measures included in the Demographic and Health Surveys (DHS). Because they are nationally representative, often repeated every four to five years, and apply the same questionnaire across countries (with some local variations), they provide a great opportunity to generate a generalizable index across time and space. These surveys also provide a wide spectrum on socio-economic, population and health indicators allowing for rich data that can be used to explore many dimensions and topics of WEE. The indicators in the DHS most often used as proxies for WEE include direct measures of women’s autonomy, decision-making power and gender attitudes towards violence against women.

The second is the International Food Policy Research Institute’s Women’s Empowerment in Agriculture Index (WEAI) (Alkire et al., 2013). This survey-based index of women’s empowerment is an instrument which aggregates across five domains of decision-making. These domains capture important dimensions of intra-household models, namely production, productive resources, income, leadership, and time use. In addition, the WEAI measures women’s empowerment relative to men further connecting the instrument to the theoretical concept of empowerment outlined in intra-household models of decision-making. The fact that it can aggregate across different domains, while generating a single indicator, can be very useful to provide some balance of specificity and generalizability. While this measure is among the most complete measure of WEE in the literature, two important points are worth highlighting. First, as an index, there is always the issue of how to weight across components. Second, it was originally developed for agricultural settings, so its application to urban settings may require modification.

An emerging body of research on women’s empowerment in health is concerned with the objective and quantitative measurement of attitudes, personality traits and behaviours associated with increased empowerment and well-being, or what is known as “psychometrics.” Research using psychometrics involves the conversion of qualitative aspects of life and experience into quantitative data, in order to capture clinically important attitudes and be-

haviours in addition to the reduction of specific health symptoms (Ruckstein and Schull 2016, 261). Much of the existing research on women’s empowerment and psychometrics is from non-developing country contexts (e.g. Johnson et al., 2005), but this is slowly changing. One recent example is Sebert Kuhlmann et al. (2017) who develop and test a set of psychometric measures in a study evaluating the effectiveness of social accountability programs promoting maternal and reproductive health in Malawi. They measured participants’ awareness and attitudes, as well as their perception of the supportiveness of the surrounding environment. Women’s empowerment was captured across 12 psychometric scales using both direct and indirect measures based on knowledge and awareness of their rights, attitudes toward gender norms, acceptance of gender-based violence and the right to refuse sex, self-efficacy and perception of community support in times of crisis.

Measuring psychosocial dimensions of WEE is a growing area and has tremendous potential to generate significant improvements in our ability to measure both direct and subjective dimensions of empowerment. There is a growing literature demonstrating the relationship between Gender Equality and behavioural economics or psychology (e.g. Heilman and Kusev, 2017). The field is only beginning to scratch the surface of these research methods for measuring WEE in developing countries. Donald et al. (2017) and Martinez-Restrepo et al. (2017) provide important contributions on these fronts.

## 4 Conclusion

This paper has addressed the question of how to define and measure WEE in international development research, with a view to improving the design and evaluation of programmes and policies aimed at promoting women’s well-being. Building on the literature developed by economists on intra-household allocation and bargaining, we set out a proposed classification and conceptual framework for measuring WEE that distinguishes measures of the

direct determinants of empowerment from more indirect measures of the effects or outcomes of the empowerment process. We also distinguish between these direct and indirect measures of WEE and socially or externally imposed constraints (such as legally imposed constraints), and thus provide a three-way classification of WEE measures: direct, indirect and constraints. Findings from a systematic review of the literature were then presented to showcase the diversity of published approaches that exist to measure WEE.

The effectiveness of any given approach to measuring WEE will ultimately depend on the degree of fit between researchers' conceptualization of empowerment and the measures they employ, and the available data. Our review finds that the best approach to measurement is to define WEE and map the measure to a conceptual framework, which may be domain specific. There is also room to generate new measures of WEE, especially to allow for a refinement of subjective direct measures. However, it is best to benchmark new measures against those employed in widely used instruments, such as the DHS or WEAI

We believe that our literature review and classification makes an important contribution to the existing literature on measurement of WEE. We build on the conceptualization of WEE by Kabeer (1999) and the subjective/objective categorization by Quisumbing et al. (2016) and provide a classification taxonomy that is directly grounded in microeconomic modelling of decision-making. Specifically, we illustrate this classification in the context of intra-household bargaining models. These models suggest that outcome measures (indirect measures in our typology) are potentially problematic as they are also determined by factors independent of WEE. With this conceptual framework and classification, we survey the recent and multidisciplinary literatures on WEE in developing countries and classify the measures that they use according to this typology. We view this paper and the discussion around measurement as imperative for policies and programming to promote empowerment among women by providing a framework for measuring WEE and the empowerment impacts of development programming.

# References

- Adato, M., B. de la Brière, D. Mindek and A. Quisumbing. 2000. "The Impact of Progresa on Women's Status and Intrahousehold Relations." IFPRI Final Report.
- Alkire, S., R. Meinzen-Dick, A. Peterman, A. Quisumbing, G. Seymour and A. Vaz. 2013. "The Women's Empowerment in Agriculture Index." *World Development* 52: 71-91.
- Anderson, S. and M. Eswaran. 2009. "What determines female autonomy? Evidence from Bangladesh." *Journal of Development Economics* 90: 179-191.
- Ashraf, N., E. Field and J. Lee. 2014. "Household Bargaining and Excess Fertility: An Experimental Study in Zambia" *American Economic Review*
- Ashraf, N., D. Karlan and W. Yin. 2010. "Female Empowerment: Impact of a Commitment Savings Product in the Philippines." *World Development* 38(3): 333-344.
- Basu, K., Narayan, A. and M. Ravallion. 2002. "Is literacy shared within households? Theory and evidence for Bangladesh." *Labour Economics* Vol. 8: 649-665.
- Basu, K. 2006. "Gender and Say: A Model of Household Behaviour with Endogenously Determined Balance of Power." *The Economic Journal* Vol. 116(April): 558-580.
- Breuer, A. and E. Asiedu. 2017. "Can Gender-Targeted Employment Interventions Help Enhance Community Participation? Evidence from Urban Togo." *World Development* 96: 390-407.
- Bobonis, G. 2011. "The Impact of Conditional Cash Transfers on Marriage and Divorce" *Economic Development and Cultural Change* Vol. 59(2): 281-312.
- Bobonis, G., M. Gonzalez-Brenes, and R. Castro. 2013. "Public Transfers and Domestic Violence: the Roles of Private Information and Spousal Control." *American Economic Journal: Economic Policy* Vol. 5(1): 179-205.
- Bonilla, J., R. Castro Zarzur, S. Handa, C. Nowlin, A. Peterman, H. Ring and D. Seidenfeld. 2017. "Cash for Women's Empowerment? A Mixed-Methods Evaluation of the Government of Zambia's Child Grant Program." *World Development* Vol.95: 55-72.
- Bourguignon, F., M. Browning, and P.-A. Chiappori. 2009. "Efficient Intra-Household Allocations and Distribution Factors: Implications and Identification." *Review of Economic Studies* Vol 76(2): 503-528
- Browning, M. and P.A. Chiappori. 1998. "Efficient Intra-Household Allocations: A General Characterization and Empirical Tests." *Econometrica* 66(6): 1241-1278.
- Buvinic, M. and R. Furst-Nichols. 2016. "Promoting Women's Economic Empowerment: What Works?" *The World Bank Research Observer* Vol. 31(1): 59-101.
- Cherchye, L., B. de Rock and F. Vermeulen. 2012. "Married with Children: A Collective Labour Supply Model with Detailed Time Use and Intrahousehold Expenditure Information" *American Economic Review* Vol. 102(7): 3377-3405.
- Clarke, S. 2000. "Son preference and sex composition of children: Evidence from India" *Demography* Vol. 37(1): 95-108.
- Crandall, A., K. VanderEnde, Y. F. Cheong, S. Dodell, and K. Yount. 2016. "Women's age at first marriage and postmarital agency in Egypt" *Social Science Research* Vol. 57: 148-160.
- Cronin-Furman, K., Gowrinathan, N. and R. Zakaria. 2017. *Emissaries of Empowerment*. New York: Colin Powell School for Civic and Public Leadership, The City College of New York.
- Desai, S. and L. Andrist. 2010. "Gender Scripts and Age at Marriage in India" *Demography* Vol. 47(3): 667-687.

- Donald, A., G. Koolwal, J. Annan, K. Falb and M. Goldstein. 2017. "Measuring Women's Agency" World Bank Policy Research Working paper #8148.
- Doepke, M. and F. Kinderman. 2017. "Intrahousehold Decision-Making and Fertility." in *Demographic Change and Long-Run Development* M. Cervellati and W. Sunde Eds. MIT Press
- Eswaran, M. 2002. "The empowerment of women, fertility, and child mortality: Towards a theoretical analysis." *Journal of Population Economics* Vol. 15: 433-454.
- Fisher, H. 2012. "Fertility in a Collective Household Model." Unpublished manuscript, University of Sydney. [http://www.webmeets.com/files/papers/res/2013/766/Fertility\\_Oct12\\_RES.pdf](http://www.webmeets.com/files/papers/res/2013/766/Fertility_Oct12_RES.pdf)
- Fiszbein, A. and N. Schady. 2009. "Conditional Cash Transfers: Reducing Present and Future Poverty." World Bank Policy Research Report #47603. World Bank.
- Ganle, J. K., K. Afriyie and A. Y. Segbefia. 2015. "Microcredit: Empowerment and Disempowerment of Rural Women in Ghana." *World Development* 66: 335-345.
- Garikipati, S. 2008. "The Impact of Lending to Women on Household Vulnerability and Women's Empowerment: Evidence from India." *World Development* 36(12): 2620-2642.
- Garikipati, S. 2013. "Microcredit and Women's Empowerment: Have We Been Looking at the Wrong Indicators?" *Oxford Development Studies* 41(sup1): S53-S75.
- Gaspart, F. and J.-P. Platteau. 2010. "Strategic Behavior and Marriage Payments: Theory and Evidence from Senegal" *Economic Development and Cultural Change*. Vol. 59(1): 149-185.
- Ghimire, D., W. Axinn, and E. Smith-Greenaway. 2015. "Impact of the spread of mass education on married women's experience with domestic violence." *Social Science Research* Vol. 54: 319-331.
- Global Affairs Canada. 2017. "Women's Economic Empowerment: Guidance Note." Access at [http://international.gc.ca/world-monde/issues\\_development-enjeux\\_developpement/priorities-priorites/women-femmes.aspx?lang=eng](http://international.gc.ca/world-monde/issues_development-enjeux_developpement/priorities-priorites/women-femmes.aspx?lang=eng)
- Golla, A., Malhotra, A., Nanda, P. and R. Mehra. 2011. Understanding and Measuring Women's Economic Empowerment: Definition, Framework and Indicators. Washington, D.C.: ICRW. <http://www.icrw.org/sites/default/files/publications/Understanding-measuring-womens-economic-empowerment.pdf>
- Grabe, S., R. Grose, and A. Dutt. 2015. "Women's Land Ownership and Relationship Power: A Mixed Methods Approach to Understanding Structural Inequities and Violence Against Women." *Psychology of Women Quarterly* Vol. 39(1): 7-19.
- Haddad, L., Hoddinott, J. and H. Alderman. 1997. *Intrahousehold Resource Allocation in Developing Countries: Models, Methods, and Policy*. London: Johns Hopkins University Press in Cooperation with the International Food Policy Research Institute.
- Haile, Hirut B., Bettina Bock and Henk Folmer. 2012. "Microfinance and Female Empowerment: Do institutions matter?" *Women's Studies International Forum* 35: 256-265.
- Hanson, Susan. 2009. "Changing Places Through Women's Entrepreneurship." *Economic Geography* 85(3): 245-267.
- Hulme, D. and T. Arun. 2009. *Microfinance: A Reader*. London: Taylor and Francis.
- Iyigun, M. and R. Walsh. 2002. "Endogenous gender power, household labour supply and the quantity-quality tradeoff." Discussion Papers in Economics Working Paper No. 02-03. Centre for Economic Analysis, University of Colorado at Boulder, Colorado, USA.
- Jennings, E. 2014. "Marital Discord and Subsequent Dissolution: Perceptions of Nepalese Wives and Husbands." *Journal of Marriage and Family* Vol. 76: 476-488.

Johnson et al. 2005. "Assessing Psychological Health and Empowerment in Women: The Personal Progress Scale Revised." *Women & Health* Vol. 41(1): 109-129.

Kabeer, N. 1999. "Resources, agency, achievements: reflections on the measurement of women's empowerment." *Development and Change* 30: 435-464.

Kabeer, N. 2001. "Conflicts over credit: Reevaluating the empowerment potential of loans to women in rural Bangladesh." *World Development* 29(1): 63-84.

Kabeer, N. 2017. "Women's Economic Empowerment and Inclusive Growth: Labour Markets and Enterprise Development." GROW Research Working Paper Series. Institute for the Study of International Development, McGill University, Montreal, Canada.

Katz, E. 1997. "The Intrahousehold Economics of Voice and Exit." *Feminist Economics* Vol. 3(3): 25-46.

Koolwal, G. and R. Ray. 2002. "Estimating the Endogenously Determined Intrahousehold Balance of Power and Its Impact on Expenditure Pattern: Evidence from Nepal." Policy Research Working Paper WPS2814 Washington D.C., World Bank.

Kotsadam, A., G. Ostby, and S. Rustad. "Structural change and wife abuse: A disaggregated study of mineral mining and domestic violence in sub-Saharan Africa, 1999-2013." *Political Geography* Vol. 56: 53-65.

Luke, N., H. Xu, B. Thampi. 2014. "Husbands' Participation in Housework and Child Care in India" *Journal of Marriage and Family*. Vol. 76: 620-637.

Majlesi, K. 2016. "Labour Market Opportunities and Women's Decision Making Power within Households." *Journal of Development Economics* 119: 34-47.

Martinez-Restrepo, S., L. Ramos-Jaimes, A. Espino, M. Valdivia and J. Yancari Cueva. 2017. *Measuring Women's Economic Empowerment: Lessons from South America* Springfield, VA: IDRC, Fedesarrollo.

Mahmud, S., N. M. Shah and S. Becker. 2012. "Measurement of Women's Empowerment in Rural Bangladesh." *World Development* 40(3): 610-619.

Mahmud, S. and S. Tasneem. 2014. "Measuring 'Empowerment' Using Quantitative Household Survey Data." *Women's Studies International Forum* 45: 90-97.

McElroy, M. and M.J. Horney. 1981. "Nash-Bargained Household Decisions: Toward a Generalization of the Theory of Demand." *International Economic Review* Vol. 22(2): 333-349.

McHugh, M. C., N. A. Livingston and A. Ford. 2005. "A Postmodern Approach to Women's Use of Violence: Developing Multiple and Complex Conceptualizations" *Psychology of Women Quarterly* Vol. 29: 323-336.

Mello, D. and M. Schmink. 2016. "Amazon Entrepreneurs: Women's Economic Empowerment and the Potential for More Sustainable Land Use Practices." *Women's Studies International Forum*. <https://doi.org/10.1016/j.wsif.2016.05.001>

Miedema, S., S. Shwe, and A. Kyaw. 2016. "Social Inequalities, Empowerment and Women's Transitions into Abusive Marriages: A Case Study from Myanmar" *Gender and Society* Vol. 30(4): 670-694.

Mishra, K. and A. G. Sam. 2016. "Does Women's Land Ownership Promote Their Empowerment? Empirical Evidence from Nepal." *World Development* 78: 360-371.

Orso, C. E. and E. Fabrizi. 2016. "The Determinants of Women's Empowerment in Bangladesh: The Role of Partner's Attitudes and Participation in Microcredit Programmes." *Journal of Development Studies* 52(6): 895-912.

Pierotti, R. 2013. "Increasing Rejection of Intimate Partner Violence: Evidence of Global Cultural Diffusion." *American Sociological Review* Vol. 78(2): 240-265.

- Quisumbing, A., Rubin, D. and K. Sproule. 2016. "Subjective Measures of Women's Economic Empowerment." Unpublished manuscript.
- Radel, Claudia, Birgit Schmook, Nora Haenn and Lisa Green. 2016. "The Gender Dynamics of Conditional Cash Transfers and Smallholder Farming in Calakmul, Mexico." *Women's Studies International Forum*. <http://dx.doi.org/10.1016/j.wsif.2016.06.004>
- Rocca, C., S. Rathod, T. Falle, R. Pande, and S. Krishnan. 2009. "Challenging assumptions about women's empowerment: social and economic resources and domestic violence among young married women in urban South India." *International Journal of Epidemiology* Vol. 38: 577-585.
- Roodman, D. 2011 *Due Diligence: An Impertinent Inquiry into Microfinance* Centre for Global Development. Brookings Institution Press.
- Rosenblum, D. 2013. "The effect of fertility decisions on excess female mortality in India" *Journal of Population Economics* Vol. 26(1): 147-180.
- Ruckstein, M. and N.D Schull. 2016. "The Datafication of Health." *Annual Review of Anthropology* Vol. 46: 261-78.
- Sanyal, P. 2009. "From Credit to Collective Action: The Role of Microfinance in Promoting Women's Social Capital and Normative Influence." *American Sociological Review* 74: 529-550.
- Sebert Kuhlmann, A., Gullo, S., Galavotti, C., Grant, C., Cavatore, M. and S. Posnock. 2017. "Women's and Health Workers' Voices in Open, Inclusive Communities and Effective Spaces (VOICES): Measuring Governance Outcomes in Reproductive and Maternal Health Programmes." *Development Policy Review* Vol. 35(2): 289-311.
- Sen, A. 1989. "Development as capability expansion." *Journal of Development Planning* 19 (1): 41-58.
- Sen, A. 1990. "Gender and Cooperative Conflicts." in I. Tinker eds. *Persistent Inequalities: Women and World Development* New York: Oxford University Press.
- Sen, A. 1999. *Development as Freedom* Oxford University Press.
- Swain, R. B. and F. Y. Wallentin. 2017. "The Impact of Microfinance on Factors Empowering Women: Differences in Regional and Delivery Mechanisms in India's SHG Programme." *Journal of Development Studies* 53(5): 684-699.
- Taylor, G. and P. Perezniето. 2014. Review of evaluation approaches and methods used by interventions on women and girls' economic empowerment. London: Overseas Development Institute.
- Thomas, D. 1990. "Intra-Household Resource Allocation: An Inferential Approach" *Journal of Human Resources* Vol. 25: 635-664
- Thomas, D. and J. Strauss. 1995. "Human resources: Empirical models of household decisions." In Behrman J.R., & T. N. Srinivasan (Eds.), *Handbook of Development Economics* Vol. IIIA, pp. 1885-2023. Amsterdam: North Holland.
- Tornqvist, A. and C. Schmitz. 2009. Women's economic empowerment: scope for Swedish International Development Cooperation Agency (SIDA) Working Paper, Stockholm: SIDA.
- Vermuelen, F. 2002. "Collective Household Models: Principles and Main results" *Journal of Economic Surveys* Vol. 16: 533-564
- Villareal, A. 2007. "Women's Employment Status, Coercive Control, and Intimate Partner Violence in Mexico" *Journal of Marriage and Family* Vol. 69: 418-434.
- Weber, O. and A. Ahmad. 2014. "Empowerment Through Microfinance: The Relation Between Loan Cycle and Level of Empowerment." *World Development* 62: 75-87.

- Yount, K. 2005. "Women's Family Power and Gender Preference in Minya, Egypt," *Journal of Marriage and Family*. Vol. 67: 410-428.
- Yount, K. and L. Li. 2009. "Women's 'Justification' of Domestic Violence in Egypt." *Journal of Marriage and Family* Vol. 71: 1125-1140.
- Yount, K. and L. Li. 2010. "Domestic Violence Against Married Women in Egypt." *Sex Roles* Vol. 63: 332-347.

Table 1: **Typology**

	Objective	Subjective
<b>Direct</b> Access to Resources Agency Control Over Resources Legal Norms Psychological Social Norms	I	II
<b>Indirect</b> Community, Public or Political Participation Health Knowledge, Education Labour Force Participation Social Status	III	IV
<b>Constraints</b> Cultural Geographical Legal Psychological Social	V	VI

Note: The following tables list the measures papers reviewed in this paper according to each cell

Table 2: Typology of Direct Objective Measures (Type I) in Surveyed Literature

Access to Resources	Carries cash on hand for household expenditures (Desai & Andrist 2010)
	Disposable income (Ganle et al. 2015)
	Food security (i.e. household supply of animal protein, vegetables and fruits) (Mello & Schmink 2016)
	Income earned from agricultural labour/production (Radel et al. 2016)
	Income earned through microenterprise (Mello & Schmink 2016)
Control Over Resources	Ownership of assets and savings (jointly or independently) (Haile et al. 2012)
	Name listed on home title or rental papers (Desai & Andrist 2010)
Social Norms	Shared division of domestic labour (Garikipati 2008; Haile et al. 2012)
	Time use (Garikipati 2008)

Note: This table corresponds to Cell I in Table 1

Table 3: **Typology of Direct Subjective Measures (Type II) in Surveyed Literature**

Access to Resources	Access to and use of natural resources on family landholdings (Mello & Schmink 2016)
	Ability to generate own income (Breuer & Asiedu 2017)
	Ability to save earned income (Ashraf et al. 2010)
	Economic dependence on husband (Gnale et al. 2015)
Agency	Ability to make choices and to act on them (Sanyal 2009; Orso & Fabrizi 2015)
	Control over children's education (Yount 2005; Ashraf et al. 2010)
	Control over family planning (i.e. contraception and number of children) (Ashraf et al. 2010 and 2014)
	Decision-making power across multiple domains, using the Women's Empowerment Index (WEAI) (i.e. production, productive resources, income, leadership, and time use) (Alkire et al. 2013)
	Decision-making power on healthcare (i.e. own healthcare, family planning, where a baby will be delivered, HIV testing) (Sebert Kuhlmann et al. 2017)
	Final say on child healthcare (Yount 2005; Orso & Fabrizi 2015)
	Final say on children's education (Yount 2005)
	Final say on own healthcare (Orso & Fabrizi 2015)
	Household bargaining power (Garikipati 2008; Ashraf et al. 2010; Desai & Andrist 2010; Mahmud et al. 2012; Luke et al. 2014; Weber & Ahmad 2014; Gnale et al. 2015; Crandall et al. 2016; Majlesi 2016; Mishra & Sam 2016; Sebert Kuhlmann et al. 2017)
	Control over household assets and income (Garikipati 2008; Mahmud et al. 2012; Weber & Ahmad 2014)
Control Over Resources	Control over own income use (Mahmud & Tasneem 2014; Breuer & Asiedu 2017)
	Control over the processes surrounding loan procurement and loan use (Garikipati 2013; Weber & Ahmad 2014; Ganle et al. 2015)
	Control over the use of cash transfers for household investment and savings (Bonilla et al. 2017)
	Decision-making power over agricultural production (Radel et al. 2016)
	Decision-making power over household spending (Yount 2005; Anderson & Eswaran 2009; Sanyal 2009; Ashraf et al. 2010; Haile et al. 2012; Orso & Fabrizi 2015)
	Decision-making power over land use and resource management (Mello & Schmink 2016)

Note: This table corresponds to Cell II in Table 1

Table 4: **Typology of Direct Subjective Measures (Type II) in Surveyed Literature - Continued**

Psychological	Aspirations regarding own future and the future of their children (Mahmud & Tasneem 2014)
	Capacity for self-efficacy and self-reliance (Sanyal 2009; Breuer & Asiedu 2017)
	Self-confidence and assertiveness (Gnale et al. 2015)
	Self-esteem (Mahmud et al. 2012)
	Self-perception of efficacy in financial decision-making (i.e. savings) (Ashraf et al. 2010)
Social Norms	Sense of control over their own lives (Mahmud & Tasneem 2014)
	Belief in a women's right to refuse sex (Sebert Kuhlmann et al. 2017)
	Freedom from domination and abuse (Gnale et al. 2015)
	Freedom of mobility (Sanyal 2009; Mahmud et al. 2012; Mahmud & Tasneem 2014; Weber & Ahmad 2014; Gnale et al. 2015; Orso & Fabrizi 2015; Crandall et al. 2016)
	Patriarchal beliefs held about women (Dutt & Grabe 2017)
	Resistance against traditional gender norms and hierarchies resulting in improved wellbeing or quality of life (Hanson 2009; Swain & Wallentin 2017)
	Women's attitudes about intimate partner violence, using DHS survey data or question set (Yount and Li 2009 and 2010; Pierotti 2013; Crandall et al. 2016; Sebert Kuhlmann et al. 2017)
	Women's attitudes around son preference (Yount 2005)

Note: This table corresponds to Cell II in Table 1

Table 5: **Typology of Indirect Objective Measures (Type III) in Surveyed Literature**

Community, Public or Political Participation	Civic participation (i.e. attendance and participation in community or village council meetings) (Sanyal 2009)
	Membership in local committees or the shalish (traditional dispute resolution system) (Mahmud & Tasneem 2014)
	NGO membership (Mahmud & Tasneem 2014)
	Participation in public protests or collective action (Sanyal 2009; Mahmud & Tasneem 2014; Sebert Kuhlmann et al. 2017)
	Goes to a health centre or hospital alone (Orso & Fabrizi 2015)
Health	Incidence of intimate partner violence (Villarreal 2007; Rocca et al. 2009; Ghimire et al. 2015; Grabe et al. 2015; Kotsadam et al. 2016; Miedema et al. 2016)
	Incidence of marital conflict (Haile et al. 2012)
	Knowledge and awareness of rights (Sebert Kuhlmann et al. 2017)
	Knowledge of labour laws (Mahmud & Tasneem 2014)
Knowledge/Education	Skills and knowledge around natural resource management (Mello & Shmink 2016)
	Social awareness (i.e. knowledge of local legal, political, and financial resources and ways of gaining access to them) (Sanyal 2009)
	Whether a woman watches television (i.e. media exposure) (Mahmud & Tasneem 2014)
	Participation in agricultural labour/production (subsistence or paid) (Radel et al. 2016)
	Participation in income generating activities (Ganle et al. 2015; Orso & Fabrizi 2015)
Labour Force Participation	Participation in paid work outside the home (Mahmud & Tasneem 2014)

Note: This table corresponds to Cell III in Table 1

Table 6: **Typology of Indirect Subjective Measures (Type IV) in Surveyed Literature**

Community, Public or Political Participation	Ability to attend community meetings (Sebert Kuhlmann et al. 2017)
	Ability to participate effectively in community meetings (Sebert Kuhlmann et al. 2017)
	Collective efficacy (i.e. perceived ability to work with people in the community to achieve collective aims) (Sebert Kuhlmann et al. 2017)
	Comfort level speaking at community meetings (Dutt & Grabe 2017)
	Political efficacy (Dutt & Grabe 2017)
Health	Ability to access health services (Sebert Kuhlmann et al. 2017)
	Ability to receive quality health services (Sebert Kuhlmann et al. 2017)
Social Status	Social capital (i.e. the ability and tendency to offer or draw on help in the event of personal problems and to address public problems in the community) (Sanyal 2009; Sebert Kuhlmann et al. 2017)
	Social connectedness through professional networks (Breuer & Asiedu 2017)
	Social interaction (i.e. ability to interact with people outside the network of family and kinship ties) (Sanyal 2009)
	Social recognition of women's skills and labour as valuable (including the labour of social reproduction) (Breuer & Asiedu 2017)

Note: This table corresponds to Cell IV in Table 1

Table 7: **Typology of Constraint Objective Measures (Type V) in Surveyed Literature**

Cultural	Access to education (for men and women) (Pierotti 2013)
	Age at first marriage (Crandall et al. 2016; Desai & Andrist 2010)
Geographical	Physical access to services and to markets (Orso & Fabrizi 2015)
Legal	Access to financial services (i.e. needing husband's permission to open a savings account) (Ashraf et al. 2010)
	Female land ownership (Mishra & Sam 2016)
	Patriarchal hold on family assets (Garikipati 2008)
Psychological	Media exposure (Yount 2005; Mahmud et al. 2012; Orso & Fabrizi 2015)
Social	Access to education (Mahmud et al. 2012; Ghimire et al. 2015)

Note: This table corresponds to Cell V in Table 1

Table 8: **Typology of Constraint Subjective Measures (Type VI) in Surveyed Literature**

Cultural	Harassment and abuse of women in public spaces (Mahmud & Tasneem 2014)
Psychological	Fear of social rejection or backlash (Breuer & Asiedu 2017)
	Internalized gender stereotypes (Breuer & Asiedu 2017)
Social	Gender division of labour (Luke et al. 2014)
	Gender norms indicating men as heads of household and primary decision-makers
	(Orso & Fabrizi 2015; Bonilla et al. 2017)

Note: This table corresponds to Cell VI in Table 1

Table 9: List of Journals Searched by Discipline (2005-2017)

Discipline	Journal	Discipline	Journal
Anthropology	American Journal of Physical Anthropology	Geography	Economic Geography
	Annual Review of Anthropology		Political Geography
	Current Anthropology	Int'l Development Studies	Progress in Human Geography
	Journal of Consumer Research		Development and Change
	Journal of Human Evolution		Development Policy Review
	Journal of Marriage and Family		Economic Development and Culture Change
	Social Forces		Journal of Development Studies
	Social Networks		Oxford Development Studies
	Demography		Studies in Comparative Int'l Development
	American Economic Journal: Applied Economics		Sustainable Development
	Econometrica		World Development
Demography Economics	Journal of Development Economics	Political Science	African Affairs
	Journal of Economic Literature		American Journal of Political Science
	Journal of Economic Perspectives		American Political Science Review
	Journal of Human Resources		Annual Review of Political Science
	Journal of Labour Economics		Comparative Political Studies
	Journal of Political Economy		Journal of European Public Policy
	Quarterly Journal of Economics		Journal of Peace Research
	The American Economic Review		Journal of Politics
	The Review of Economic Studies		Political Analysis
	International Journal of Epidemiology		Public Opinion Quarterly
Epidemiology Gender Studies	Feminist Theory	Sociology	American Journal of Sociology
	Gender and Society		American Sociological Review
	Gender, Work and Organization		Annual Review of Sociology
	Men and Masculinities		European Sociological Review
	Psychology of Women Quarterly		International Political Sociology
	Sex Roles		Journal of Marriage and Family
	Social Politics: Int'l Studies in Gender, State, & Society		Social Science Research
	Women's Health Issues		
	Women's Studies International Forum		

## **Funding acknowledgement**

This work was carried out with financial support under the *Growth and Economic Opportunities for Women* (GrOW) initiative. GrOW is a multi-funder partnership with the UK Government's Department for International Development, the William and Flora Hewlett Foundation, and Canada's International Development Research Centre. The views and opinions stated in this paper are those of the authors and do not necessarily reflect the views of the GrOW program or funding partners.