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Women in Agriculture: Application of Alkire Foster Method of Counting Multidimensional Deprivation towards building a Human Recognition Index for Women in Malawi.

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Abstract:

Evidence suggests that intangible components of wellbeing like human recognition impacts development. However, human recognition has been hardly examined because of measurement difficulties. In agrarian-based Malawian economy, access to agricultural resources such as land depends heavily on gendered norms. Women's ability to overcome poverty is severely affected by societal norms in which recognition flows. Negative human recognition like violence limits women's ability to control their economic destiny. Thus, we investigate human recognition deprivation among women in Malawi. We adapted the Alkire Foster method of multidimensional poverty to measure human recognition within domains of deprivation using nationally representative datasets. We combine indicators of violence, freedom and autonomy to build a human recognition deprivation index. We found that 84.8% of women in Malawi are recognition deprived. Women working in agriculture account for 47% of the overall deprivation experienced by women in Malawi and have inadequate recognition in 31.7 % of the weighted indicators. In the northern Malawi, women exhibit disproportionally high deprivation levels relative to population size. We recommend that development measures for agrarian economies like Malawi should include the impact of how women are recognized as humans on resource access.

Acknowledegment:

JEL Codes: D91, O43

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We found that 84.8% of women in Malawi are recognition deprived. Women working in agriculture account for 47% of the overall deprivation experienced by women in Malawi and have inadequate recognition in 31.7 % of the weighted indicators. In the northern Malawi, women exhibit disproportionally high deprivation levels relative to population size. We recommend that development measures for agrarian economies like Malawi should include the impact of how women are recognized as humans on resource access.

Keywords: Women, agriculture, recognition deprivation, poverty, resource allocation, Malawi

JEL codes: D01, D10, D91, O11, O43, O55, Q01, Q10

Several studies have shown a strong link between the recognition of women in society and economic development (Kabeer 1999, 435; Doepke and Tertilt 2014, 1). Policy makers have equated women empowerment to development, in other words, an empowered woman is good for economic growth (Doepke and Tertilt 2014, 1). Although empowering women has become a central development objective, policymakers have not yet fully embraced women empowerment because it takes them out of their comfort zone of welfare and poverty into intrinsic zones of power and social injustice (Kabeer 1999, 435). Quisumbing and Pandolfelli (2010: 589) observed that achieving women empowerment through agricultural development is very important but is often limited by several factors like weakened rights. Weak rights reflect the cultural context of gender roles based on women's value and their economic contribution to the community. Patriarchal practices and gendered norms affect and define gender power within households, communities and institutions, limiting women's socio-economic opportunities and act as barriers to women willing to invest in their livelihood to improve their wellbeing.

However, the last two decades has seen research aiming at alleviating poverty[1] progress into integrating explanatory factors such as human capabilities and freedom of choice as proposed by Amartya Sen[2] to the concept of empowerment and social capital (Castleman

[1] Poverty here refers to non-monetary lack of means since this paper focuses recognition deprivation as one of the significant contributors of poverty, poverty is defined here to included lack of recognition.
[2] See Sen (1985, 1988, 1993).

2013, 2). However, related concepts such as human recognition[3] and its contribution to poverty alleviation has not yet been explicitly examined and measured (Schweiger 2015, 143; Castleman 2013, 1, 2011b, 3, 2012, 4). Castleman (2013, 1) provides a broad definition of the concept of recognition and its role in economic development and models how provision of recognition could improve recipient's wellbeing However, it is important to clarify the concept of recognition in order to offer a background for its study.

Theory of Human Recognition

The theory of recognition has roots in social, moral-philosophical and sociopolitical outlooks (Schmidt am Busch 2008, 574; Honneth 2001, 44; Laitinen and Ikäheimo 2011, 4). For Ikäheimo and Laitinen (2011, 5), the Hegelian[4] theory of recognition is the core of psychological, social and institutional structures in the society of humans. Individuals are not only able to build and maintain healthy personalities and self-awareness but are, also, able to improve the ethical qualities of social relation through including people that are different from themselves into their sphere of social and economic life as equals. Ikäheimo and Laitinen (2011, 8) understood the concept of recognition to involve identification as an entity, acknowledgement of value of said entity and further applying these sub-concepts to only persons, groups or collectives of persons in the interpersonal sense. Thus, Castlemen (2013, 1) defines human recognition as

[3] Human recognition will be used interchangeably with the term recognition throughout the rest of the paper as we have ascertained that recognition requires acknowledgement, which cannot occur if the recipient of said recognition is inhuman (Castleman 2013, 1).
[4] See Hegel (1991; 1977) for detailed insight.

> "the extent to which an individual is acknowledged by others to be of inherent value by virtue of being a fellow human being."

Within the Hegelian definition of recognition, Honneth (2001, 47) developed a "tripartite division" – love, respect and self/social-esteem – of recognition with an interpersonal viewpoint pertaining to injustice. Thus, Schweiger (2015, 144) defines love as the need to be recognized as a "vulnerable individual", respect as the right that humans owe themselves as equal moral agents, and self/social-esteem as the notion that everyone deserves to be recognized for their contribution to a shared agenda. Although Castleman (2011a, 7-10) outlines the conceptual distinction between respect[5], dignity[6], empowerment[7] and social capital[8], however, one may also argue that they are not distinct but conceptually interwoven in the sense that one cannot occur without the other. Thus, when there is rights denial and social exclusion, human beings suffer indignity and injustice that strips them of the rights and responsibilities accruing to them as members of the community (Honneth 2001, 48–49).The antidote is for individuals to provide positive recognition in which there is acceptance and social regard of individuals' abilities.

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[5] Castleman (2011a, 7) defines respect as distinctly different from human recognition and argues that respect for an individual's basic rights as human may not go hand in hand with respect for an individual's skills or productive abilities.

[6] Dignity is defined by Castleman (2011a, 7) as "a quality or feeling that an individual possesses or experiences" and argues that while positive human recognition can increase dignity, some forms of dignity do not involve recognition at all.

[7] Kabeer (1999, 437, 2001, 19) defines empowerment as "[…] the expansion of people's ability to make strategic life choices, particularly in contexts where this ability had been denied to them […]".

[8] A key definition of social capital by Castleman (2011a, 9) is "an instantiated set of informal values or norms shared among members of a group that permits them to cooperate with one another".

Individual recognized this way takes on positive orientation because of assurance and appreciation for their attributes or achievements (Honneth 2001, 50). Honnenth (2001, 50) defines this feeling as self/social-esteem and argues that without an assumed measure of self-confidence/social-esteem, a protected autonomy and a belief in one's abilities, it will be impossible to achieve an effective process of self-actualization. Thus, self-actualization requires the freedom to choose and to pursue one's aim in life in a context not only free of external obstacles but also free of internal pressure or psychological hindrances (Honnenth 2001, 51). Such positive self-confidence that results in self-actualization, can only be achieved through the process of recognition because an individual's concept of self-actualization depends on the preconditions acquired only through cooperation and interactions with other fellow human beings.

Given that recognition is undeniably centered on people and shapes the basis of our societies, it is imperative to measure its presence and ascertain the impact of such a fundamental core of social relations on the wellbeing of societal members. Because poverty[9] especially in agrarian sub-Saharan Africa, is entrenched within social struggles and connected to many socio-economic indicators including gender (Schweiger 2015, 145), measurements of poverty and economic development should not only be

[9] Absolute income poverty is when an individual's economic falls below some minimally acceptance level. The World Bank's poverty line of 1.25 USD per person/day is given here as threshold to meet basic needs such as food and shelter. The concept of absolute poverty is not concerned with broader quality of life issues. The concept of social exclusion emerged largely in reaction to this type of narrow definition of poverty. Today it is widely held that one cannot consider only the economic part of poverty, specifically, the capability (or empowerment) perspective suggests that poverty signifies a lack of some basic capability to function (UNESCO 2017) This criticism is addressed in this contribution.

concentrated on tangible indicators but be expanded to intangible indicators like recognition.

Poverty and Human Recognition

Generally, poverty is embedded in modern societies by virtue of its connection to the social system and systemic disregard for certain groups of persons in the population (Schweiger 2015, 146). According Sen' capability approach (1985, 2005), effect of absolute poverty such as lack of access to food, shelter/clothing and education is important because of its link to self-esteem, key facet of recognition. This connection to self/social-esteem[10] makes poverty a direct attack on ones' freedom and capabilities. If poverty is an attack on one's recognition by limiting one's freedom, it is then also an impediment to one's empowerment. For Kabeer (1999, 437) disempowerment is denial of choice and is directly associated with poverty because it often hinder one's ability to make meaningful life decisions. Schweiger (2015, 147) argues that poverty can then be regarded as a form of recognition deprivation in which experiences of social relations – love, rights, self/social esteem – are impossible to achieve or completely reshaped.

Schmidt am Busch (2008, 574) observe that historically, the core institution of society views the distribution of self/social esteem on the principle of achievements; a function of individuals' application of capabilities and talents. Individuals respect and recognize one another because they share the same autonomy and the institutionalization of legal

[10] Honnenth (2001, 50) argues that without self/social-esteem, it will be impossible to achieve an effective process of self-actualization and freedom to choose and pursue one's aim in life.

equality; measuring each other on the basis of achievements that are of value to the society (Schmidt am Busch 2008, 574 - 575). Thus, experiencing misrecognition of any kind violates the core conditions of societal inclusion – a state of being that enables people to walk as equals among their peers – and as such, contributes to poverty (Schweiger 2015, 147). Arguably, if the distribution of self/social-esteem is linked to the principle of one's achievements, capabilities and talents, then human recognition must be interwoven within the domains of empowerment internally, through one's agency[11] and achievements, and externally, through influence on choice.

Naturally, such intangible components are very challenging to measure (Castleman 2011b, 3; Kabeer 1999, 436), however it is crucial if poverty is to be understood in a multidimensional sense. We expands on human recognition and link it to violence indicators for women. We then, outlines an alternative measurement using the Alkire Foster method of multidimensional counting, present our data and empirical results. Finally, we discuss and concludes on the topic.

Human Recognition as Multidimensional Concept

Human recognition should be analyzed within the domains of interpersonal space (Laitinen and Ikäheimo 2011, 8–9). Castleman (2011b, 6, 2013, 6–7) outlines the various sources of human recognition and highlights three primary domains of human recognition interactions as (a) Interactions/relationships between individuals and/or household members, (b) Community norms/relationships among individuals in the community, and (c) Institutional

[11] Kabeer, (2001, 22) defines agency as "[…] the ability to define one's goals and act upon them […]".

norms/interactions (see also Table 1). These domains provide platforms for human recognition transactions. It is important to note that human recognition in the institutional domain has also been highlighted by Ikäheimo and Laitinen, (2011, 10) as institutional recognition. They argue institutional recognition[12] is non-interpersonal in nature and thus, does not fit well with Honneth's division of recognition. However, human society is made up by social domains encompassing the private and public life as well as relationship-flows within these spheres. Thus, exclusion of institutional recognition will result in an incomplete representation of the multidimensional nature of recognition. Laitinen and Ikäheimo (2011, 10) and Castleman (2013, 7) argue that a full picture of the effects of human recognition takes into consideration the needs of the social world in a way that matches the multidimensionality of poverty to domains of human recognition in individual, household and institution.

Role of Gender-Violence in Depicting Human Recognition

Castleman (2013, 3) observed that several studies have identified links between economic behavior and receipt of regards from others with the result that positive (negative) acknowledgement has significant impact on the socio-economic position of the poor and marginalized. For instance, violence against women present great manifestation of unequal power relations which hinder women from achieving choice equality or full enjoyment of rights within the society (Bisika 2008, 1885). Heise et al. (1994, 1165) outline violence against women to include a host of harmful behaviors such as wife abuse, sexual assault,

[12] According to Ikäheimo and Laitinen (2011: 10), institutional recognition focuses on persons as bearers of institutional powers e.g. Police or government.

dowry-related murder, marital rape, selective malnourishment of female children, forced prostitution, female genital mutilation and sexual abuse of female children. Particularly, "[…] violence against women includes any act of verbal or physical force, coercion or life-threatening deprivation, directed at an individual woman or girl that causes physical or psychological harm, humiliation or arbitrary deprivation of liberty that perpetuates female subordination […]" (Heise et al. 1994, 1165–66). Gender-based violence has been recognized as an important human-right violation by international organizations (Fidan and Bui 2016, 1075–76) because of its negative effect on women's economic status. For instance, Bisika (2008, 1884) observed that in Malawi, women bear the brunt of gender violence such as abuse, assault and economic negligence because of social and cultural beliefs. Unlike outlined by Heise et al. (1994, 1165), these recognition manifestations whether positive or negative, relates to women as a group within the society, therefore, our definition of violence against women and its role in depicting recognition compasses structural and institutional forms of discrimination which women experience as class.

One can relate human recognition to the concept of power. Kabeer (1999, 436) links empowerment and thus recognition to power by defining power as "the ability to make choices". Kabeer (1999, 440) points out that the using of achievements to measure empowerment draws attention to the role of choice in the exercise of power. In other words, violence against women disempowers women, stripping women of choices. Since the concept of choice is an external manifestation of empowerment through an internal reception of recognition, love, respect and self/social-esteem, it is then, necessary to

examine the role of gender violence on human recognition level within the pathway of women empowerment.

Methodology

Challenges have been encountered in measuring intangible components such as human recognition (Castleman 2011b, 8). One way of addressing human recognition measurement challenges lies in using indicators that capture specific recognition transactions[13] as well as identifying subjective or objective indicators of recognition transactions.

Several studies examined efforts to develop valid and standard measures of intangible concepts of development such as empowerment and wellbeing (Trommlerová et al. 2015, 1–15; Malhotra and Schuler 2005, 71–88; Mason 2005, 96–102; Pillarisetti and McGillivray 1998, 197–203; Diener and Biswas-Diener 2005, 125–40), social capital (Knack and Keefer 1997, 1251-1228) and human recognition (Castleman 2011a, 1–78, 2011b, 18–30, 2012, 1–68, 2013, 2–44). We argue that to objectively measure recognition across domains, a framework of context-specific indicators is required. "Who is identified as recognition deprived" and "how many domains one needs to be deprived in to be considered poor", requires a method for isolating identification indicators and combining these indicators into a composite index. For instance, Castleman (2012, 1–68) assessed the role of human recognition among malnourished HIV-infected adults in Kenya using food supplementation and medical treatment as a recognition-improvement intervention, found that six months of food supplementation had a significant effect on human recognition.

[13] Castleman (2011b, 9) recommends using indicators that capture specific incidence such as humiliation and violence (objective indicators) or using self-reported recognition levels (subjective indicators).

Castleman (2011b, 1–81) also assessed the effect of human recognition on nutritional wellbeing of women in India. His results showed that human recognition had a significant positive and independent effect on the nutritional status of women. In both studies, Castleman (2012, 18–30) applied exploratory factor analysis across the three domains of recognition to build a composite index that measured the aggregate level of human recognition. Weighted sums of recognition levels received in each domain were added to create a final measure of recognition. It is important to note that factor analysis works on the assumption that measurable and observable indicators can be reduced to latent indicators that share a common variance that are unobservable, i.e., cannot be directly measured (Yong and Pearce 2013, 80). However, certain limitations exist when using factor analysis. For instance, Yong and Pearce (2013, 81) observed that factor naming could be problematic and several variables may exhibit "split loadings"[14]. In addition, they also noted that using pooled samples with different time points may make factor scores unreliable and replication difficult. To combat these challenges and develop an index that measures human recognition subjectively within the relevant domains as well as on an aggregate level, we used Sabina Alkire and James Foster (2009) methodology of multidimensional poverty.

[14] Split loading is also known as cross loading occurs when variables load onto more than one factor as a result of multicollinearity among factors.

Counting Multidimensional Deprivations

According to Alkire et al. (2013, 71) poverty indices should identify the people living in poverty as well as measure their extent of their poverty. For instance, a person may have sufficient income but may not be well off in some non-monetary domains of life and such that it may be relevant to develop policies to tackle such deprivations. Therefore, it is relevant to construct a multidimensional index that can capture these poverty variations.

The Sabina Alkire and James Foster (2009) methodology of multidimensional poverty – from hereon called Alkire and Foster method – presented a novel means of identifying deprivation in several domains when other measurement methods cannot be used effectively. Using the counting-based methodology, researchers can identify deprivations and propose an adjusted measure to reflect the intensity and severity of said deprivation (Alkire and Foster 2009, 9). The method uses a two-prong approach in establishing thresholds: one that is specific to domains and one that measures the number of domains in which an individual has to be deprived in to be considered poor. The Alkire and Foster method has very useful properties such as decomposability across age groups, ethnicity and locality and it is based on Sen's (1993, 62–66) capability approach and Atkinson's (2003, 51–65) counting method for measuring deprivations.

The Alkire and Foster method used to derive multidimensional deprivation[15]index, MDI is made up of two components, the headcount ratio, H, and the intensity of an individual's deprivation intensity measure, A, as shown below

$$MDI = H \times A \tag{1}$$

Where $H(y;z) = \frac{q}{n}$ (2)

Which is the total number of deprived individuals, q, divided by the total population, n.

The total number of individuals identified as deprived, q, is given by:

$$q = q(y;z) = \sum_{i=1}^{n} \rho_k(y_i, z) \tag{3}$$

q is identified by using the dual cutoff approach (Alkire and Foster 2009, 11) with the identification function, ρ_k, that maps individual i achievement vector, $\rho_k(y_i;z)$, such that $\rho_k(y_i;z) = 0$ if individual i is not deprived and $\rho_k(y_i;z) = 1$ if individual i is deprived. The row vector, y_i is derived from the matrix of achievements nxd of an individual $i = 1, 2, 3 \cdots, n$ in domain $j = 1, 2, 3, \cdots, d$ shown as

[15] Sen (2001, 20) defines poverty as capability deprivation. Thus, human recognition can be considered in the scope of Sen (Sen 2001, 20) to embody this also in the sense of empowerment such that an individual with a low human recognition level can be referred to as recognition deprived or recognition poor.

$$y = \begin{bmatrix} y_{ij} & \cdots & y_{nj} \\ \vdots & \ddots & \vdots \\ y_{id} & \cdots & y_{nd} \end{bmatrix} \geq 0 . \tag{4}$$

The column vector y_{*j} gives the distribution of the j domain achievements across individuals, assuming a fixed domain, d. The first threshold is the deprivation threshold in each domain, $j = 1, 2, 3, \cdots, d$, is given as $z_j > 0$ where z_j is the threshold below which an individual is classified as deprived in domain j and z is a row of vectors representing domain-specific threshold.

The second threshold is represented as the intermediate cutoff, k, which counts the number deprivations required for an individual to be considered multidimensionally deprived. When $k = 1$, the identification function, ρ_k, is equal to the union approach where deprivation is only in one domain. When $k = d$, the intersection approach is identified by ρ_k where individuals deprived in all domains are considered. The deprivation count, c_i, of individual, i, is defined as dichotomous variable that takes the values of 1 when the deprivation count c_i is greater than or equal to the intermediate cutoff, k, and $\rho_k(y_i; z) = 0$ when the deprivation count c_i is less than the intermediate cutoff, k. That is:

$$\rho_k(y_i; z) = 1 \text{ when } c_i \geq k \text{ and } \rho_k(y_i; z) = 0 \text{ when } c_i < k \tag{5}$$

Alkire and Foster (2009, 10) refer to the identification function, ρ_k, as the "dual cutoff method of identification" because it is dependent on domain-specific threshold, z_j and across domain cutoff specification, k. It is important to note that the headcount ratio, H,

is a crude index of measurement because it defies "dimensional monotonicity[16]" (Alkire and Foster 2009,10). Thus, an additional partial index adjusts the headcount ration, H, with the intensity of deprivation, A as follows:

$$A = \frac{|c(k)|}{qd} \tag{6}$$

$|c(k)|$ denotes the sum of all the elements in the vector or matrix censored count of deprivation, $c(k)$, $c(k)$ represents the number of possible deprivation accruing to an individual and qd measures the fraction of domains, d, in which an average deprived individual endures deprivation. (Alkire and Foster 2009, 12).

Identification and Measurement

Assuming that an identification function, ρ_k, has been selected, the ability to determine who is multidimensionally deprived is to ascertain first, the percentage of the sample population that is deprived. Using the headcount ratio, H, one can define the percentage of the sample population that is deprived. However, this is a crude index of measurement. Adjusting the headcount ratio, H, with the intensity of deprivation, A, the adjusted multidimensional Deprivation Index (MDI) for human recognition deprivation can be given as

[16] Dimensional monotonicity occurs when an individual's overall deprivation level changes in response to changing levels of deprivation within domains.

$$MDI = H \times A = \left(\frac{q}{n}\right) \times A \equiv \left(\frac{\sum_{i=1}^{n} \rho_k(y_i, z)}{n}\right) \times \left(\frac{|c(k)|}{qd}\right) \tag{7}$$

Where MDI is defined as total share of deprivations experienced by the population divided by the maximum number of deprivations that could be experienced by all individuals (Alkire and Foster 2009, 12). The MDI is a member of class $M_\alpha(y, z)$ of multidimensional poverty measures associated with the Foster, Greer, and Thorbecke (FGT)[17] and is sensitive to the frequency and intensity of deprivations. It also satisfies various properties[18] including weak dimensional monotonicity and decomposability across subgroups (Alkire and Foster 2009, 17–24).

Defining the deprivation measure based on deprivation counts and averages implicitly assigns an equal weighting, $w_j = 1$ to each domain, j. Alkire and Foster (2009, 15) argue that this is ideal if all domains have equal impact. In addition, using general weights for the domains should also be open to debate and scrutiny. However, other weighing methods exist where domain weights could be nested[19] but are beyond the scope of this paper.

This paper applies the Alkire and Foster (2009) method to combine multiple indicators of recognition-incidence of humiliation and violence-to generate a composite index that can

[17] See Foster, Greer, and Thorbecke (1984) for more details.
[18] For more on the derivations of the adjusted headcount ratio and properties, see Alkire and Foster (2009).
[19] See Alkire and Foster (2009, 15–17) for detailed breakdown on the derivation of the nested weighting structure.

be applied across population sizes and domains. Thus, important concepts to be noted are as follows:

Being embedded in the capability approach of Sen, human recognition is the concept measured with regard to the role it plays in influencing poverty for women in Malawi.

We apply a set of indicators, which are not specific to human recognition, however, the justification for their use have been extensively presented in the previous sections.

The first outcomes examined are the adjusted Multidimensional Deprivation Index (MDI), the partial index measuring the intensity of deprivation, A, as well as the human recognition deprivation headcount ratio, H. The second outcomes examined is the prevalence of human recognition deprivation among women in the three regions of Malawi and women working in Agriculture.

Empirical Specification for Multidimensional Human Recognition Deprivation

Equation (7) can be written as a composite index of aggregate human recognition, $\bar{r}_i$ at the beginning of an analysis period as follows

$$\bar{r}_i \equiv MDI = H \times A = \left(\frac{q}{n}\right) \times A \equiv \left(\frac{\sum_{i=1}^{n} w_i \rho_k(y_i, z)}{n}\right) \times \left(\frac{w_i |c(k)|}{qd}\right) \qquad (8)$$

Where $\sum_{i=1}^{n} w_i \rho_k(y_i, z)$ is the weighted sum of individuals identified as recognition deprived using the dual cutoff approach and $w_i |c(k)|$ denotes the weighted number of possible human recognition deprivation accruing to individual i.

Data

The first application for measurement and outcomes outlined above is illustrated using pooled cross-sectional data from the Malawi Demographic and Household Surveys (MDHS) for 2004, 2010 and 2015. Malawi is a landlocked country in sub-Saharan Africa with agriculture as the backbone of its economy. In 2006, agriculture contributed about 80% to export earnings and employed 85% of its workforce (World Bank, 2016a). High rates of poverty are prevalent in the country with a poverty headcount ratio (% of population) of over 50% and more than 70% of the population living below $1.90 a day (World Bank, 2016a). Women make up about 52% of the total population and about 70% is employed in agriculture (World Bank, 2016a, 2016b).

The 2004, 2010, 2015 MDHS used surveyed 11,698 women, 24,000 women and 24,562 women age 15- 49 respectively. The MDHS randomly selected a sub-sample of women to answer the domestic violence module. Since almost all the key indicative variables of human recognition were selected from the domestic violence module, only the women who answered the domestic violence module were included in the analysis. A total of 19284 respondents were used in the final analysis.

Choice of Domains, Indicators, Weights and Cutoff

Our initial steps towards building the recognition index was arranging into a simple framework, the domains in which recognition transactions occur. Such a structure helps to put into perspective, the various indicative variables from which recognition can be attributed to in the individual, household and community/institution domain.

Table 1 below illustrates the relationship between human recognition domains and the measurable indicators within the domains.

Unlike Castleman (2012, 19) who used self-reported levels of recognition, the indicators of recognition outlined below are objective measures that show the occurrence of specific actions/perceptions in human recognition transactions.

As outlined by Castleman (2012, 35-36), the rationale for using these variables is self-explanatory. Humiliation and emotional violence are the variables closest to measuring recognition transactions because humiliation involves the degrading and devaluing a person as a human being. Physical forms of violence and sexual violence are examples of high manifestation of negative human recognition due to the fact that the perpetrator of said violence usually does not view victims as human but as objects or property which must be treated as such. Women's justification of violence towards themselves and women's right to freedom and self-determination are also included in the calculation of the index. The latter is very important because it clearly signifies human recognition in the household: which is to what extent are women's autonomy, basic rights and decision making ability valued within a social structure (Castleman 2012, 36).

Table 1: Domains of human recognition and indicative variables

Domain	Source of human recognition	Indicative variables
Individual	Degree of autonomy in decisions pertaining exclusively to one's self	• Person who usually decides on respondent's health care. • Person who usually decides on visits to respondent's family or relatives.
Individual/ Household	Mental perception of violence received/anticipated from another individual within the household	• Beating justified if wife goes out without telling husband • Beating justified if wife neglects children • Beating justified if wife goes argues with husband • Beating justified if wife refuses to have sex with husband • Beating justified if wife burns food
	Interaction with individuals within the household in terms of freedom and self-determination	• Husband/partner jealous if respondent talks with other men • Husband/partner accuses respondent of unfaithfulness • Husband/partner doesn't permit respondent to meet with female friends • Husband/partner tries to limit respondent's contact with family • Husband/partner insists on knowing where respondent is
Household	Emotional Violence	• Respondent has been humiliated, threatened with harm, insulted or made to feel bad by husband or partner.
	Less severe violence	• Respondent has been pushed, shook, had something thrown at, slapped, punched with a fist or hit by something harmful, had arm twisted or hair pulled by husband/spouse.
	More severe violence	• Respondent has been kicked or dragged, strangled or burnt, threatened with knife/gun or other weapon by husband/spouse.
	Sexual violence	• Respondent has been physically forced into an unwanted sexual act, forced into other unwanted sexual act by husband/spouse. • Respondent has been physically forced to perform sexual acts respondent didn't want to.
	Physical injury	• Respondent has had bruises, eye injuries, sprains, dislocations or burns because of husband/partner actions • Respondent was hurt husband/partner during a pregnancy.
Community/ Institution	Interactions with individuals outside of the household	• Someone other than husband/spouse physically hurt respondent. • Someone other than husband/spouse hurt respondent during pregnancy.

Note: The domain individual/household was created to show how indicators of human recognition can overlap across domains.

Results

Using the indicators above (Table 1), a multidimensional recognition deprivation index for Malawi was estimated. The indicator variables were all ordinal (binary) and the domain cutoff were as follows:

Individual domain: (1) If the woman has degree of autonomy in decisions pertaining exclusively to herself.

Individual/household domain: (2) The woman's justification of received/expected violence from individuals within the household and the woman's interaction with individuals in the household in terms of freedom.

Household domain: (3) If the woman has experienced physical, mental, emotional or sexual manifestation of violence within the household.

Community/institutional domain: (4) If the woman has experienced physical, mental, emotional or sexual manifestation of violence with in her community.

In setting the cross-domain cutoff, k, Alkire and Foster (2009, 27) argue that a cutoff choice could be a normative one. Thus, the identification function, ρ_k, which is derived from the across-domain thresholds, k, depends on attributes that are included in the domain and how important these attributes are to living a meaningful life. For deprivation in domains that can results in gross human rights violation, one could allow across dimension cutoff, k, to be set the minimum level to show that all human rights are essential and have equal status. Similarly, the indicators outlined for human recognition

measurement show that absence of violence is crucial for women to live a meaningful life towards self-realization and autonomy (CEDAW 1981). Therefore, across-domain thresholds, k was set to 1 (20%) in line with Alkire et al. (2013, 76-78).

Table 2 below presents the human recognition deprivation headcount ratio, H, from hereon called the headcount ratio, the deprivation Index, MDI, and the deprivation intensity partial index, A with equal weighing[20]. The domain cutoff identifies women whose deprivation score is equal to or higher than 20%. That is women with recognition deprivation that is higher than the threshold cut-off (higher negative recognition) are assigned a value of one (1) while women below the threshold are censored (a value of 0).

Table 2: Recognition deprivation headcount ratio (*H*), MDI and the deprivation intensity (A)

	k=1
H	**0.848***** (327.48) {0.0025883}
A	**0.315** {0.001}
MDI	**0.267***** (245.93) {0.0010861}
Observations	19,284

Notes: t statistics in parentheses ()
standard error in parentheses {}
* p < 0.05, ** p < 0.01, *** p < 0.001

The headcount ratio, H , shows that about 84.8% women in Malawi are deprived. That is 84.8% of women in Malawi have experienced violence in their household or community,

[20] The domains are weighted equally because we argue that each domain presents a special attribute required by women to live a fulfilled and meaningful life.

have had decision-making autonomy taken away from them or strongly believe they deserve violence. Note that the value of MDI deviates from the headcount ratio, H, according to deprivation intensity, A. In this case, $A = 0.315$ showing that 84% of women who are deprived have, on average, inadequate recognition in 31.5 % of the weighted indicators. Finally, the MDI presents the proportion of weighted deprivations that women experience in Malawi at 26.7%.

Further decomposing the index by indicators, Table 3 below presents in column 4, the percentage contribution of each indicator and each domain to MDI. Column 3 shows the percentage of the sample population that is deprived in each indicator while columns 1 and 2 shows the indicator type and weight. Column 3 shows that the individual domain for decision-making and autonomy contributes significantly to human recognition deprivation.

Particularly, 80% of the women in Malawi are deprived in their ability to make the final decision on their healthcare. 78% are deprived in the ability to make the final decisions to visit their family or relatives. Comparing domain 2 and domain 4, an interesting trend appears. Women's mental perception on justification of violence (domain 2) contributes less to the final deprivation index when compared to physical manifestation (domain 4). The relationship evidently shows the high impact of recognition provision by providers such as spouses/partners. Although women do not justify beating or violence, they still cope with a considerable amount of violence, humiliation and negative recognition within their social sphere.

Table 2: Summary of human recognition deprivation indicators

Indicator	Weight	Deprived in %	Contribution to MDI in % $k = 1$
Domain 1			***56.5***
Respondent: person who usually decides on respondent's health care.	.1	80.523	28.5
Respondent alone: person who usually decides on visits to respondent's family or relatives.	.1	78.531	28.0
Domain 2			***6.8***
Beating justified if wife goes out without telling husband	.04	9.625	1.4
Beating justified if wife neglects children	.04	11.554	1.6
Beating justified if wife goes argues with husband	.04	8.525	1.2
Beating justified if wife refuses to have sex with husband	.04	10.532	1.5
Beating justified if wife burns food	.04	7.732	1.1
Domain 3			***22.3***
Husband/partner jealous if respondent talks with other men	.04	50.462	6.7
Husband/partner accuses respondent of unfaithfulness	.04	21.780	3.1
Husband/partner doesn't permit respondent to meet with female friends	.04	17.517	2.5
Husband/partner tries to limit respondent's contact with family	.04	17.056	2.4
Husband/partner insists on knowing where respondent is	.04	58.473	7.7
Domain 4			***8.9***
Emotional Violence	.03	20.364	2.4
Less severe Violence	.03	20.991	2.4
Severe violence	.03	6.741	0.8
Sexual violence	.03	15.630	1.1
Physical injury	.03	8.945	0.3
Physical injury during pregnancy by spouse	.03	2.536	1.9
Domain 5			***5.5***
Someone other than husband/spouse physically hurt respondent.	.1	9.988 %	3.6
Someone other than husband/spouse hurt respondent during pregnancy.	.1	5.170 %	1.9

Note: All variables are binary.

Finally, domain 3 reflects the value placed on women's freedom and contributes about 22% of the deprivation index of the women. Restrictions on freedom and lack of trust are disproportionally high within the domain compared to other indicators.

Decomposition by Region and Occupation

Once the deprived have been identified, one of the key properties of the MDI, according to Alkire et al. (2013, 77) is results, can be decomposed to reveal contributions of subgroups[21]. The rationale for decomposability is that the contribution from a subgroup may exceed its population share and thus bears a disproportionate share of deprivation (Alkire et al. 2013, 78). Table 4 below decomposes the MDI by the three regions in Malawi. Columns 1 and 2 present the headcount ratio, H and the MDI for women in the northern, central and southern region of Malawi. The deprivation headcount ratio, H shows that deprived women are about 82.4%, 87.2% and 83.7% for northern, central and southern region respectively.

Table 4: MDI decomposition by region

	MDI decomposed by region		
	Northern region	Central region	Southern region
$k = 1$			
H	0.824	0.872	0.837
MDI	**0.274**	**0.282**	**0.255**
Population share	0.144	0.351	0.505

Notes: n = 19,284; Indices by subgroup (absolute).
The absolute value of the indices is given within a range value of 0 and 1

[21] For a detailed breakdown on the notations used for decomposing the index by sub-groups, see Alkire and Foster (2009) as well as Alkire et al. (2013).

Relative to population size, northern region of Malawi shows a disproportionately high deprivation headcount ratio when compared to other regions. Analyzing the deprivation intensity, A, across the three regions show women who are deprived have, on average, recognition-deprivation in 33.3 %, 32.3% and 30.5% of the weighted indicators for the northern, central and southern regions respectively. Deprivation intensity is higher for women in the northern region of Malawi than for the central and southern regions. Table 5 below shows the contribution of the subgroup 'Region' to MDI. Although the northern region has relatively high deprivation (see Table 4), it only contributes about 14% to the overall deprivation headcount ratio, H and the MDI in the analysis[22].

Table 5: Decomposed regional contribution to the overall MDI

	Proportion contribution of every region to MDI		
	Northern region	Central region	Southern region
$k=1$			
H	14.0%	36.1%	49.9%
MDI	**14.8%**	**37.0%**	**48.2%**

Notes: n = 19,284; Contribution of subgroups to indices (%).

Evidently, the sub-group with the highest population share contributes the most to the MDI, it is the southern region at 48.2%. We continue to decompose the index by women working in agriculture. Tables 6 and 7 below show that at the deprivation headcount ratio, H, for women who work in agriculture is 85.7 % although women who work in agriculture represent only 46.2% of the sample population. Notice once more that the MDI deviates from the headcount ratio, H, by deprivation intensity, $A = \frac{MDI}{H} = \frac{0.272}{0.857}$. For

[22] See table 2 for the overall MDI and the deprivation headcount ratio, H, for women in Malawi.

women working in agriculture, the deprivation intensity, A, is 0.317 meaning, 85.7% of women who are deprived, work in agriculture and have, on average, recognition-deprivation in 31.7 % of the weighted indicators.

Table 6: MDI decomposition by subgroup 'Agriculture'

	MDI decomposed by women occupation	
	Non-agriculture	Agriculture
$k=1$		
H	0.839	0.857
MDI	**0.263**	**0.272**
Population share	0.538	0.462

Notes: n = 19,284; Indices by subgroup (absolute).
The absolute value of the indices is given within a range value of 0 and 1

Finally, results presented from table 7 below shows that women who work in agriculture in Malawi contribute 47% to the overall MDI, when compared to those who do not work in agriculture. Figure 1 shows that negative recognition in form of violence (domain 2) contributes more to the recognition deprivation experienced by women working in agriculture compared to those not working in agriculture.

Table 7: Proportion contribution of women in agriculture and non-agriculture to overall MDI and headcount ratio H

	Non-agriculture	Agriculture
$k=1$		
H	53.3%	46.7%
MDI	**52.9%**	**47.1%**

Notes: n=19,284; Contribution of subgroups to indices (%).

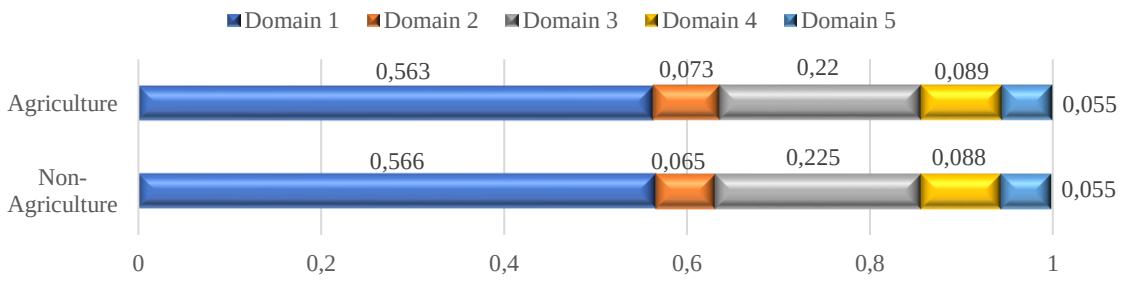

Figure 1. Proportion contribution of each domain to the MDI for women working in Agriculture

Overall, about 84% of women identified as deprived in Malawi have, on average, inadequate recognition in 31.5 % of the weighted indicators. Women working in agriculture contribute about 47% to the overall MDI.

Discussion

Firstly, we examined the concept of human recognition within the social, moral-philosophical and sociopolitical perspective of Hegel, focusing on the interpersonal sphere in which recognition transactions occur. This was linked to poverty within the framework of Sen's capability approach to highlight how recognition as a form of deprivation can be an attack on one's freedom. Finally, we used the Alkire and Foster method to develop an aggregate measure of human recognition using indicators of violence against women, women's perception on violence, autonomy and women's freedom within their households and communities. We leveraged perspectives on violence to facilitate discussions that allows recognition for women within social structures that foster misrecognition to be explored.

First, human recognition is linked to empowerment by its ability to foster self-actualization through power and choice; and poverty by components such as self/social-esteem. The

presence of violence in any form, hinders women in their ability to reach self-actualization and improve welfare. Indeed, social and cultural beliefs are anchored by patriarchal structures within the society. These institutionalize the role of women as subordinates or objects, depriving women the full enjoyment of rights. This is in line with Hunnicutt (2009, 553–55) whom argues, taking a feminist theory perspective, that violence against women is a result of social structural conditions, ideologies and power dynamics within patriarchal systems in the domains where individuals interact.

Human recognition in our study was captured by applying a unique method for measuring intangible components for development. The applicability of the Alkire and Foster (2009) method from traditional poverty measurement to the sphere of interpersonal space and relationships created a novel approach in which abstract concepts of development can be concretized and measured. Selection of the indicators, weighing and domain cutoffs present a picture that not only encloses the concept of recognition and empowerment within sociocultural, political and economic context of development but argues for consistency across the framework of universal human rights – rights to achievements and the right to be recognized as human. Furthermore, the multidimensionality of the recognition deprivation index also supports the argument of Maholtra et al. (2005, 73–77), namely that the problem of gender inequality spreads and varies across social, economic, political, and psychological domains.

The empirical application of the Alkire and Foster method using the Malawi 2004, 2010 and 2015 DHS data revealed recognition deprivation levels of women in Malawi in the domains of interaction as specified by Castleman (2013). Results on the contribution of

individual indicators to recognition deprivation shows that majority of the women in Malawi are unable to make the final decision on issues regarding their personal autonomy as described within the Hegelian theory of recognition (Honneth 2001, 51), thus making it impossible to achieve an effective process of self-actualization. This is supported by Hayes and van Baak (2016, 1365) as well as Fidan and Bui (2016, 1077–78). They theorized that in households with unequal power relations, violence may be used by the spouse/partner to maintain this structure of inequality if the spouse/partner dominates the decision making process. Also in line with the study conducted Murshid and Critelli (2017, 1) on the causes of emotional, intimate partner violence and spouse violent behaviors toward wives in Pakistan, adherence to patriarchal norms and economic power in decision-making were among significant determinants violence against women.

Women's justification of violence versus their actual receipt of violence within the household highlighted the bidirectional relationship of recognition as outlined by Castleman (2013). Contrary to the study of Doku and Asante (2015, 2–5) that show a higher number of women justifies violence against themselves or others in Ghana, our study shows that the percentage contribution of women's justification of violence to their recognition deprivation was less. Furthermore, domains of freedom and manifestation of violence and humiliation against women in interactions that happen in the social sphere, contributed more to the recognition deprivation index in Malawi. Given the patrilineal and matrilineal traditional system exist in the Malawian societal structure, families where women dominate in decision-making could be at risk of experiencing higher violence but may have lower justification of violence towards themselves or other women in general.

This is in line with Choi and Ting (2008, 849) whom found that risk for violence increases in female-dominated families because of women not adhering to the gender norm of male dominance and female subordination.

Our study further aimed to put the depth of deprivation for women across Malawi into perspective. Decomposing the deprivation index by the three regions within Malawi showed that manifestation of recognition deprivations varied across the regions. 82.4%, 87.2% and 83.7% of the women in Malawi were found to be deprived for northern, central and southern region.

Interestingly, the deprivation intensity shows a higher proportion of women from the northern region of Malawi are intensely recognition-deprived. Relative to population share of the region, the northern region has the highest share of deprived women in the sample. One explanation could be attributed to the patrilineal structure of the north as opposed to matrilineal structure mostly found in the central and some parts of the south (Conroy 2014, 869). Within ideology of matriliny, spouse/partners move to their wives' village after marriage and inheritance is passed through the maternal line, advantageously improving the level of recognition place on women in these regions. Further historical literature show that within the dominant ethnic group of the central region, considerable weight is given to the rights of the woman in terms of wealth flow, resources access like land and decision-making (Phiri 1983, 257–74; Mtika and Doctor 2002, 71–97). Disaggregating the deprivation index by women who work in agriculture, our study found that women who work in agriculture contribute about 47% to the overall MDI. 85.7% of deprived women, work in agriculture and have inadequate recognition in 31.7 % of the weighted indicators.

Deprivation intensity is higher for women working in agriculture compare to those in non-agricultural sectors.

A limitation of our study its use of cross-sectional data with indicators that are reported by respondent especially when such sensitive information such as violence. For instance, Kabeer (1999: 440) points out the role of choice in the exercise of power and argues that gender inequality such as recognition deprivation has adverse effect on wellbeing when women chose for themselves to internalize the role of lesser members of the society. Women's may adhere to oppressive social norms, reinforcing their own status as lesser beings by accepting or even justifying violence against themselves or other women (Uthman et al. 2009:1), thus, affecting the objectivity of the indicators used.

Conclusion

Our study examines human recognition as an intangible concept of development. Extending the methodology adopted from Alkire and Foster (2009), we calculated a multidimensional human recognition index using MDHS from 2004, 2010 and 2015. Indicator variables from the Malawi DHS domestic violence module such as incidences of violence, decision-making, freedom, capabilities and women perception of violence were used to show presence/absence of negative/positive human recognition.

We found that about 84.4% of women in Malawi are recognition deprived and have inadequate recognition in 31.5 % of the weighted indicators. This varies by regions, occupation (working inside/outside agriculture) and indicators. Manifestation of violence against women and restriction on freedom contributes proportionally higher to the overall MDI than women justification of violence. Women in agriculture contribute a significant percentage to the overall MDI and experience average inadequate recognition in 31.7% of the weighted indicators. Given that human recognition extends within and across domains, these results have interesting implications for future research in modelling human recognition on poverty. The probability of recognition deprivation for women in Malawi can be analyzed against socio-demographic and economic indicators. Aggregate effects of deprivation could be investigated against regional-level household expenditure and per capita spending to further understand effects on wellbeing of poor women farmers. Increasing recognition levels may have the potential of improving the value placed on women in the society particularly in Malawi with welfare effects that improves poverty and resource access.

Finally, our study aims to contribute on the limited literature that investigates the measurement of intangible components of development for future policies.

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