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Faculty of Tropical AgriSciences

Measuring of Women's Empowerment in Rural Development

BACHELOR'S THESIS

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Declaration

I hereby declare that I have done this thesis entitled Measuring of Women's Empowerment in Rural Development independently, all texts in this thesis are original, and all the sources have been quoted and acknowledged by means of complete references and according to Citation rules of the FTA.

In Prague 16.04.2021

Karolína Kučerová

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Abstract

In the last seven decades, Women's empowerment (WE) has become a focal point for the international development community. In the developing countries prevails an unacceptable environment, where women are treated with different social, political, economic, and physical conditions in comparison with men. Especially in the rural areas, women are affected by various circumstances, which do not allow them to have the same access to education, community involvement, work, resources and bargaining power. This bachelor thesis provides a comprehensive review of currently applied methodologies, methodological tools and their respective indicators measuring WE in the context of rural development. The literature selection procedure covering scientific and grey literature in the period of 2011 – 2021 ended with 61 literature sources to analyse the methodological approach to WE measurement. The thesis is written in the form of a literature review applying a multidimensional approach and investigating four critical dimensions of WE: economic, agricultural, social and political.

All of the methods of WE emphasise agency, decision-making, and control over resources, and they all point out the significance of social and cultural norms. The level of maturity of WE is different per country or region. Therefore, when trying to apply the WE measurement methods for a particular situation, one should consider the WE aspects specific to the studied geographic area and intersectionality.

Keywords: rural women, gender multidimensionality, female farmers, women in agriculture

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List of the abbreviations used in the thesis

SDG	Sustainable Development Goals
WE	Women´s Empowerment
DHS	Demographic and Health Surveys
WEE	Women´s Economic Empowerment
MFIs	Micro-Financial Institutions
OLS	Ordinary Least Squares Estimation
NGOs	Non-Governmental Organisations
WEAI	Women´s Empowerment in Agriculture Index
5DE	Five Domains of Women´s Empowerment in Agriculture
GET AHEAD	The Gender and Entrepreneurship Together Ahead
IPV	Intimate Partner Violence
WELI	Women´s Empowerment Livestock Index
FEMI	Female Empowerment Index
Pro- WEAI	Project-level Women´s Empowerment in Agriculture Index
3DE	Three Domains of Empowerment Index
A-WEAI	Abbreviated-Women's Empowerment in Agriculture Index
DI	Decision-Making Index
WEI	Women´s Empowerment Index
FGDs	Focus Group Discussions
ICTs	Information and Communication Technologies
SIGI	Social Institutions and Gender Index
SWPER	Survey-Based Women's Empowerment Index
GDI	Gender Development Index
WPEI	Women´s Political Empowerment Index
CSO	Civil Society Organisations

1 Introduction

WE and Gender Equality are associated with many of the Sustainable Development Goals (SDGs) of the United Nations. The SDGs acknowledge the importance of women´s economic empowerment, the same rights to economic resources, and the decision-making process in the economy (Peterman et al. 2021). WE will increase household welfare benefits and help countries improve their financial and social health dealing with poverty, food security, and illiteracy (Annan et al. 2021). Moreover, WE enhances the capability to accomplish instrumental outcomes such as women´s and children´s health and nutrition, women´s control over sexuality and fertility, alleviation and prevention of intimate partner violence (Miedema et al. 2018). In rural areas, women work as farmers, wage earners, and businesspeople but simultaneously have to provide food and take care of children and the elderly. In rural development, women face everyday discrimination and societal and cultural norms. They have unequal access to health and property ownership rights.

WE remains to be challenging to measure. The most effective way of measuring it is by defining relevant indicators. WE has multiple dimensions that analyse the empowerment of women from different perspectives (Kazembe 2020). For instance, Women's Economic Empowerment strives for a better life for women and girls concerning financial security and the purpose of economy-management of the household. The agricultural dimension is crucial because agriculture is the main livelihood for rural women (Akter et al. 2017). In the social dimension, WE is determined by marriage, childbearing, and education changes of women. A gender gap prevails in political participation and political knowledge, particularly in rural areas (Goldman & Little 2015).

Women in rural economies are vital agents in accomplishing economic, environmental and social changes that lead to sustainable development. That is why there is a need for more equal opportunities between men and women.

2 Aims of the thesis

The bachelor thesis aims at providing a comprehensive review of currently applied methodologies, methodical tools and their respective indicators measuring women's empowerment in the context of rural development. The thesis is written in the format of the analytical literature review of available scientific articles and grey literature published from 2011 to Q1/2021.

3 Methodology

The bachelor thesis methodology is established on the literature review of secondary sources that examine the methods of measuring WE in rural development. The literature review analyses different approaches to measure WE. The dimensions of WE are measured by economic, agricultural, social and political indicators. The literature review differentiates according to the categories: time, materials, types of documents and technical processing. The literature source selection is based on the literature source's name and content. The literature sources must 1) be written in the English language, 2) be published in the years 2011-2021, 3) have the intention to examine WE in rural development, 4) be related to at least one of the chosen dimensions of WE (Kazembe 2020), and 5) be either research or review article in the Science Direct database (the fifth point does apply only for scientific journals, not for grey literature). The studies were hand-searched to avoid errors related to irrelevant sources. Figure 1 shows the number of published literature related to years.

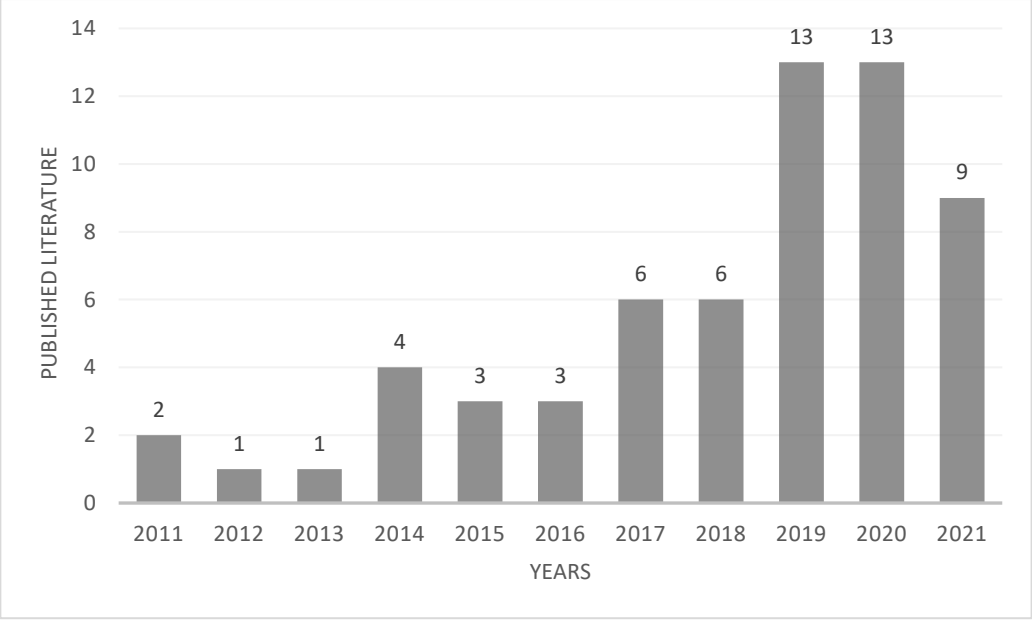

Figure 1 Number of published literature between 2011-2021

The scientific journals were searched through the Science Direct database. The grey literature sources were obtained through research using Google Scholar and other authors' references. To find the given sources for the literature research, I used keywords

(individual and combined with Boolean operators[1]): WE AND agriculture, WE AND political knowledge, WELI, SWPER, FEMI, WE AND rural women, women´s empowerment index, food security AND WE, WE AND land ownership, WE AND use of contraceptives, WE AND microfinance services, measuring WE AND employment, WE AND political participation, WE AND economic development, and WE AND method or measure.

3.1 Literature Selection Procedure

The sources considered for this review fit in the publishing period of January 2011 - April 2021. The initial search of probable sources appeared with 2 502 results from Science Direct and 50 results from Google Scholar. The parameters determined for the methodology were narrowed to 1 022 articles. The keywords were then added according to the dimensions of WE, and unrelated articles were removed. This procedure ended with 237 literature sources, with 176 sources reading only abstract and 61 articles to analyse approaches for measuring WE. The 176 abstracts did not follow the criteria for choosing the sources and were removed by keyword scanning. Figure 2 explains the literature selection procedure.

In addition to the above mentioned selected sources, I have chosen the work of Kabeer (1999) as a theoretical basis of my bachelor thesis even though it does not fit the research sources' time aspect. The reason behind selecting Kabeer (1999) is that her research on Resources, Agency, and Achievements is the building block for many

[1] Boolean operators are widely used for researching combined keywords in database researches. The word used as the Boolean operators are AND, OR, NOT to broaden the search results. Another example of Boolean operators are the quotation marks, which are used for researching an exact phrase (Aliyu 2017).

methods and articles. Many authors used her work to develop methods of measuring WE.

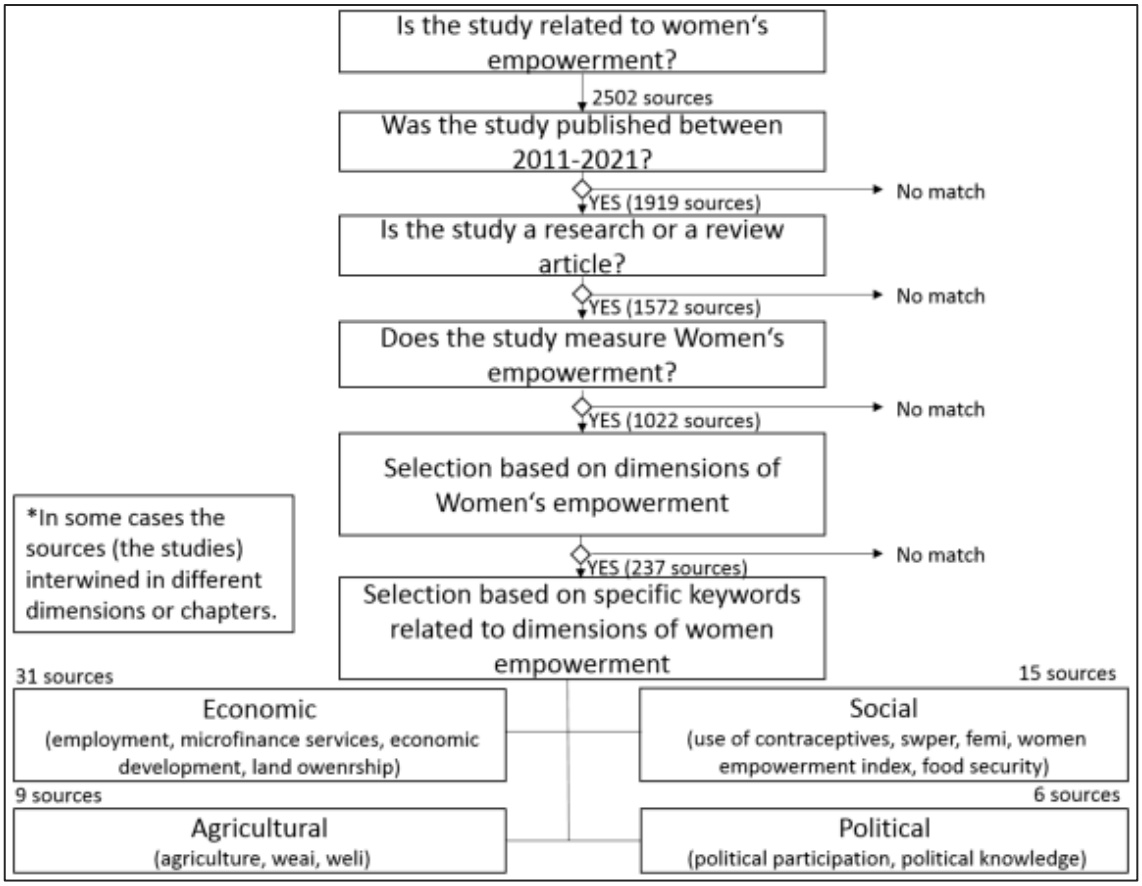

Figure 2 Methodologic process inspired by Upadhyay et al. (2014) and Duarte Malanski et al. (2021)

4 Literature Review

The literature review examines WE as a multidimensional process defined by selecting suitable indicators. The term multidimensionality derives from women´s everyday lives in which they face unacceptable social, political, economic, and physical conditions (Gressel et al. 2020). The limitation of using multidimensionality of WE is that it makes it challenging to compare individual WE's studies and methods. On the other hand, choosing only one indicator to measure WE is not enough to measure WE as a whole. The multidimensionality does not mean that when women progress in one dimension, they also progress in other dimensions (Pratley 2016).

The four dimensions of WE, such as economic, agricultural, social and political, are commonly found in literature concerning WE (Habibov et al. 2017). The economic dimension refers to control over material resources and their claims. WE in the social dimension is measured by access to social resources. The political dimension analyses inclusion in political processes and women's political knowledge (Pratley 2016). The reason for choosing the agricultural dimension is that agriculture represents most rural women's livelihood (Sraboni et al. 2014).

4.1 Definition of Women's Empowerment in the Context of Rural Development

WE is a process within which women become empowered from being unempowered. There are two perspectives on this process. The first one is **personal**, describing the personal choice of women. The second one is **collective**, emphasising collective growth (Huis 2017). WE could change with many interventions to increase women's empowerment in resource-poor settings (Ambler et al. 2021). A definition used by many researchers (Duflo 2011; Oxfam 2017; Winther et al. 2018; Gressel et al. 2020; Karimli 2020) is the definition from Kabeer (1999: p. 1):

> *"Empowerment refers to the processes by which those who have been denied the ability to make choices acquire such an ability. In other words, empowerment entails a process of change. "*

This definition is further developed by Pratley (2016:1) as:

> *"a unifying term commonly defined as a process in which changes in agency (or autonomy) are tracked over a period of time taking into account the social context, or opportunity structure, determined in part by the status and voice of women".*

Sundström et al. (2017) also recognise WE as a process, and Goldman& Little (2015) propose a conceptual model of WE in Figure 3 showing the WE as a process. Figure 3 shows how WE is more of a continuing process than an outcome measure.

Their research was based on the work of Kabeer (1999), where for their model, they use Resources (Context), Agency and Achievements (Outcomes) as the elements of WE.

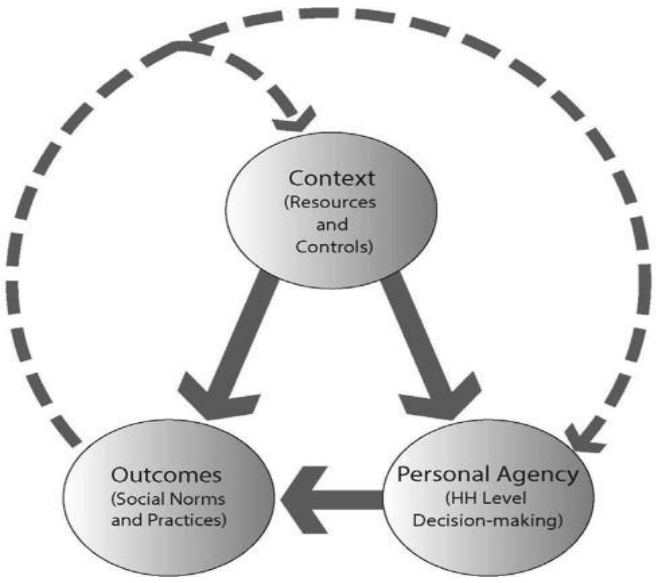

Figure 3 Model of empowerment process (Goldman & Little 2015)

4.2 Importance of Women´s Empowerment Measurement

WE has been a highly discussed topic since the 1980s because it is one of the solutions to achieve other development goals such as poverty, food security and child nutrition. Understanding WE and adequately analysing it can improve women´s well-being globally. WE is the most critical solution to today´s problems around the world (Laszlo 2020). Gender equality and WE are crucial because they relate to fundamental

human rights. WE ensures that women can enjoy their human rights and contribute to sustainable development through the rural economy (ILO 2019).

Moreover, women in rural areas have disadvantages in opportunities and resources compared to men (Maligalig et al. 2019; Akurugu et al. 2021).

4.3 Overview of Measurement Methods of Women´s Empowerment

WE is directly measured or observed by reflection in an individual´s behaviour and can be identified with only a few indicators such as employment, education, social norms and childbearing (Mahmud et al. 2012). Furthermore, WE is a latent phenomenon, which means that the indicators must be correctly identified and used. Indicators and other measurement tools should be cognizant of women´s demographic status such as age, ethnicity and religion. Women's demographics can show similar conditions worldwide (Arachna 2016). There are two opposite poles of measuring WE: through the national statistics (Dardis et al. 2018) or the focus on the individual's level (Lecoutere 2017). National statistics are mainly used to compare nations in terms of WE and aggregate indicators. In contrast, the studies measured based on individual behaviour concentrate on examining and quantifying power relations (Oxfam 2017). The Demographic and Health Surveys (DHS) are highly used because they are nationally representative and apply the same questionnaires between countries. The importance of the DHS is also that they give an excellent opportunity to measure comparable indexes over time and space. These national surveys show a broad spectrum of socio-economic population and health indicators; these can further access more dimensions and topics of WE (Laszlo 2021).

4.3.1 The Framework of Kabeer (1999): Resources, Agency and Achievements

Kabeer (1999) has selected the method of using indicators and three domains to measure WE: **Resources (Preconditions), Agency (Process) and Achievements (Outcomes)**. The characterisation of the domains and their indicators is mentioned in Table 1. Most of the conceptual frameworks are based on the methods of Kabeer (1999) framework of three main components. Kabeer (1999) research also provides the implications and instructions on how to measure WE.

Table 1 Three-dimensional framework of WE (Kabeer 1999). Inspired by Colverson et al. (2020) and Oxfam (2017).

Domain	**Indicators**
Resources	Future claims, expectations Economic Resources (land, finance, working capital) Social (obligations, expectations) Human (own skill, knowledge and imagination)
Agency	Exercise of power of "Non-decision-making" Collective reflection and action Individual reflection and action Purposive actions (Bargaining power)
Achievements	Capabilities, "Being and Doing"

Oxfam (2017) follows Kabeer (1999) scheme with a “How to” guide to measure WE. Oxfam (2017) developed a framework based on three domains of measuring WE: **personal, relational, environmental** The explanation of each domain is described in Table 2. Oxfam (2017) raises the questions on why to measure WE and at what level should be WE measured.

Table 2 Women´s Empowerment Index (Oxfam 2017)

Women´s Empowerment Index

Domain	**Indicator**
Personal	Self-confidence Individual knowledge Opinions and attitudes on women´s economic role Non-acceptance of GBV Personal Autonomy
Relational	Influencing and Community Control over household assets Involvement in household decision making Independence Income Experience of GBV Control overtime
Environmental	Access to services and resources Ability to influence at a political level

The method of Huis et al. (2017) measures WE in three domains, similar to Kabeer (1999). In comparison, (Huis et al.2017) analyse microfinance services linked to WE, whereas Kabeer (1999) measures WE in general. The micro-level shows how individuals feel or act personally, thus domain **personal** (domain Resources in Kabeer

(1999)). The meso-level shows how individuals feel or act towards others - thus domain **relational** (domain Agency in Kabeer (1999)). The macro-level is more of a broader context and means, showing real societal empowerment – thus domain **societal** (domain Achievements in Kabeer (1999)). The personal domain consists of self-confidence, locus of control or self-esteem, which are also indicators of Kabeer (1999) referring to Human Resources. The relational obtains the operationalisations such as bargaining power, social network size or domestic violence. These indicators can be easily compared to those of Kabeer (1999): non-decision making (domestic violence), bargaining power and collective reflection and action (social network size). On the other hand, the societal domain contains different indicators than Kabeer (1999), such as the percentage of female microfinance borrowers, average loan balance for female borrowers, and percentage of female leaders in micro-financial institutions (MFIs). Overall the societal domain and the domain Achievements both focus on WE's outcomes, even though they use different indicators to measure it.

The same framework of three domains of WE (relating to Resources, Agency and Achievements) is measured by relating to the proximity of the concept: **direct, indirect** and **constraints**. Direct measures are defined as a women´s ability to assert her preferences in decision-making Agency in Kabeer (1999). The indirect measures are the outcomes of the decision-making process. The constraints measures are factors outside of a woman's direct measures or her household, which cannot reach through her access. Also, this WE framework differentiates between two measures: Objective (observed by the side of the researcher) and subjective (the feelings and actions of the participants in the study)(Laszlo et al. 2020).

Furthermore, Winther et al. (2018) developed a three-domain survey-based method based on Kabeer (1999) classification of WE. It is also similar to the Women´s Empowerment Index in Agriculture (WEAI). The first domain explains individual abilities to make choices. The second one considers the social norms in the women´s community. The last domain measures WE in various sub-domains: Negative Events and Agency in the realm of the intervention. Similarly, the WEAI has also measured WE in sub-domains: Leadership and Time. This method provides a questionnaire that includes a question about each of the domain indicators (Winther et al. 2018).

As a summary of the importance of Kabeer (1999) framework, we can see that Huis et al. (2017), Oxfam (2017), Winther et al. (2018), and Laszlo et al. (2020) follow the framework of Kabeer (1999). They all classify WE into three domains. The denomination of the domains varies, but they include similar indicators. The overview of all authors that follow Kabeer (1999) can be seen in Table 3.

4.4 Economic Dimension of Women´s Empowerment

There is a direct linear correlation between WE and economic development. However, economic development alone is not enough to empower women. The country´s government has to enforce new policies and rights that would affect women and girls. These policies shall be in the economic sphere, such as monetary policy, financial intermediation and banking, and a social policy related to the economy (Duflo 2011).

Similarly, Portes et al. (2019) examine the interaction between monetary policy and empowerment because it can influence the supply of loanable funds, increasing or decreasing the traditional money transmission channels. These policies would increase the economy and increase WE, thus increase all people's welfare.

Nonetheless, Laszlo et al. (2020) declare that the core focuses of economic empowerment are the labour market's outcomes that women can earn an income and participate in the labour force. Women's requirement to be empowered is that employment must be meaningful and gainful. Whether and how much women work in the labour force is one indicator of WE. When women can earn money, they do not depend on their spouses' income and in the household, they have better bargaining power.

Scientific papers (Pradhan et al. 2019; Holmes & Busia 2020; Karimli et al. 2020) mention that bargaining power is the critical factor to women being empowered. The Bargaining power is also one of the most measured indicators of the three-way classification of WE.

4.4.1 Bargaining Power Related to Employment as an Indicator of Women´s Empowerment

In developing countries, women are working in their household (taking care of small husbandry), and they have less autonomy than working out of their household and contributing to the households' income (Duflo 2011). The most exciting approach to this issue has been proposed by using a mathematical equation to measure a household´s collective utility and, thus, the household's bargaining power of WE. A Household´s collective utility describes the consumption or household food intake related to income. The Cobb-Douglas Utility (1) function is designed to solve the Household´s Problem and differentiates between intra-temporal and inter-temporal choices (Portes et al. 2019):

$$Ct = \{ (ft - s)\, \alpha(xt)\, (1-\alpha) \}\theta\{ (ft - s)\, \beta\, (xt)\, (1-\beta) \}(1-\theta) \qquad (1)$$

Where Ct is a consumption aggregator, α is the preference parameter for food for women, β represents the same for men, $0 < \beta < 1$; and θ is the woman's intra-household bargaining power, $\theta \in [0, 1]$. Then, taking as given the interest rate (r), the relative price of food (p), initial asset holdings $(a0)$, endowment $(e0)$, relative risk aversion (σ), and the woman's power(θ).

Krumbiegel et al. (2020), against Portes et al. (2019) utility function, uses a non-unitary household bargaining model with the basis of Kabeer (1999). The study from Ghana measures WE through objective indicators of resources, which are *"self-reported input into various areas of household decision making, ranging from minor household expenditures to agricultural production decisions"* (Krumbiegel et al. 2020: p.5)—also identifying subjective indicators of self-reported agency *"different spheres of decision-making within the household"(*Krumbiegel et al. 2020: p.5). On the other hand, this study does not measure the outcomes of WE, but only the preconditions and processes, thus not using the third domain of Kabeer (1999) –Achievements.

The continuous variables contribute income to a household of both genders, asset ownership, reproductive workload (indoor and outdoor chores and care activities). These variable are analysed by OLS (ordinary least squares) estimation. The categorical variable, such as input household bargaining power, was measured differently since not all family members are a part of every decision-making process. The input of the household bargaining power varies in the sample case. Therefore, the OLS used the

Probit models. The control variables are the spouses' education levels, size, and household religion (Krumbiegel et al. 2020).

Krumbiegel et al. (2020) proposed a regression model (2) to estimate the effect of different indicators on WE indicators:

$$WE_i = \alpha_0 + \alpha_1 FE_i + \alpha_2 ME_i + \alpha_3 JE_i + \alpha_4 X_{hh} + \varepsilon_i \quad (2)$$

Where WE_i is the indicator of women's empowerment, FE_i is female wage employment, ME_i is male wage employment, JE_i is joint wage employment of the male and female spouse, X_{hh} is a vector of other individual and household characteristics, the alphas α are parameters to be estimated, and ε is a random error term.

When comparing these two linear equations, (Krumbiegel et al. 2020) and (Portes et al. 2019) use only one independent variable, women´s bargaining power. The dependent variable is different, one is an indicator of WE, and the other is a consumption aggregator. The conclusion from this is that Portes et al. (2019) focuses on food consumption more than just on WE overall, while Krumbiegel et al. (2020), in her utility function, uses indicators of WE to identify WE.

Krumbiegel et al. (2020) and Portes et al. (2019) use different methods and indicators of WE to examine household function related to the income distribution of women and overall WE in developing countries. Portes (2019) studies savings as an indicator in household decisions, whereas Krumbiegel et al. (2020) study the effect of horticultural employment on household decisions explicitly. They all work with empirical evidence from developing countries (Ghana and Bangladesh) and examine women's bargaining power, earning their income, or doing housework.

4.4.2 Access to Microfinance Services as an Indicator of Women´s Empowerment

Microfinance services[2] are used to transform women and girls into active and engaged citizens. Access to microfinance services as an indicator of WE is viewed as a

[2] "Microfinance services *include micro-credit, micro-savings, micro-insurance, and money transfers to the poor. These services aim to enable micro-entrepreneurs to build businesses, increase incomes, accrue assets, and improve financial well-being The strategic targeting of microfinance to women has intended*

critical component of women´s economic rights. According to MFIs and Non-governmental organisations (NGOs), the need for access to credit is key to poverty reduction and WE. These companies engage in loans for poor women to invest in income-generation projects. On the other hand, these microfinance services are also criticised because they generate debt-dependent social relations (Tanima et al. 2020).

The Gender and Entrepreneurship Together Ahead (GET Ahead) programme in Northern Vietnam examines microfinance services linked to WE. This study examined WE more broadly in terms of *"assessing personal empowerment with control beliefs and relational empowerment with relational friction as well as intra-household decision-making power"* (Huis et al. 2019: p.1). The study outcome was that WE was increased on three levels: personal empowerment (control beliefs), relational empowerment (less relational friction) and intra-household decision making power related to microfinance services as a tool for measuring WE. Compared to other similar studies on the theme of microfinance services, the research examined both genders and had easily compared them. Microfinance indicators used in this case study were microcredit loans and training. This study's method was an interview conducted on the client's characteristics, households, socio-economic status, business practices, gender awareness, cognitive and non-cognitive skills, household decision making, loans, and relational friction (Huis et al. 2019).

The microfinance services can also be used as an instrument to measure and monitor women through an analytical framework (nonparametric method), which uses five indicators (identity of the person controlling income earned from self help groups activities, tolerance of domestic violence, household decision-making, improved status within family and aspirations for the girl child) to determine the effects between microfinance programs and WE (Archana 2016).

From a different view, Kapiga et al. (2019) adopt a cluster of randomised controlled trials of women in Tanzania involved in a microfinance loan scheme. Using this approach, researchers have shown that using microfinance services highly reduced

to enhance loan repayment as well as non-financial outcomes, such as household food security and children's nutrition, survival, and schooling" (Yount et al. 2021: p. 3).

intimate partner violence (IPV) and empowered women. Similarly, Yount et al. (2021) measure WE in connection with microfinance services and IPV. The data and measures are analysed through a twelve-module questionnaire about household and member attributes, assets owned by households/women, household borrowing behaviour and others.

4.4.3 Ownership of Assets and Land Tenure Security as an Indicator of Women´s Empowerment

Owning a property is a recognised tool for empowering women. Some developing countries established policies to empower women by ensuring that women with property rights can own assets like land or livestock, manage a property, conduct business, or travel without their husbands' consent.

It was also measured in the year 2011 that 21 of the 63 studied countries have unequal inheritance rights for men and women (Duflo 2011). Pradhan et al. (2019) highlight that there must be understood social relations around the property. The author emphasises the relevance of intersectionality (social categorisation such as race, class or gender) when dealing with different parts of the world. In Nepal, ethnographic research describing the interactions between intersectionality categories influences women´s property rights and empowerment (e.g. bargaining power or participation in social organisations). The study's main concern is that all property rights do not empower women equally, including informal laws such as religious law, customary law, project regulations, organisational rules, and local norms (Pradhan et al. 2019).

On the ownership of assets, Mishra & Sam (2016) has conducted their research to find a connection between land ownership and WE, among other indicators. Empirical evidence is taken from 2001 and 2011 Nepal Demographic and Health Surveys. This study uses an econometric technique and statistics to describe the relationship between the independent and dependant variable. The empirical relationship of empowerment and indicators shows this equation (3) (Misha & Sam 2016)

$$Y_{ijk} = \alpha + \emptyset L_{ijk} + V_{ij}\beta + X_{jk}\varphi + G_k\gamma + \varepsilon_{ijk} \quad (3)$$

Where i, j, and k index individual, household, and ecological zone, respectively, $\emptyset$ is the parameter of interest that measures the impact of women's

land ownership (Li) on empowerment variables defined by household decision-making in own healthcare, major household purchases, and visits to family or relatives, and represented by Y_{ijk} , V_i is a vector of the respondent's individual characteristics, X_j is a vector of household characteristics, G_k is a set of an ecological zone (mountains, hills).

A qualitative method was applied to support the quantitative method by interviewing Nepali women of the DHS survey2001 and 2011.[3] The study sample is based on household structure and occupation, choosing women in agriculture and whose households own land.

From a different perspective than Mishra & Sam (2016) and Pradhan et al. (2019), Doss & Meinzen-Dick (2020) developed a conceptual framework to analyse women's land tenure security. This framework was constructed to find factors and indicators of tenure security rights, to understand and compare tenure security across contexts and to develop programs and policies to strengthen.

In developing countries, land tenure security is critical for gaining WE. Land tenure is a discussed subject in rural China, where women have difficulties with land rights, village rules and informal customs. The essential property ownership is land ownership, where it is the base for women´s survival and development. Even though there is a limited amount of sources on land tenure and security, Han et al. (2019) and Doss & Meinzen-Dick (2020) agree that it is the most crucial aspect in WE related to economic development. The authors Doss & Meinzen-Dick, in comparison to Han et al. (2019), examines land tenure security in relation to WE as a whole with the definitions of property and land rights and laws and social norms. On the other hand, Han et al. (2019) study land tenure security as an indicator of WE in rural China, where he uses DHS questionnaire and Tobit model (4):

[3] *"Nepal Demographic and Health Surveys (NDHS), conducted by the Nepal Ministry of Health and funded by the United States Agency for International Development (USAID). The NDHS is a nationally representative cross-sectional household survey, and its objective is to provide reliable estimates for population characteristics such as fertility, contraceptive prevalence, health indicators, infant mortality, and women's empowerment"*(Mishra& Sam 2016:p.4).

$$Y = \alpha + \beta_1 L + \beta_2 D + \beta_3 E + \gamma V + \varepsilon, \varepsilon \tilde{} N\ (O, \sigma^2) \quad (4)$$

Where Y (WE) is a dependent variable and is broken at '0', β_1 , β_2 , β_3 , γ refer to the regression coefficients of the corresponding independent variables, D refers to set of variables that indicate the status of *de facto* land tenure security, E refers to a group of indices indicating land economic tenure security status, *V* refers to the control variables of household characteristic features that may affect women's empowerment.

The authors state the limitations of authors Mishra & Sam (2016), where they say that to(Han et al. 2019: p.15):

> *"measure women's autonomy in household decision-making by their influence in household decision making (participation in decision making or independent decision making) or their rights of final say."*

The study of Han et al. (2019) consists of more empowerment indices that are established on DHS. The DHS measures WE in the areas of

> *"women's decision-making autonomy in house purchasing (Y1), the consumption of durable goods (Y2) and daily necessities (Y3), fertility choice (Y4), medical care choice (Y5), job choice(Y6) and social interaction choice (Y7). The value assigned to rural women's independent decision making is 2, participation in decision making is 1, and not participate in decision making is 0. The comprehensive value is the sum of the Y1…Y7 index values"* (Han et al. 2019:p.6).

4.4.4 Food Security as an Indicator of Women´s Empowerment

There is a direct link between food security and WE. Women take care of food security[4] and nutrition in the household and serve as food producers.

> *"The increased status of women can lead to many possibilities of improving their lives and nutritional status. So to achieve food security, women's empowerment is the right and necessary step, especially in developing countries"(Aziz et al. 2020: p.1).*

[4] *"The Food and Agriculture Organization (FAO) defines food security as a situation when people have physical and economical access to adequate, safe and healthy food at all times to meet their food needs and preferences for an energetic and healthy life"* (Aziz et al.2020: p.1).

On the other hand, Galiè et al. (2019) argue that there are still some unknown and unclear connections between food security and WE.

The research of Aziz et al. (2020) took place in Tanzania, where they used structured interviews from 600 households to find the link between WE and food security. In this method, a different domain of WE was used as an explanatory variable. These domains of WE were associated with some of the indicators of WE. These indicators are legal rights, information and communication technologies (ICTs), familial rights, social support, infrastructure and entitlement. All of these indicators were answered on a five-numerical scale point. The data from the indicators were then processed as statistical analysis. Their research was that when women have access to legal rights, ICTs and familial empowerment, they can better achieve food security than those who are not empowered in these indicators of WE (Aziz et al.2020).

Similar research was conducted in Tanzania, but not only focusing on food security but also on maternal and child diet diversity. The authors used a mixed method to explain the connection between food security and WE. The qualitative methods used in this research were WEAI and Women´s Empowerment in Livestock Index (WELI) (Galiè et al. 2019). At the same time, Aziz et al.(2020) used a five-point scale to measure WE as the explanatory variable. Clement et al. (2019) use Kabeer(1999) framework to analyse their research and use WEAI and A-WEAI.

4.5 Agricultural Dimension of Women´s Empowerment

Most women in rural areas engage in the agricultural sector as the only livelihood. In 2017, women represented 43 % of all agricultural labour force and took part in the world´s food production, with over 50 % in 2017. Therefore, women directly affect the production of agriculture and food security in households (Akter et al. 2017).

> "*However, a large number of studies on women's role in agriculture have highlighted gender gaps in asset ownership, education, access to credit and extension services, which causes female farmers to be less productive"* (Sell&Minot 2018: p.1).

The methods for measuring WE that are available are two Indexes: WEAI and WELI. These methods refer to agricultural production and WE and their correlation.

4.5.1 Women's Empowerment in Agriculture Index

WEAI is an effective method to measure empowerment, agency and inclusion of women in the agricultural sector. The initial method originated for small-holder farmers today, and it can be applied to measure agricultural or non-agricultural farmers or engage in non-farm business (O´Hara & Clement 2018). WEAI is based on Kabeer (1999) Agency because the authors of WEAI, Alkire et al. (2013), believe that this domain was not so much explored and is a direct measure that can be measured more likely than the other domains. WEAI is defined by five domains (5DE) as a sub-index:

> *"(1) decisions about agricultural production, (2) access to and decision making power about productive resources, (3) control of the use of income, (4) leadership in the community, and (5) time allocation."* (Alkire et al. 2013: p.2)

These domains are measured through ten indicators to show whether each individual reached the area's achievement. The indicators are input in productive decisions, autonomy in production, ownership of assets, purchase, sale or transfer of assets, access to and decisions about credit, control over the use of income, group membership, speaking in public, workload and leisure time (O´Hara & Clement 2018)

The 5DE is measured through two different equations: Computing the disempowerment index[5] and then computing the 5DE (5) (Alkire et al. 2013):

$$5DE = H_e + H_p \cdot A_e \tag{5}$$

Where H_e is the empowered headcount ratio, which equals (1 – Hp); and A_e is the average adequacy score of disempowered individuals, where H_p is the disempowered headcount ratio.

The other sub-index, Gender Parity Index (GPI), is calculated and has a 10% weight of the score in the WEAI. The GPI is measured through a comparison between a woman and her spouse in each household (Malapit et al. 2019).

[5] "*There are two equivalent notations that can be used to describe the construction of 5DE. The "positive" notation focuses on the percentage of empowered women and adequacies among the disempowered. The other notation focuses on the percentage of disempowered women and the percentage of domains in which they lack adequate achievements. In this section, we use the second notation, as it is consistent with the* M_0 *measurement"* (Alkire et al. 2013:p.4).

Malapit et al. (2019) have adopted the version of WEAI into the project-level Women´s Empowerment in Agriculture Index (pro-WEAI) by using twelve indicators and the Three Domains of Empowerment Index (3DE): intrinsic agency (power within), instrumental agency (power to), and collective agency (power with). The pro-WEAI includes five more indicators than the WEAI:

> *"Attitudes about IPV against women, self-efficacy, respect among household members, visiting important locations, membership in influential groups" (Malapit et al. 2019: p.10).*

This pro-WEAI provided a significant opportunity to advance the understanding of agricultural livelihoods. This study aims to contribute to this growing research area by exploring agricultural development projects.

In a similar vein, Colverson et al. (2020) developed WEAI into Abbreviated-Women's Empowerment in Agriculture (A-WEAI). The work recognises the WEAI as the most rigorous tool to measure WE as a direct and indirect result of development projects' interventions. A-WEAI is designed to compute the survey length and to measure women´s decision-making in many projects related to animal care knowledge and practices to feeding children (Colverson et al. 2020).

The Practical use of WEAI is used in the Pakistan project to explore its effect on household food insecurity using household survey data of 600 rural women. The quantitative method Partial Least Square Model Structural Equation Model (PLS-SEM) using the target sample set random sampling method. The PLS-SEM (6) and (7) examines the importance of the connection between latent constructs, the predictive power of different variables and the variance of endogenous variables (Aziz et al. 2021) :

$$(1)\varepsilon\ (m,1) = B\ (m,m) \cdot \varepsilon(m,1) + \tau(m,1) \tag{6}$$

$$(2)x(P,1) = \Lambda\ (p,m) \cdot \varepsilon(m,1) + \delta(p,1) \tag{7}$$

m and p express the latent variables (LVs) and the manifest variables (MVs). The $\boldsymbol{\varepsilon}$, x, B, Λ, τ and δ specify the LV and MV vectors, the path coefficients of the LVs, the factor loading joining the MV to the LV, and the errors terms, respectively

Likewise, Sell & Minot (2018) use a modified WEAI module in their research - a household level questionnaire solely focused on the indicator of decision-making as the primary measurement of WE. This study was conducted in Uganda with 1440 households from 2012- 2013. They constructed a decision making index (DI) that explains the relationship between an individual´s role in production decisions and the amount of income from each activity. The activities that are included in the survey are food crop farming, cash crop farming, livestock raising, non-farm self-employment, and wage and salary employment. The DI (8) is calculated (Sell & Minot 2018):

$$DI = \frac{\sum_{i=1}^{N}(PD_i) + (RD_i)}{N} - 2 \quad (8)$$

where PDi is the level of input into production decisions regarding activity i, RDi is the level of input into revenue allocation decisions regarding activity i, and N is the number of economic activities of the household (maximum 5)

This developed version of WEAI is based purposely on the decision-making process. When comparing DI and WEAI Alkire et al. (2013), DI´s outcome does not include information to complete an in-depth analysis of well-being. The DI is constructed as a baseline for future studies and needs to be developed more thoroughly, whereas WEAI is finished as a tool to measure WE. The GPI and regression analysis calculate empowerment as a continuous variable. On the other hand, in the WEAI, empowerment is used as a binary variable (Sell & Minot 2018).

Similarly, Oxfam (2017) builds their guide of how to measure WE and the Women´s Empowerment Index (WEI) using the experience and tools of WEAI. The guide follows a similar multi-level method to measure WE. Both Oxfam (2017) and Alkire et al. (2013) take the same approach in following (Kabeer 1999) ´s work.

The WEAI and WEI are the basis for the method of Maiorano et al. (2021). This method recognises WE in four domains: household, community, market, and state. This framework analyses WE through one institution and also between institutions.

> "*The approach shows how policies and practices at different institutional locations are not independent of each other but link to, reinforce and influence those of the others. For example, changes in government policy can impact access to resources, benefits and claims, which may increase people's bargaining power with their employers (market) and which may*

have an impact on social relations within the family (household) as well as give people a heightened awareness to challenge the existing norms (community)" (Maiorano et al. 2021: p.3).

On the other hand, Aziz et al. (2021) use WEAI as a framework for their research in Southeast Asian countries. The data is collected primarily through a series of focus group discussions (FGDs). However, Aziz et al. (2021) mention that WEAI has many limitations, such as that it is measured only quantitatively, which raises the question of WE (intangible and unquantifiable concept)being measured by this method.

"For example, a quantitative indicator will fail to capture the fact that although many women hold land titles, this is only for tax or subsidy purposes, and their spouses, in fact, make all the decisions about land utilisation" (Aziz et al.2021: p.10).

The same limitations are acknowledged by Colverson et al. (2020) and Malapit et al. (2019). The authors suggest that the original WEAI cannot be used to implement development projects. This is because these authors have developed the original WEAI so that it can be used for more practical use in other WE's dimensions, not only the agricultural dimension. The WEAI was developed in many other studies, such as in Gupta et al. 2019. They also have a clear view on WEAI, where they add that

"three broad sets of limitations that, in our opinion, currently characterise the way the WEAI is being used by the international community: i) implementation based on underlying indicators that are not adapted to be context-specific, ii) adapting the way the index is constructed once the underlying activities and adequacy thresholds are modified and iii) analytical i.e. sensitivity and consistency analysis"(Gupta et al. 2019: p.11).

4.5.2 Women´s Empowerment in Livestock Index

WELI is an index that is measured through six domains of WE: *"(1) decisions about agricultural production; (2) decisions related to nutrition; (3) access to and control over resources; (4) control and use of income; (5) access to and control of opportunities; and (6) workload and control over own time"* (Galiè et al. 2019: 2).

The WELI (9) calculation is based on WEAI (Galiè et al. 2019):

$$WELI_i = w_1 I_{1i} + w_2 I_{2i} + \cdots + w_d I_{di} \quad (9)$$

Where WELI is the WELI score for individual i, Idi is coded 1 if the person i has adequacy in indicator d or 0 otherwise, and w_d is the weight assigned to indicator d. All 16 indicator weights sum to 1.

WELI is not well-known as WEAI; this method is crucial in livestock farming because the other methods pay less attention to livestock farming and focus on crop farming. The questionnaire of WEAI targets questions about livestock only in 30 %. Taking care of livestock can allow women in rural areas to empower. The limitation is that women lack information on animals and services of animals, scarce land for production and limited introduction to other animals' breeds (Galiè et al. 2019).

Colverson et al. (2020) add that WELI is similar to the pro-WEAI but not to the WEAI or the Adapted version of WEAI (A-WEAI). WELI consist of both qualitative and quantitative method. The qualitative method is measured through interviews with the participants: *"(1) what they understood empowerment to mean, (2) key indicators they considered important to measure empowerment, and (3) their perspectives on how livestock, their own empowerment, and food and nutrition security of their household were connected*."(Colverson et al. 2020: p.3) Figure 5 presents indicators and domains of the agricultural methods created by Colverson et al. (2020).

WEAI		A-WEAI		Pro-WEAI		WELI	
Empowerment Domains (5)	Indicators (10)	Empowerment Domains (5)	Indicators (6)	Empowerment Domains (3)	Indicators (12)	Empowerment Domains (6)	Indicators (16)
Production	Input in productive decisions	Production	Input in productive decisions	Intrinsic Agency	Autonomy in income	Decisions on Agricultural Production	Input in productive decisions
	Autonomy in production				Self-efficacy		Autonomy in production
Resources	Ownership of assets	Resources	Ownership of assets		Attitudes about domestic violence	Decisions on Nutrition	Input in nutrition decisions
	Purchase, sale or transfer of assets		Access to and decisions on credit	Instrumental Agency	Input in productive decisions		Autonomy in nutrition
	Access to and decisions on credit	Income	Control over use of income		Ownership of land and other assets	Access to and Control Over Resources	Ownership and control of livestock assets
Income	Control over use of income				Access to and decisions on credit		Ownership and control of land and crop assets
Leadership	Group membership	Leadership	Group membership		Control over use of income		Credit access
	Speaking in public				Work balance	Control and Use of Income	Control over farm income
Time	Workload	Time	Workload		Visiting important locations		Control over non-farm income
	Leisure			Collective Agency	Group membership		Control over expenses
					Membership in influential groups	Access to and Control of Opportunities	Access to markets
					Respect among household members		Access to non-farm income opportunities
							Access to information, training and groups
						Extent and Control of Work Time	Total workload
							Proportion of revenue generating workload
							Control over own time

Figure 4 Methods of Agricultural Dimension of WE with Indicators (Colverson et al. 2020)

4.6 Social Dimension of Women´s Empowerment

WE can be measured through social indicators such as family, education, child care and use of contraceptives, age of marriage and non-labour differences. These indicators focus on women´s personal life and sociological background (Aziz et al. 2020).

4.6.1 Family Structure as an Indicator of Women´s Empowerment

One way of approaching WE is through an appropriate family structure indicator. As previously stated, women in developing countries have been taking care of their children and their household. The research by (Karimli 2020) from Burkina Faso describes the relevant effect of family structure, such as monogamous or polygamous, on WE. This sociological indicator can help understand the power in the household's bargaining power and overall WE.

The author employed multi-level mixed-effects logistic regression models in Burkina Faso with 360 interviewed females living in poverty. One of the interview questions was applied in monogamous or polygynous family structure. They used the qualitative method and applied a quantitative method such as a structural equation model. The source of the research is Social Institutions and Gender Index (SIGI) (Karimli 2020).

Not only polygamous or monogamous family structure can affect WE, but also matriarchal or patriarchal family structure. The patriarchal structure is the most common one in developing countries (Khumalo et al. 2015).

4.6.2 Use of Contraceptives as an Indicator of Women´s Empowerment

One of the elements of WE is to make their own choices about their reproductive health. In many developing countries, women face death through pregnancy and childbirth. There are many ways to prevent maternal death, and the most cost-effective measure to be taken is birth control. Due to the patriarchal society, women have no say in their health preference. Since 1994 many have changed in family planning through government initiatives, but this problem still prevails in developing countries. Singh et al. (2019) use the National Family Health Survey (NFHS) in India to describe indicators of WE that they have chosen to examine. The indicators (women owning house/land, women owning a bank account and mobile phone which they use on their own, women

who participate in household decision making, women whose educational attainment is ten years and above and women who worked in last twelve months and were paid in cash) are measured through regression analysis (10) to measure the relationship between diversification in WE (predictor) and the use of contraceptives (response variable) (Singh et al. 2019):

$$Y = B_0 + B_1X_1 \dots \dots . B_pX_p \quad (10)$$

Where Y is the dependent variable, X_1 is the independent or the predictor variable, B_1 equals the mean increase in Y per unit increase in X_i, while other X_i's are kept fixed. The method results showed that the use of contraception in India has increased. The Data Analysis was made in all Indian states, showing that not all empowerment is the same in each area.

Similarly, Patrikar et al. (2014) analyse the relationship between WE through two indicators and the use of contraceptives. The method used in this research was personal interviews of 385 married women in India. One of the indicators of WE as women´s decision making power, where women had to answer questions:

> *"regarding who in the couple make decisions about some of the family issues like how many children to have; how to rear them; what daily expenses should be incurred; what relatives and friends should be visited; when the couple would have sex and visiting health care facility*"(Patrikar 2014: p.7).

The other indicator of WE was women´s autonomy, where the women responded to:

> *"Whether or not the wife needs her husband's permission for going outside alone, going outside with children, deciding about daily expenses, visiting relatives and friends, working, studying, using contraceptives and participating in community activities"* (Patrikar 2014: p.7).

The other step of the method was logistic regression analysis that showed the relationship between these two indicators and the use of contraception.

On the other hand, Goldman & Little (2015) and Tsikata & Darkwah (2014) consider the use of contraceptives only as one of many indicators in their method of measuring WE. Goldman & Little (2015) use birth control as a survey question, whereas Tsikata & Darkwah (2014) describes the use of contraception as part of one domain of WE, particularly: sexual and reproductive rights.

4.6.3 Female Empowerment Index (FEMI)

The Female Empowerment Index (FEMI) was developed at a sub-national level to measure WE in 6 levels: Intimate Partner Violence (IPV), employment, education, healthcare, decision making, and access contraceptives. The index is measured in the range between one and zero, measuring from the lowest empowerment to the highest. The research data sources are the DHS program in Nigeria for the years 1990, 1999, 2003, 2008, and 2013. The women's sample was based on a cluster-sampling approach and interviewing women of age between 15 and 49. The next step of measuring WE was to construct the inequality index (11):

> *"In some cases, one can either examine absolute values for women's empowerment in a particular category or express them relative to men's achievement in the same category. For the education and employment categories, we chose to use relative values. These were computed for each state i by multiplying them by the inequality coefficient (women's value/men's value, capped at one)"* (Rettig et al. 2020: p.6).

$$Inequality - adjusted\ value_i = \ women´s\ value_i \times \frac{women´s\ value_i}{men´s\ value_i} \quad (11)$$

4.6.4 Survey-based Women's Empowerment Index (SWPER)

The SWPER is an indicator that measures WE through three domains: attitude to violence (opinion on wife's-beating: does not matter, if justified or not), social independence (education, information, age at first childbirth and first cohabitation) and decision-making. The method's analysis data is based on DHS. The next step in this method was to identify questions that were part of the surveys. Thirdly, the SWPER (12) had to be calculated for a specific survey (Ewerling et al. 2017):

$$S_{ij} = \frac{\left[-\left(\sum_{v=1}^{15} \varphi_{vj}\, \bar{x}_v\right) + \sum_{v=1}^{15} (\varphi_{vj} x_{vi})\right]}{\sigma_j} \quad (12)$$

Where S_{ij} are the individual standardised scores for individual i and component$j$; x_{1j},…, x_{15}j are the individual values for variables $x_1 - x_{15}$ included in the PCA analyses; $\sigma_j$are the standard deviations of the predicted scores of each component j, $\hat{\varphi}_{vj}$ is the PCA loading for each of the variables v in each domain j and $\sigma_j$is the standard deviation of each variable v in the combined dataset.

This tool of measuring WE is used in African countries, where WE and gender equality are serious problems. The SWPER and Gender Development Index (GDI) have a high correlation; thus, the SWPER can be a strong GDI attachment. The SWPER is a

> *"cross-cultural standard indicator to track women's empowerment at different levels to guarantee that the most vulnerable groups are not being left behind and to hold governments and policymakers accountable"*(Ewerling et al. 2017: p.1).

This method is used in Onah (2021) research in South-Central Asia to measure WE concerning the socio-economic status and child nutrition.

4.7 Political Dimension of Women´s Empowerment

This dimension describes how political indicators such as political knowledge and political participation measure WE. The building blocks for political participation in a democracy are political knowledge and opinions. In this dimension, also gender gap prevails, especially in rural areas. The women´s degree of political engagement is formed on gender inequalities in the socio-economic context, such as lack of access to formal employment, education and participation in society. The gender gap can be a result of patriarchal norms in different societies and cultures. Political participation for women is needed because pro-woman policy cannot function without women having voices that enter politics (Bleck & Michelitch 2018).

4.7.1 Importance of Women´s Political Empowerment

Women´s Political Empowerment is defined as

> *"a process of increasing capacity for women, leading to greater choice, agency, and participation in societal decision-making"* (Sundström et al. 2017: p.1).

The definition depicts three significant sources of WE in household-decision making: choice, agency and participation. The choice and agency are identical to the definition of (Kabeer 1999), where she also defines WE through resources, agency and achievements. On the other hand, Sundström et al. (2017), political participation must be part of decision-making in WE's political approach. Sundström et al. (2017) focus on Women´s political empowerment, whereas Kabeer (1999) solely focuses on WE. Both Sundström et al. (2017) and Kabeer (1999) characterise WE as a process. WE has to be

measured over time, as a change and as an opposite of disempowerment. WE has to be measured longitudinally.

4.7.2 Women´s Political Empowerment Index (WPEI)

The WPEI was constructed to measure WE through three sub-domain of WPEI: women´s civil liberties (choice), women´s civil society participation (Agency) and women´s political participation (participation). Each of these sub-domains is further divided into several indicators. The dataset is measured in the years 1900-2012 with the participation of 170 countries, and it is estimated to be the most inclusive method of WE accessible. The sub-domain choice contains women's freedom of domestic movement, freedom from forced labour, property rights, and access to justice. The agency involves three indicators: women's freedom of discussion, participation in civil society organisations (CSO), and representation in journalists' ranks. The final sub-domain participation shows the combination of the women´s legislative presence and the political power that is distributed by gender. These sub-domains are measured separately within its parameters such as the Women´s Civil Liberty Index, Women´s civil society participation index and women´s political participation index. The average of the three indexes was taken to construct WPEI (Sundström et al. 2017).

4.7.3 Political Knowledge and Participation as an Indicator of Women´s Empowerment

In the rural areas of developing countries, there is an even higher presence of patriarchy (Khumalo et al. 2015). Men in these areas are seen as the primary decision-makers or representative of the household to the public eye. Therefore women have no say in the household and are prohibited from taking part in the political sphere, have limited access to information about the political situation and have less freedom to move from their village[6]. An example of this happening is the interview with the village's chief in rural Mali:

[6] This leads to not having information from other villages or surrounding cities. Another issues in this area related to political knowledge and participation is the use of modern technologies such as the internet and social media.

"Women are not authorised to participate in our meeting because women have nothing to do with political affairs. Concerning women, we think that every man present at the meeting has the duty to inform his wife. That is why women are not generally present at our meetings" (Bleck & Michelitch 2018: p.5).

This is why the authors intended to analyse women political empowerment through household agency and mobility to leave the village. These two indicators are closely related to political participation and knowledge. This research method was based on a questionnaire and survey of both women and men. The data were processed to achieve political knowledge and participation concerning WE (Bleck & Michelitch 2018).

Similarly, Laszlo et al. (2020) describe the connection between WEE to political participation. Moreover, political participation is linked with employment of women. Intimate Partner Violence (IPV) can be as well as employment linked to political participation. This connection was shown in Heise & Kotsadam (2015) study, where the exposure variables represented various gender-related domains: women political participation. This research also aims to measure how the law recognises women´s political right and prosecutes them.

5 Discussion

WE is one of the most critical goals in the world development agenda. The concepts of WE such as power ("with" and "within"), agency (the process of WE), resources (a precondition for exercising power), and achievement (outcomes or changes attained) are the starting points from Kabeer (1999) framework, where other studies draw their methods for measuring WE.

Table 3 Overview of Women´s empowerment indicators and their relevance towards domains

Women´s empowerment

WE Domain	Indicators	References
Resources	**Future claims, expectations** **Economic Resources (land, finance, working capital)** **Social Resources (obligations, expectations)** **Human Resources (own skill, knowledge and imagination)**	**Kabeer (1999)**

	Mental Health	Yount et al. (2021)
	Sexual Conditions, Male privilege	Habibov et al. (2017)
	Intersectionality	Pradhan et al. (2019)
	Respect among household members	pro-WEAI Malapit et a. (2019)
	Land Tenure Security	Han et al. (2019)
	Demographics (Age-set, Religion, Ethnicity, Marital Status, Education and Employment status) Family Structure	Karimli et al. (2020), Clement et al. (2019), Mahmud et al . (2012), Winther et al. (2019) and Singh et al. (2019), Goldmann&Little (2015), Gressel et al. (2020), Sell&Minot (2018) Karimli et al. (2020)
	Exercise of power of "Non-decision-making."	
	Collective reflection and action	**Kabeer (1999)**
	Individual reflection and action	
	Purposive actions (Bargaining power)	
	Bargaining power related to social norms	Maiorano et al. 2021
	Larger and daily expenditures	Huis et al.(2019)
	Health problems due to drudgery and women's access to extension service (information)	Akter et al. (2017)
	Workload/work balance	pro-WEAI Malapit et al. (2019), WEAI Alkire et al. (2013), A-WEAI, WELI Galiè et al. (2019), Akter et al. (2017)
Agency	Mobility outside the village Political opinions	Bleck& Michelitch (2018).
	Social and cultural norms	Laszlo et al. (2020)
	Visiting important locations	pro-WEAI Malapit et al. (2019)
	Membership in influential groups Leadership	pro-WEAI Malapit et al. (2019)
	The decision about Agricultural production	Colverson et al. (2020), WEAI Alkire et al. (2013), WELI Galiè et al. (2019), Akter et al. (2017)
	"Power with"-Political Participation	Sundström et al. (2017)
	Approval of women's work in ASM (artisanal and small-scale mining)	Holmes&Busia (2020)
	Capabilities, "Being and Doing"	**Kabeer (1999)**
	more income reduced vulnerability and higher levels of food security	Aziz et al. (2020)
	Belief in non-traditional gender norms	Goldman&Little (2015)
	Ability to influence at a political level	Oxfam (2017), Goldmann &Little (2015)
Achievements	Quality of legal services	Oxfam (2017)
	Safety of movement outside the home	Oxfam (2017), Yount et al. (2021)
	Accessibility of legal services	Oxfam (2017)
	Percentage of female microfinance borrowers	Huis et al. (2017)
	Percentage of female borrowers with school-aged children in school,	Huis et al. (2017)

	Percentage of female leadership in MFIs	Huis et al. (2017)
	Average Loan balance for female borrowers	Huis et al. (2017)
	Percentage female staff promotion and attrition	Huis et al. (2017)
Negative Events	Negative effects on intervention	
Agency in the realm of intervention (electricity)	Influence over decisions regarding household electricity access, involvement and influence over the system of supply	Winther et al. (2018)
Overarching Issue	Women´s and Men´s Rights Gender Ideologies Social Positions	Winthers et al. (2018)
Nutrition and Food security	Association with Diet diversity of women and children, Improved household nutrition, Association with Household food security	WELI Galiè et al. (2019), Gupta et al. (2019)
Legal Domain	Women's rights, women's ability to vote, obtain a land title or inherit her husband's property or possessions after he passes, women's knowledge of the legal system	Pratley (2016)
	Disempowerment	Alkire et al. (2013), Gressel et al. (2020), Hazel Malapit et al. (2019), O´Hara&Clement (2018)

Table 3 demonstrates an overview of all the methods that use Kabeer (1999) framework of WE. The domains of Kabeer (1999): Resources, Agency and Achievements match other authors' domains. The names of each method's domains differ, but the domains' indicators are the same or very similar to Kabeer (1999). The designation of the domains is insignificant when their contents are identical. Table 3 was constructed to show the similarities and differences of indicators that measure WE related to the indicators of Kabeer (1999). In Table 3, indicators and domains of Kabeer (1999) are marked bold. The unhighlighted indicators and domains point out what Kabeer (1999) does not measure. Some indicators are unlike because each method aims attention at a particular dimension of WE. This diversification explains why WEAI is measured through indicators that mention agricultural production or why WELI is examined based on diet diversity.

The Resources domain concentrates Kabeer on the material, social and human property and future expectations and claims in the Framework (1999). This domain was gradually extended by other indicators, for instance, mental health (Yount et al. 2021), land tenure security (Han et al. 2019), respect among household members (Alkire et al.

2013) or sexual conditions (Habibov et al. 2017). The indicators of the domain come from various WE dimensions, such as economic or social.

The second domain by Kabeer (1999) addresses decision-making power, the non-decision-making power, collective and individual reflection and action. On top of that, more indicators were added to the Agency such as work balance (Alkire et al. 2013; Akter et al. 2017; Malapit et al. 2019; Galie et al. 2019), political opinions (Bleck & Michelitch 2018) or visiting important locations (Malapit et al. 2019). Similarly to the Resources domain, the indicators also derive from multiple dimensions, primarily agricultural and political.

The last domain, Achievements, focuses on indicator Capabilities such as "being and doing". Other authors continue to add their indicators such as quality of legal services (Oxfam 2017), belief in non-traditional gender norms (Goldmann&Little) or more income reduced security (Aziz et al. 2020). The indicators from the Achievements domain are also part of economic and political dimension of WE. Other domains that are not part of the original framework of Kabeer (1999) are included, such as Negative Events, Overarching Issues or Legal dimension.

However, other authors that are not discussed in the overview do not use Kabeer (1999) as their primary source for measuring WE. They measure WE´s indicators individually without indication of the domains. These include indicators such as land ownership (Mishra&Sam 2016; Doss&Meinzen-Dick et al.2020), use of contraception (Ewerling et al. 2017; Miedema 2018; Rettig et al. 2020), employment (Duflo 2011; Portes et al. 2019; Krumbiegel et al. 2020; Malanksi et al. 2021), microfinance services (Archana 2016; Kapiga et al. 2019; Tanima et al. 2020) and intrahousehold decision-making power (Maligalig et al. 2019; Onah 2021).

6 Conclusion

The thesis is written in the form of a literature review applying a multidimensional approach and investigating four critical dimensions of WE: economic, agricultural, social and political. This approach leads to a clear division of indicators and measuring tools. One of the outcomes of the thesis is that WE can be only measured by selecting suitable indicators that are either part of a multidimensional scheme (WEAI) or

measured individually (use of contraception). These indicators are computed by quantitative methods such as regression model (Krumbiegel et al. 2020), by qualitative methods such as question survey (Huis et al. 2017) or by mixed methods such as (WELI).

Secondly, most of the methods apply the framework of Kabeer (1999) with the domains: Resources, Agency and Achievements. These methods follow the framework and develop it with their indicators and domains. The overview of methods evolves according to each dimension. An example of this evolvement is WEAI in the agricultural dimension; therefore, the overview includes added indicator of decisions about agricultural production. Also these specific indicators cannot be measured in other dimensions: use of contraception is an indicator of the social dimension. Hence the least measured indicators are distinguished on individual dimension. The domain's name is diverse for each author, but the leading indicators from Kabeer (1999) stay the same.

Thirdly, indicators that often overlap are bargaining power, income or employment, demographics and knowledge. All of the methods of WE emphasise agency, decision-making, and control over resources, and they all point out the significance of social and cultural norms. Other authors that do not view WE from the perspective of Kabeer (1999), analyse WE based on individual indicator without domains.

Finally, other dimensions of WE might be valuable for further examination. These dimensions include a psychological and physical dimension that focus on other aspects of WE. Also other indicators could be analysed in greater detail; these include IPV, childbearing and pregnancy or education. Due to the comprehensiveness of WE problematics, a further analysis of WE, the dimensions and indicators, might be needed. The level of maturity of women’s empowerment is different per country or region. Therefore, when trying to apply the WE measurement methods for a particular situation, one should consider the WE aspects specific to the studied geographic area and intersectionality.

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