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Assessment of the Key Indicators and Dimensions of Women Empowerment in Rural Zambia

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Abstract

It is obvious that COVID-19 has caused unprecedented global economic crises. The study forecast stock amidst the negative shock of COVID-19 and also examine the effect of novel COVID-19 on the stock exchange market by employing ARIMA and EGARCH model using daily data of Ghana Stock Exchange Composite Index from October 2017 to February 2021.

Index terms—

1 Introduction

omen empowerment is still a vital concern in global discussions and remains deeply rooted in every society. This is because women empowerment play a critical role in ending extreme poverty (World Bank, 2014) and women's contribution could increase global GDP by US$28 trillion by 2025 (Abney & Laya, 2018). Additionally, women devote substantial percentage of their budget to household benefits such as nutrition, health and education than men (Abney & Laya, 2018;Asaolu et al., 2018; The Hunger Project, 2014) and the entire society benefits when women are employed **??**International Monetary Fund, 2018). Notwithstanding the significant contributions of women towards individuals, families and global economies, they lack behind on so many indicators as compared to men. For example, the 2018 global labour force participation rate for women was 48.5 percent, which is 26.5 percent less than men (International Labour Organization, 2018); and they earn only 77 percent of what men earn even though they work longer hours than men when paid and unpaid work is taken into account (UN Women, 2018).

The United Nations through several initiatives such as Commission on Status of Women -1946, Beijing Declaration and Platform for Action -1995, Millennium Declaration Goal 3-2000 and UN Women -2010 have helped to provide the appropriate framework for women empowerment (UN, 2019) but the problem still lingers especially in rural part of Sub-Saharan Africa (Asaolu et al., 2018). Plethora of studies within this region have confirmed that sexual abuse and violence against women still persist (Asaolu et al, 2018; Peterman et al., 2015; Dako-Gyeke, 2013; Waltermaurer, 2012). In Zambia, women face economic, emotional and physical abuse challenges. Reported cases of sexual, emotional and physical abuse increased from 31.3% in 2014 to 32.3% in 2018 and the number of girls married at the age of 15 years was 9.6% in 214(Zambia Statistic Agency, 2019). Studies have found that women empowerment in Sub-Saharan Africa could be accelerated if women are given the equal financial opportunities and the necessary support to exercise control over important assets such house, income and land (Asaolu et al, 2018; **??**orld Bank, 2017). At the 2017 Boosting Women's Economic Empowerment, it was emphasized that Sustainable Development Goal (SDG) 5, can only be achieved by 2030 if government and stakeholders demonstrate high levels of commitment (UN, 2017). This study is therefore conducted to assess the critical indicators and dimensions for women empowerment in rural Zambia.

2 II.

3 Methodology a) Source of Data

The data used in this study was extracted from the 2018 Zambia Demographic and Health Survey (ZDHS) which accessible via https://dhsprogram.com/ data/dataset/Zambia_Standard-DHS_2018.cfm?flag=1. DHS is conducted primarily to provide guidance for policy decision making and its implementation with emphasis on health indicators such as awareness and use of family planning; breast feeding practices; nutritional status of

children; and early childhood and maternal mortality. The 2018 ZDHS is the sixth round and the data was collected from July 18, 2018 to January 24, 2019; with the aim of providing current update on basic demographic and health indicators (Zambia Statistics Agency and Ministry of Health, 2019). Using two-stage stratified sample design, 545 clusters were selected across the country and 13,625 households were also selected through equal probability systematic sampling. The sample size for individual women was 13,683 but the data was stratified to select 8,170 rural women from the ten geopolitical zones.

4 b) Measurement of Women Empowerment

i. Women Empowerment Several authors have given different definitions of women empowerment. These definitions differ in terms of the context in which women empowerment is being used; being it economic, political or socio-cultural. For example, Kabeer (1999) describes women empowerment as a process where those (women) who were denied certain strategic choices are being given the ability to make those strategic decisions. Similarly, Veneklasen and Miller (2002) posits that women empowerment is the process where women's power to take strategic decision is enhanced. In this study, women empowerment has been contextualized to mean agency and autonomy and it is viewed as a multidimensional process.

5 ii. Measurement

Realistic and good measurement serves as the bedrock for assessing women empowerment. However, researchers have adopted different measurements especially the scaling which makes comparison difficult (Lombardini, Bowman, & Garwood, 2017;Biswas, 2004). For example, Huis, Hansen, Otten and Lensink (2017) measured women empowerment from three dimensional levels, micro-level, meso-level and macrolevel. Lombardini, Bowman, and Garwood, (2017) also adopted three by focusing on individual, relational and environmental levels. Some studies have also adopted four dimensions, economic, socio-cultural, education and health to measure women empowerment (Asaolu et al., 2018;Pratley, 2016;Jennings et al., 2014).

To ensure standardization and comparison majority of studies (Oluwakemi & Amaka, 2020; Ayevbuonwan, Popoola & Adeoli, 2016; The Hunger Project, 2014; Alkire et al., 2013) have now adopted the multi-dimensional poverty index methodology developed by Alkire and Foster (2007;2011). This study adopted the Alkire-Foster (2007) methodology.

6 iii. Alkire-Foster Methodology

This method involves two steps: Identification ( ) k p and aggregation methods. Whiles the identification method reveals who is empowered by considering the factors that leads to the empowerment, the aggregation method generates a set of disempowerment measures ( ) M ? which can be disaggregated to target the most empowered. The aggregation method follows Foster Greer and Thorbecke (1984) traditional measures.

From the above, let Additionally, the cut off for disempowered respondents is represented by 0 j Z > in the j dimension and Z is the specific cut off dimension vector. Let V be the sum of all elements and ( )V µ represent the mean of V .

With a given level of achievement define by matrix y , it is possible to define matrix 0 [0] i j g g with element 0

i j g also defined by0 1 i j g = only if i j y Z < and 0 0 i j g = . This implies that 0 0 i j g = is a n d × matrix with an ij th matrix 1

= when respondent is empowered and for 0 otherwise.

From the aforementioned the column vector c for empowerment count can be constructed with i th entry as0 i c g = .

This expression represent the level of empowerment enjoyed by the respondent.

Following Alkire-Foster (2007) once again, to identify the disempowered respondents, the vector c which represent disempowered count is compared to the cut of k (where 1...k d =

). This implies that p , which is the identification step, can now be defined as( ) 1 k i p y z = ; when i c k < , i c k ? , and ( ) 0 k i p y z = .

For respondents who are disempowered in multiple dimensions, their identification step is defined as{ } : ( ) k k i z i p y z = .

The k p has been labeled as dual cutoff by Alkire-Foster because it tackles within cutoff dimensions ( ) j Z and across cutoff dimensions ( ) k . This enable us to determine respondents who are multi-dimensionally disempowered.

In applying the Alkire-Foster methodology, there is a need to first apply the Head count ratio (;) H H y z = . This is defined asq H n =

. Where H is the percentage of disempowered respondents or the Head count ratio; and (,) q q y z = represent the number of Volume XXII Issue VII Version I

7 ( )

According to Alkire-Foster (2007), the percentage of disempowered respondents ( ) H should be adjusted by the respondent's average number of achievements. By implication, ck is defined as the disempowered censored vector so that if( ) i c k < then ( ) 0 i c k = and if i c k ? then ( ) i i c k c = .

Per the k p dual cutoff method, ( ) c k number of categories will always represent one of the disempowered respondents. If this assumption holds, respondents experience within the shared dimensions will be ( )i c k d and ( ) A c k qd ? =

will be the average disempowered shared dimensions across the respondents.

If we put emphasis on the disempowered, the final head count ratio which satisfies the properties of decomposability can be captured as 0 M HA = . Where 0 (;) M y z is the adjusted head count ratio and it satisfies dimensional monotonicity. This is because with any additional dimension, A increases when a rural respondent is disempowered.

8 iv. Computation of Women Empowerment Index (WEI)

The WEI computation was done by following Alkire et al., **??**2013). WEI is a composite index used to measure the progress of women empowerment in a multidimensional context (The Hunger Project, 2014); and it compares women achievement as a factor of men's achievement. WEI comprises of five key domains (5DE): Agency, Income, Leadership, Resources, and Time.

WEI has two major components: Gender Parity Ratio (GPR) and Women Achievement Ratio (WAR). The GPR is a measure that compares women's achievements to men within the same community while WAR measures women's achievements based on some defined goals and targets (Alkire et al., 2013).

As indicated earlier, scoring is major challenge in comparing women empowerment across different communities and countries. With WEI, the score is computed at the aggregate level to assess the overall level of women empowerment. The five domains (5DE) used in the computation is assigned equal weights. Each domain is assess by using two to three data points. For workload, type of cooking fuel was used as an indicator as well as division of household chores.

9 10

Source: Author's Own Construct (July 2020) with adaptation of weights from Alkire et al., (2013) According to the Hunger Project (2014), the overall WEI can be computed as: HGPi is the percentage of gender parity inadequate households;

IGPi is the average empowerment gap between women and men living in the household that lack gender parity. The overall WEI is therefore: 0.6(5DE) + 0.4(GPI)

Although the overall WEI is 100(Hunger Project, 2014), 80 was used as the threshold for this study. This implies that women with at least 80 score indicates higher degree of women empowerment within the community.

10 v. Explanation of the computation of the five domains

The five domains (5DE); Agency, Income, leadership, Resources and Time/Workload was estimated by using 11 indicators.

11 a. Agency

This was computed by using three indicators: decision on visit to hospital; decision on household purchases; and perception on violence. The indicators were coded as 0 and 1 with 1 representing sole or joint decision on particular indicator and 0 for otherwise. A respondent who partake in sole or joint decision (i.e., value of 1) is considered empowered. b. Income Income was assessed with two indicators: women ownership to a business and decision on control of earnings. Similarly, this domain was coded as 1 and 0, where 1 shows sole or joint decision and 0 otherwise. A respondent who partake in sole or joint decision (i.e., value of 1) is considered empowered.

12 c. Leadership d. Resources

Literacy rate and minimum number of prenatal care visit was the two indicators used to estimate women's resources. A value of 1 was used to represent respondent's ability to read or write and 0 for otherwise. The same value of 1 was used to indicate yes for respondents who cared about their health and went for prenatal care visit and 0 for otherwise. For each indicator, a respondent is empowered with a value of 1 and 0 for otherwise.

13 e. Time/workload

The type of cooking fuel and time spent to access water were used as the two indicators for this domain. Women who used traditional cooking fuel like wood are likely to spend more time cooking hence the code 0 and 1 for improved cooking fuel like gas or electric. Respondents who spend less than 30 minutes to access water were coded as 1 and 0 for otherwise. For each indicator, a respondent is empowered with a value of 1 and 0 for otherwise.

14 c) Empirical Model

In order to assess the determinants of women empowerment in this study, the probit and logit model was adopted.

The general regression model is given by: ( ) (, ,, , , **Re , , , , Re)**? ? ? ? ? ? ? ? ? ? ? ? ? ? = = =+ + + + + + + + + + + + + ? ? ? ? ? = ? ?

The specific logit model is:( ) ( ) 0? ? ? ? ? ? ? ? ? ? ? ? ? ? = = = + + + + + + + + + + + + + ? ? ? ? ? = ? ?

The variables are explained in Table 2 below: III.

15 Results and Discussion

a) Descriptive Statistics Table 1 presets the descriptive statistics for the indicators of women empowerment. Frequencies and percentages were used in the study. On decision to health care, the pooled results showed that 76.23 percent of women take such decision with their spouse. Only 23 percent of their spouses take the decision alone. This result was consistent across all the ten regions in rural Zambia. The implication is that women in rural Zambia are empowered when it comes to decision on their health care. This confirms Habtamu (2014) who found that women play a vital role on decision of their healthcare. Similarly, 62.81 percent of decision on large household purchases was taken jointly by women and their spouses. This is in contrast with Obayelu and Chime (2020) who found that women have less autonomy on decision on large household purchases. The findings was consistent across all the ten region with the exception of Eastern region where 51.9 percent of decision on large household purchases are taken by only husband/partners. Women within this region have less autonomy on this indicator hence confirms Obayelu and Chime (2020) results. Apart from Luapula, women across the other nine regions frowned on domestic violence against them. From the pooled results, 65.08 percent didn't justify beating based on going out without telling husband; 60.73 percent didn't justify beating based on neglect of child; 58.30 percent on argument with husband; 60.13 percent on failure to have sex with husband; and 69.89 percent didn't justify beating based on burning food. Generally, it is expected that majority of women wont justify any form of domestic violence since it infringes pain on them and also have health consequences.

Majority (72.66%) of women operated their own business and only 27.34 percent operated business for someone else. Moreover, 72.72 percent of women jointly took decision on earning with their spouse and 24.28 percent was taken solely by their spouses. Since only 24.28 percent of women spouses takes sole decision on earning, women in Zambia play a vital role in decision on their earning. This is consistent with Obayelu and Chime (2020) who reported that 79 percent of women make join decision on earning with their spouses in rural Nigeria. Additionally, 55.82 percent of the rural women in Furthermore, 52.55 percent of rural women didn't discuss family planning with health workers. On literacy, 45.42 percent of the rural women can't read at all; 14.17 percent can read part of a sentence and 40.42 percent can read a whole sentence. Again, 66.47 percent of the women have visited health care facility in the last 12 months; and majority (84.41%) of women in rural Zambia use less than 30 minutes to fetch water. Also, almost all the rural women (97.34%) rely on wood and charcoal as a type of cooking fuel.

16 b) Estimates for Women Empowerment

As presented in section 2.2.4, the computation of women empowerment index in this study is based on the Alkire-Foster (2007) methodology. Women empowerment in this study is measured by using five domains: Agency, Income, Resources, Leadership and Time/Workload. The aggregates of these domains across the various indicators was used to compute the multidimensional women empowerment index. Following Alkire et al (2013;2011) and Obayelu and Chime (2020), five cut offs were used in this study. Alkire et al (2013) suggested that a respondent's level of deprivation should at least be below a third of the total number of indicators to be considered as poor. They also made a distinction between vulnerable poor and severe poverty by using a cutoff of 20 percent and 50 percent respectively. Based on this the cutoffs for this study is: 20%, 33%, 50%, 66% and 80%. From table 2 below, at K=1, rural women multidimensional disempowerment (0 H) is 92.6 percent and the intensity of disempowerment is 36.3 percent. The multidimensional disempowerment decreased to 48.9 percent at K=2 and a further decrease to 36.3 percent at K=3. At K=4 and K=5, the multidimensional disempowerment was 1.3 percent and 1 percent respectively. This indicates that there is an inverse relationship between the multidimensional disempowerment index and the cutoff (k

17 i. Relative contribution of dimensions to women disempowerment

Out of the five dimensions, time/workload contributed the highest percentage to women's disempowerment at K=1 (31.2%), K=2 (27.3%) and K=3 (26.4%). At K=4, income contributed the highest percent of 22.9% and at the final cutoff (K=5), agency, income and time had the same share of contribution towards women's disempowerment (23.5%). The findings is in contrast with Popoola and Adeoti (2016) who found resource and education as the highest contributor to women disempowerment at K=1 and K=2 respectively.

18 c) Women's disempowerment by region and gender

Out of the ten regions, Eastern contributed the highest percentage (17.9%) to women's disempower-ment, followed by Southern (12.3%) and Muchinga (12.0%). The least contributor to women's disempowerment was North West (5.1%). With respect to gender, men's contribution to women's disempowerment was very high (91.7%). Only 8.3 percent of women contribute to women disempowerment. Obayelu and Chime, (2020) and Popoola and Adeoti (2016) also had similar results in rural Nigeria.

19 d) Women empowerment and disempowerment index based on socio-economic characteristics

Women within the age bracket of 15-20 years are disempowered than those with 21-30 years. Similarly, those with 40-49 years are empowered than those within 31-40 years. Cumulatively, women within the age bracket of 21-40 years had the highest level of empowerment (71.1%). This category of women falls with the active population group and also working age hence are more likely to be empowered than their counterparts. The findings is in line with Oriana (2014) results. Secondary (14.9%) and higher (2.1%) forms of education contributed the least to women disempowerment. Primary education was the highest contributor to women disempowerment. Abaidoo (2020) opined that higher forms education improves human capital thereby reducing level of poverty. Consequently, women with higher level of education are more likely to have the requisite skills and to be gainfully employed for better income. Married women are more empowered than unmarried women. Additionally, poorest and poorer women contributes 34.3 percent and 32.7 percent respectively to women disempowerment.

Furthermore, households with household size within 5-8 members had the highest level (60.1%) of women empowerment. Pit/latrine as a type of toilet facility was the highest contributor to women disempowerment (77.7%); followed by no facility (20.7%). Majority of the empowered women (52.8%) were into farmers, followed by sales (26.3%) and professionals (6.9%). This implies that women in rural areas are more empowered when they engage in the primary activity (agriculture) that yields income within their community. The least contributor to women empowerment was clerical (0.1%). This is line with Obayelu and Chime, (2020) who reported similar results in rural Nigeria as well as. They found that clerical contribute only 0.12 percent towards women empowerment in rural Nigeria. Oriana (2014) also had similar results.

Rural women with river/dam/spring/rain as source of drinking water contributed 58.7 percent to women empowerment, followed by those with tube well or borehole (31.0%) and pipe borne water (10.2%). The least contributor was tanker (0.1%). 7. The results also include the marginal effect for the probit and logit models. All the three models predicted significant negative relationship between women empowerment and women's education in years. From the OLS model, any additional year of education will reduce women empowerment by 19.62%. The probit and logit models revealed with any additional year of education the probability of women empowerment reduces by 53.3 percent and 86.6 percent units respectively. This not consistent with theory as one would expect high form of education to improve women's skills thereby improving their level of empowerment. Obayelu and Chime, (2020), attributed this to traditional African belief when men continue to take major decisions irrespective of the woman's years of education. Marital status had a positive relationship with women empowerment. From the probit model married women are 82.37 percent more likely to be empowered than the unmarried counterparts. The findings is in contrast with Obayelu and Chime (2020), who found a negative significant relationship between marital status and women empowerment. Women's age on the other hand had an inverse significant relationship with women empowerment. The marginal effect from the probit and logit models showed that any additional age obtained by a woman is likely to reduce her level of empowerment by 0.0066 units. This implies that younger women are more empowered that the aged. Whiles the result confirms Obayelu and Chime (2020) findings it conflicts with Popoola and Adeoti (2016) who had a positive relationship between age and women empowerment in Nigeria. From the logit model, women who fall within wealth index of richer are 33.26 percent less likely to be empowered and those within the richest index are 59.16 percent less likely to be empowered. Women who reside in rural Copperbelt are 51.30% (probit) and 83.92% (logit) more likely to be empowered than their counterparts in other regions. Those living in rural Southern Zambia are 55.55 percent (probit) and 90.57 percent (logit) more likely to be empowered than the others from the other regions. In the rural North-Western part of Zambia, the logit results showed that women in those areas are 46.13 percent less likely to be empowered.

20 IV. Conclusion and Recommendations

The study was conducted primarily to assess the indicators and dimensions of women empowerment in rural Zambia. Findings from the study showed that majority of women make joint decision on their health and larger purchases with their spouse but this is not the case in the Eastern part of rural Zambia. With the exception of Luapula region, majority of women didn't justify any form of violence.

Moreover, a higher percentage of rural women in Zambia are self-employed. This is a good indicator for women economic empowerment and decision on earning. However, majority of them can't read all; do not own a house and use charcoal and wood as cooking fuel. As a result of this, the study revealed that workload/time is the highest contributor to women disempowerment, followed by resources. In terms of gender, men contribute a very high percentage to women disempowerment.

Furthermore, the results from the probit and logit models revealed that women from Copperbelt, Southern and western rural region of Zambia are more likely to be empowered than their counterparts from other regions. Those residing in rural Northern Western were found be less likely to be empowered. The results showed that whiles marital status increase the probability of being empowered, women's age and level of education reduces the probability of rural women in Zambia being empowered.

From the findings, it is evident that rural women in Zambia are disempowered in terms of workload/time and resources. It is therefore recommended that nonformal education should be organized for the rural women with strict monitoring. Also, stakeholders should ensure that formal education for the young ladies in the rural Zambia is intensified. These interventions should target women who can't read at all and more specifically those living in North Western and Eastern regions of rural Zambia.

Additionally, effort should be made to reduce the domestic household chores of rural women. This can be achieved by organizing sensitization programs for both men and women on the need to support each other on household chores. Similarly, intensive sensitization programs should be conducted for the rural women to educate them on their rights and significance of women empowerment. [1] [2]

1

#	Domains		Indicators	Weights
		?	Decision making to hospital by women was used as a proxy against men.	7
1	Agency	?	Decision making on large household purchases by women was used as proxy against men.	7 6
		?	Perception of violence against women	
2	Income	?	With ownership over business/occupation, women's personal business, works for family and other people was used as indicators. Financial control was assessed by using control over earnings/income.	10 10
3	Leadership			10 10
4	Resources	?	Minimum number of prenatal care visits Literacy rate	10 10
5	Time/Workload	?		

[Note: ?Women membership in community discussion/groups was assessed by using ownership of house since such women will be members of landlord associations.?Confidence of being comfortable speaking in public was assessed with women's ability discuss family planning with health workers.? Time spent to access to water (source of water) ?]

Figure 1: Table 1 :

[1] (58.30) © 2022 Global Journals
[2] Year 2022 © 2022 Global Journals E

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emp f W = HH f Sex W W W W edu a

The specific probit model is:

Figure 2:

2

Variables	Definition
Wemp	This is the dependent variable and it represent Women empowerment;
	Empowerment = 1 and 0 if otherwise
Independent	variables
SexHH	Sex of head of household; 1=female and 0 if otherwise
Wedu	Woman's level of education measured in years
Wage	Age of women in years
Wms	Marital status for women; 1 = married and 0 if otherwise
Wocc	Occupation for women; 1 = employed and 0 if otherwise
Rel	Religious background: 1 = Christianity and 0 if otherwise
	Wealth index; this was categorized into poorest, poorer, middle richer.
	Poorest: 1 = poorest and 0 if otherwise
Weli	poorer: 1 = poorer and 0 if otherwise
	middle: 1 = middle and 0 if otherwise
	richer: 1 = richer and 0 if otherwise
Hage	Husband's age measured in years
Hedu	Husband's level of education in years
Reg	Region; this was based on the ten region

Source: Author's Own Construct (July 2020)

Figure 3: Table 2 :

1

Region	Central	Copperbel	Eastern	Luapula	Lusaka	Muchinga	Northern	Indicators	Agency/husband/partner decision on health care
Pooled									1183 (23.77)
Southern									175 (31.42)
Western									115 (28.82)
North West									34 (9.09)

Figure 4: Table 1 :

2

Disempowerment cut off (k)	Multidimensional disempowerment index (0 M)	Multidimensional disempowerment headcounts (0 H)	Intensity disempowerment (A)	Empowerment index (0 1 M ?)
1	0.347	0.926	0.363	0.653
2	0.224	0.489	0.458	0.776
3	0.178	0.363	0.49	0.822
4	0.010	0.013	0.722	0.990
5	0.001	0.001	0.001	0.999

Source: Authors Own Construct (July 2020)

Figure 5: Table 2 :

3

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Dimensions	Agency (percent)	Income (percent)	Resources (percent)	Leadership (percent)	Time (percentage)
K=1	0.154	0.144	0.246	0.144	0.312
K=2	0.188	0.167	0.227	0.145	0.273
K=3	0.181	0.179	0.231	0.145	0.264
K=4	0.196	0.236	0.229	0.132	0.208
K=5	0.235	0.235	0.176	0.118	0.235

Source: Authors Own Construct (July 2020)

Figure 6: Table 3 :

4

	Absolute contribution					Relative contribution		
Region	M 0	H 0	A	1 M ? 0	M 0	H 0	A	1 M
Central	0.307	0.889	0.345	0.693	0.088	0.092	0.957	0.9
Copperbel	0.344	0.943	0.365	0.656	0.072	0.071	1.014	0.9
Eastern	0.335	0.915	0.366	0.665	0.180	0.179	1.006	0.8
Luapula	0.350	0.948	0.369	0.650	0.134	0.132	1.015	0.8
Lusaka	0.283	0.894	0.317	0.717	0.048	0.055	0.873	0.9
Muchinga	0.340	0.916	0.371	0.660	0.120	0.118	1.017	0.8
Northern	0.327	0.943	0.347	0.673	0.092	0.096	0.958	0.9
North West	0.297	0.921	0.322	0.703	0.045	0.051	0.882	0.9
Southern	0.358	0.960	0.373	0.642	0.126	0.123	1.024	0.8
Western	0.382	0.921	0.415	0.618	0.096	0.084	1.143	0.9

Source: Authors Own Construct (July 2020)

Figure 7: Table 4 :

5

Gender	M	0	H	0	A	1 M ?	0
absolute contribution							
Men	0.226		0.493		0.458	0.774	
Women	0.199		0.422		0.472	0.801	
Relative contribution							
Men	0.918		0.917		1.001	0.082	
Women	0.082		0.083		0.988	0.918	
Source: Authors Own Construct (July 2020)							

Figure 8: Table 5 :

6

Variables	Empowered	Disempowered	Total
Women's age (in years)			
15-20 years	49 (6.4%)	74 (10.1%)	123 (8.2%)
21-30 years	274 (35.8%)	260 (35.6%)	534 (35.7%)
31-40 years	270 (35.3%)	261 (35.7%)	531 (35.5%)
40-49years	172 (22.5%)	136 (18.6%)	308 (20.6%)
Women's highest education level			
No education	50 (6.5%)	99 (13.5%)	149 (10.0%)
primary	441 (57.6%)	508 (69.5%)	949 (63.4%)
secondary	221 (28.9%)	109 (14.9%)	330 (22.1%)
higher	53 (6.9%)	15 (2.1%)	68 (4.5%)
Marital status unmarried	5 (0.7%)	1 (0.1%)	6 (0.4%)
married	(99.3%)	(99.9%)	(99.6%)
Wealth Index	760	730	1490
poorest	(27.3%)	(34.3%)	(30.7%)
poorer	209	251	460
middle	(27.7%)	(32.7%)	(30.1%)
richer	212	239	451
richest	(27.7%)	(32.7%)	(30.1%)
Household size	194	172	366
	(25.4%)	(23.5%)	(24.5%)
	71	44	115
	(9.3%)	(6.0%)	(7.7%)
	79	25 (3.4%)	104
	(10.3%)		(7.0%)
1-4	180 (23.5%)	187 (25.6%)	367 (24.5%)
5-8	460 (60.1%)	419 (57.3%)	879 (58.8%)
9-12	113 (14.8%)	103 (14.1%)	216 (14.4%)
above 12	12 (1.6%)	22 (3.0%)	34 (2.3%)
Type of toilet facilities			
flushed/water system	47 (6.1%)	12 (1.6%)	59 (3.9%)
pit/latrine	627 (82.0%)	568 (77.7%)	1195 (79.9%)
No facility/bush	91 (11.9%)	151 (20.7%)	242 (16.2%)
Women's occupation			
professional/technical/managerial	53 (6.9%)	14 (1.9%)	67 (4.5%)
Clerical	1 (0.1%)	1 (0.1%)	2 (0.1%)
Sales	201 (26.3%)	157 (21.5%)	358 (23.9%)
farmer	404 (52.8%)	460 (62.9%)	864 (57.8%)
services	23 (3.0%)	29 (4.0%)	52 (3.5%)
skilled manual	13 (1.7%)	8 (1.1%)	21 (1.4%)
unskilled manual	70 (9.2%)	61 (8.3%)	131 (8.8%)
Source of drinking water			
pipe-borne water	78 (10.2%)	43 (5.9%)	121 (8.1%)
tube well or borehole	237 (31.0%)	233 (31.9%)	470 (31.4%)
river/dam/spring/rain	449 (58.7%)	455 (62.2%)	904 (60.4%)
Tanker/cart with tank	1 (0.1%)	0 (0.0%)	1 (0.1%)
Source: Authors Own Construct (July, 2020)			

Figure 9: Table 6 :

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Variables	OLS	Probit	dy/dx	logit	dy/dx
Women's education in years	-0.1962 (0.0000)***	-0.5333 (0.0000)***	-0.1987 (0.0000)***	-0.8663 (0.0000)***	-0.1993 (0.0000)***
Women's marital status	0.2943 (0.181)*	0.8237 (0.201)	0.3070 (0.201)	1.3727 (0.227)	0.3158 (0.226)
Women's age	-0.0068 (0.0037)**	-0.0177 (0.040)**	-0.0066 (0.039)**	-0.0290 (0.039)**	-0.0066 (0.038)**
Wealth index					
Poorer	0.0083 (0.815)	0.0232 (0.803)	0.0088 (0.803)	0.0398 (0.791)	0.0093 (0.791)
Middle	-0.0359 (0.362)	-0.0913 (0.379)	-0.0345 (0.379)	-0.1450 (0.387)	-0.0339 (0.387)
Richer	-0.0782 (0.176)*	-0.2056 (0.183)*	-0.0774 (0.181)*	-0.3326 (0.188)*	-0.0774 (0.185)*
Richest	-0.1176 (0.067)**	-0.3671 (0.039)**	-0.1364 (0.035)**	-0.5916 (0.046)**	-0.1355 (0.04)**
Household size	-0.0056 (0.787)	-0.0136 (0.806)	-0.0050 (0.806)	-0.0245 (0.787)	-0.0056 (0.787)
Husband's years of education	-0.0001 (0.926)	-0.0004 (0.922)	-0.0001 (0.922)	-0.0006 (0.927)	-0.0001 (0.927)
Husband's age	0.0022 (0.418)	0.0057 (0.437)	0.0021 (0.437)	0.0095 (0.424)	0.0022 (0.424)
Region					
copperbelt	0.1927 (0.003)***	0.5130 (0.003)***	0.1932 (0.0020***	0.8392 (0.003)***	0.1951 (0.002)***
Eastern	0.0433 (0.422)	0.1084 (0.045)	0.0409 (0.449)	0.1835 (0.430)	0.0428 (0.429)
Luapula	0.0281 (0.627)	0.0734 (0.633)	0.0276 (0.633)	0.1199 (0.632)	0.0279 (0.632)
Lusaka	-0.0666 (0.336)	-0.2115 (0.271)	-0.0772 (0.266)	-0.3264 (0.303)	-0.0733 (0.296)
muchinga	0.0281 (0.623)	0.0717 (0.636)	0.0270 (0.636)	0.1226 (0.617)	0.0285 (0.617)
Northern	0.0131 (0.828)	0.0345 (0.829)	0.0129 (0.829)	0.0553 (0.832)	0.0128 (0.832)
north western	-0.0995 (0.172)*	-0.2959 (0.140)*	-0.1065 (0.131)*	-0.4613 (0.160)*	-0.1020 (0.149)*
Southern	0.2099	0.5555	0.2086	0.9057	0.2098

Figure 10: Table 7 :

[Note: 16( )]

Figure 11:

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