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Gendered Differences in Household Engagement in Non-Farm Business Operations and Implications on Household Welfare: A Case of Rural and Urban Malawi

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Abstract: Mainstreaming gender issues in a demographically divided setting remains a critical component in policy frameworks and project designs. The focus of this study revolves around male- and female-headed households' engagement in business operations, with an extended effect on household welfare. This study uses Malawi's Integrated Household Survey 5, and answers two research questions: Are there any determinants of household engagement in non-farm businesses in rural and urban areas of Malawi? And is there any impact of gender differentials in household engagements in non-farm business operations on household welfare in rural and urban areas of Malawi? This study notes that male-managed non-farm SMEs had better profits compared with their female counterparts, as described by the Probit and the Oaxaca two-fold decomposition models. Mediation analysis was later used to establish the impact of the gender differentials using profits as the mediating variable. In general, females were found to be better off, but the benefits were insignificant in reducing the general rural–urban gap. This study recommends the provision of support towards credit structures for rural households and women-headed households; improved financial and business literacy for increased engagement in business operations and reduced poverty; and support towards advocacy of gender inclusion in economic empowerment approaches.

Keywords: gender differentials; business enterprises; rural–urban divide; Oaxaca two-fold decomposition; Malawi



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1. Introduction

In Malawi, more than 80% of the population depends on agriculture for a livelihood. Despite such being the case, women make up a higher proportion of the agricultural sector, even though they are regarded as vulnerable in the communities. Overall, 28% of the country's Gross Domestic Product (GDP) is contributed by the agricultural sector (Government of Malawi 2018). The over-reliance on agriculture has, however, escalated poverty levels in the country as most farmers rely on rain-fed agriculture, which, through climate change, has presented huge risks and uncertainties (AGRA 2017). According to UNCTAD (2023), 70% of the total population in Malawi consumes below the poverty line (USD 2.15/day). Moreover, only 20% of the population accounts for 46% of the national income. This has prompted the need to diversify income sources, especially participation in non-farm business operations like petty trading, skills, handwork, and others.

Household engagement in non-farm enterprises in rural areas of Sub-Saharan Africa (SSA) is rising, with over 42% of the rural households in SSA venturing into non-farm enterprises (Nagler and Naudé 2014). Further estimates posit that around 40% to 50% of the household's generated income is sourced from non-farm enterprises (Aziz et al. 2021). With an increase in population in most SSA countries, there has been a considerable

decline in agricultural employment and an elevation in demand for value-added products, leading to growth in the non-farm economy and an increase in human resources, mostly in urban areas.

Malawi has seen a surge in the participation of non-farm business operations ([Government of Malawi 2018](#)). However, variations still exist as households in rural areas still lack the resources to meaningfully venture into non-farm business enterprises. The [World Bank \(2023\)](#) highlights that households in rural areas lack the resources to venture into businesses as compared with those in urban areas. The problem is exacerbated by increasing gender disparities in the region, evidenced by the recent measured share of women in wage employment in non-agricultural activities estimated at about 30% in 2020 ([World Bank 2023](#)). With a gender index of 68.2%, 0.02 percentage points below the global index, SSA is ranked 110th out of 142 countries in the Global Gender Gap Index ([WEF 2023](#)). In Malawi, emphasizing gender equality is a critical issue that is also related to the Malawi Vision 2063. With the Human Development Index (HDI) value of females at 0.493, it differs from that of males with a value of 0.5. Malawi has a low Global Gender Gap Index, with women having a low score of participation in economic opportunities ([UNDP 2018](#)).

Scholars across the globe have shown much interest in women's engagement in economic activities to extensively understand its impact on household food and nutrition security ([ADB 2012](#); [Duflo 2012](#); [Malapit and Quisumbing 2015](#); [Annan et al. 2021](#); [Lufuke and Tian 2023](#)). These studies have, however, mainly focused on household engagement in agriculture when measuring women's empowerment by using the Women's Empowerment in Agriculture Index (WEAI) ([Aziz et al. 2021](#); [Sell and Minot 2018](#)). Furthermore, initiatives and programs aimed at improving women's empowerment in SSA and Malawi have largely focused on improving agricultural income whilst overlooking other household income sources where women's involvement in decision-making would make a significant impact on household welfare. With on-farm initiatives highly oriented towards food security in Malawi, there exists a need to consider non-farm enterprises and their potential in poverty reduction policies.

Outside the agricultural sector, ([Hou 2011](#); [Schmidt 2012](#); [Arulampalam et al. 2015](#); [Sariyev et al. 2020](#); [Annan et al. 2021](#); [B nedicte 2023](#)) studies have consistently established that when a woman is involved in decision-making processes within her household, the household livelihood status and reduced intra-household differences improve. However, the common gap in the literature is the rural–urban divide, which again lacks an assessment of how male- and female-headed households engage in non-farm enterprises. In most Least Developed Countries (LDCs), where urbanization and rural–urban migration have taken over, women have found themselves actively engaged in decision-making duties in the absence of their husbands and elder children ([Lepine 2013](#)). Furthermore, the rural–urban inequality continues to worsen, with the ratio of rural to urban income per capita falling from 0.56 to 0.37 over the period of 2004 to 2017. Similarly, within the same time frame, the Gini coefficient indicates a gradual increase from 0.45 to 0.59 ([Cornia et al. 2017](#)), a clear indication that the gender differential is closely linked to the social–demographic environment in which women reside ([Osamor and Grady 2018](#)).

It is thus without doubt that women are at the forefront of matters to do with non-income household affairs like homemaking and food preparation, a situation that affects the general well-being of the entire household ([Kheira 2022](#)). Against this background, it is, therefore, safe to suggest that economic empowerment within the same scope of women's engagement has the potential to improve the livelihood of households, either through the agricultural sector or non-farm business enterprises ([Sell and Minot 2018](#); [World Bank 2023](#)). It should, however, also be clearly stated that gender differentials and the rural–urban divide are the sources of income inequality. But, even if this is the case, the scope of most cited studies has considered the coupled effect only as an aftermath. This study, therefore, addresses this gap by providing (i) the determinants of gender differentials in non-farm business engagement in rural and urban areas of Malawi and (ii) the impact of gender

differentials in household engagement in non-farm business operations on household welfare in rural and urban areas of Malawi.

2. Methodology

2.1. Theoretical Framework

2.1.1. Unitary Decision-Making Model

The term “unitary” refers to a model of household behavior in which all members of the household are assumed to share the same preferences and make decisions together as a single unit. The definition is mostly critical of the “breadwinner aspect”, where only one household member assumes the bargaining power in harmonizing the general household needs and preferences. This theory has been widely adopted in social sciences, but there is a growing evidence that it may not always be accurate. The critics mostly overflow on the resource allocation aspect, where the possibility of pooling is less likely, unless there is assertive mating (similar characteristics in marriage partner selection) or market-based attributes of bartering. However, under the given assumption of resource pooling, it is assumed that all the household members have a contributory effect towards the household resources—overlooking the dependency side of other household members. [Becker \(1973\)](#) offers a perspective towards the dependency aspect within households through the “rotten kid theorem”, whereby the rest of the household members’ utility is a contributory component of the household head utility function.

The “rotten kid theorem” is the applicability side of unitary decision-making in understanding gender differentials, which originates from the isolation of the decision-making power. In furthering the understanding, [Bergstrom \(1989\)](#) illustrates these concepts as follows:

$$U_{hh=1,2}(u_{hh}(x_{hh}, y), u_{hm}(x_{hm}, y)) \quad (1)$$

where $U_{hh=1,2}$ is the household head utility function with 1, 2 as the gender differentials (male and females). The utility function is a collective of utility functions of the household head (u_{hh}) and other household members (u_{hm}) with respect to household consumption (x_{hh}, x_{hm}) and effort towards economic activity (y), in this case, SMEs.

$u_{hh} > u_{hm}$ corresponds to the privileges of a household head, then $U_{hh=1,2}(u_{hh}, u_{hm}) = u_{hh}u_{hm}^a$ for $0 < a < 1$. On the same note, the model assumes a negative correlation in the level of input dedicated to economic endeavors within a household, with the primary household head displaying altruistic tendencies while the remaining household members are often influenced and motivated by the efforts of the household head. This is specified as follows:

$$u_{hh}(x_{hh}, y) = x_{hh}(1 + y) \text{ and } u_{hm}(x_{hm}, y) = x_{hm}e^{-ay} \quad (2)$$

Combining Equations (1) and (2), the household head maximizes the utility as follows:

$$u_{hh}(x_{hh}, y) = x_{hh}(1 + y) \text{ and } u_{hm}(x_{hm}, y) = x_{hm}e^{-ay} \quad (3)$$

Subject to

$$x_{hh} + x_{hm} = I \quad (4)$$

where the aggregated consumption ($x_{hh} + x_{hm}$) is based on the budget line (I), which is mostly proxied as household welfare. Substituting Equations (2) into (4), the utility possibility frontier is specified as follows:

$$\frac{u_{hh}}{1 + y} + u_{hm}e^{-ay} = I \quad (5)$$

where changes in efforts placed towards the SMEs affect the utility functions. Similarly, the effect is viewed towards the household welfare in general.

2.1.2. The Feminist Economic Theory

The feminist economic theory discusses a concept in research that explores the relationship between gender and economics and aims to reveal the influence of gender bias on economic concepts. In the context of economic development and gender equity, women are regularly neglected, and their contributions are unacknowledged for a long time. This is contrary to the fundamental value of economic development, which focuses on the major targets of human capital and human factors that can improve living standards to achieve the goal of equal opportunity. Gender equity issues should be identified as key points and mainstreamed in economic development policies and strategies from the global perspective (Kabeer 2005). In addition, women's empowerment is considered to be a key strategy in the economic development process as women acquire productive resources equally to men and make independent decisions on resource utilization, contributing to economic goals with inclusive development and social justice in developing countries (Drolet 2010).

The effectiveness of women's economic activities tends to power women's economic status, household well-being, and social relations. Women who have access to financial resources join economic activities by operating small and medium enterprises (SMEs); this allows the empowerment of women to be financially sustainable, with the ability to make purchases and the right to own financial assets (Hermes 2014). Women who are empowered and are engaged in SMEs show their economic contribution and the impacts of empowerment through improvement in health care access, purchasing rights, and sharing decision-making on family size (Khandker 2005). Efforts to advance gender equity through the effective empowerment of women also reduce the number of poor women and help the achievement of socio-economic sustainable development in developing countries (Hermes 2014).

2.2. Conceptual Definitions

This study is based on three key concepts: gendered differences; household engagement in non-farm business operations; and household welfare. The inter-relationships between household engagement and gender differences originate from the household head, which is the entry point of the surveys. Similarly, in the Malawian context, a household head is the decision-maker or the leading member of the household in decision-making. In understanding gender differentials, this is simply the male–female disaggregation in business operations management and decision-making.

Household welfare is one of the most diversified concepts in definition. According to Hentschel and Lanjouw (2000), welfare measures should reflect the total utility derived from all goods and services consumed. However, measuring utility in its literal context is not feasible because of its subjective characteristics. Instead, the money metric approach determined by households' total expenditure is used to compare welfare levels across households or individuals. However, this definition is limited in identifying the extent of welfare, especially when establishing correlation–causality effects, a feature that drives the study to extend welfare definition towards poverty lines—a metric that explains whether a household consumes above or below USD 2.15/day. To put it into context, the determination of welfare through poverty lines is a political–social decision that determines the dependency attributes of households (Goedhart et al. 1977).

2.3. Analytical Framework

2.3.1. Instrumental Variable Probit Model

Through a review of determinants of household engagement in non-farm businesses, a Probit model was used because of the binary nature of engagement in non-farm enterprises (Gujarati 2009). According to Wooldridge (2015), a Probit model can be illustrated as follows:

$$G_{SME_i}^* = M_i\beta_i + z'_{ij}\delta_i + \mu_i = x'_i\varphi_i + \varepsilon_i \Big| L_{i,j=1,2} \quad (6)$$

$$G_{SME_i} = \begin{cases} 1 & \text{if } G_{SME_i}^* > 0 \\ 0 & \text{if } G_{SME_i}^* \leq 0 \end{cases} \quad (7)$$

where $G_{SME_i}^*$ is a latent variable for the gendered differential in the non-farm enterprise. This focuses on who manages the enterprise, whether male or female. L_i is the dummy for urban and rural residence; z'_{ij} is the vector for both instrument variables, the number of households with mobile phones within an enumeration area. There are inconsistencies in finding a good instrument for ICT studies, and mobile phone usage poses a similar challenge (Aker and Mbiti 2010; Rezki 2023). This study takes a similar approach to previous studies (Islam et al. 2018; Hassan 2024), where the instrument is considered “a peer learning effect”. It is proxied through the average number of firms adopting mobile phones within a household locality, where the probability of adoption increases with the increase in adopters in a particular neighborhood. Two tests were performed to determine endogeneity. The first was the f-statistic, which determines whether the instrument is weak or not. The second was the Durbin–Wu–Hausman test on the necessity of using the instrument (Tchatoka 2015).

Nonetheless, z'_{ij} is also a vector of exogenous variables (x'_i) which includes capital source, social group member, marital status, education level of the enterprise owner, household size, age, and region. β_i , ∂_i , and \varnothing_i are the parameters to be estimated; μ_i and ε_i are the stochastic error terms.

In this case, the marginal effects (MEs) of household engagement in non-farm enterprises can be presented as follows:

$$ME = Exp [(MSE_i) | P_i > 1] \quad (8)$$

2.3.2. Oaxaca–Blinder Decomposition Model

Furthering the understanding, Njuki et al. (2011) established that enterprises with lower economic values are more likely to be controlled by women, and those with higher values by men. In this case, the gender differentials in SMEs can be defined from the income generated rather than the binary response.

In that regard, a three-fold extended Kitagawa–Oaxaca–Blinder decomposition approach (Kröger and Hartmann 2021) was used. The decomposition was performed to explain the average gender gap in the income generated from the SMEs between the two gender groups, i.e., (male and female). The uniqueness of the model is in its inclusion of the controls and error terms in comparing the differences.

Following Jann (2008) and Daymont and Andrisani (1984), the mean gender gap of the quantity used by two groups can be written as follows:

$$Gap = \overline{SME}_m - \overline{SME}_F = \underbrace{\{(\bar{x}_m - \bar{x}_F)\beta_f\}}_{\text{Endowment}} + \underbrace{\{\bar{x}_F(\beta_m - \beta_f)\}}_{\text{Coefficient effect (C)}} + \underbrace{\{(\bar{x}_m - \bar{x}_F)(\beta_m - \beta_f)\}}_{\text{Interaction effect (CE)}} \Big|_{L_j=1,2} \quad (9)$$

where \overline{SME}_m and \overline{SME}_F denote the average value of the income generated from SMEs disaggregated by gender; \bar{x}_m, \bar{x}_F are vectors of the control variables: operation site, main customer, social group member, formal registration, marital status, education level of enterprise owner, age, and region. L_i is the dummy for urban and rural residence.

The “three-fold” decomposition by the gender differentials is divided into three components. The “endowment effect” is the estimated gap based on the gender differences in observable characteristics. The “coefficient effect” is the coefficient differences in the observable characteristics, and third, the “interaction effect”, is the estimated gap from the preceding two effects. The model was estimated for both rural and urban residents.

2.3.3. Log-Linear Model

The simplest definition of benefits realized from non-farm enterprises is the profits. The log-linear model complements the other models in explaining the determinants of the profits realized from non-farm enterprises. A log-linear model is best known for its flexibility and replicability of the results in comparison with the linear model, which was specified by (Gould 2019) as follows:

$$Profits = \exp(\beta_0 + x_i\beta_i + \varepsilon_i) \mid L_{i,j=1,2} \quad (10)$$

where x_i is a vector of explanatory variables, which includes gender, operation site, main customer, social group member, formal registration, marital status, education level of enterprise owner, age, and region. L_i is the dummy for urban and rural residence; β_0 and β_i are the parameters to be estimated; and ε_i is the stochastic error term.

2.3.4. Mediation Analysis Model

According to the theoretical framework, the impact of participating in non-farm enterprises on household welfare is based on an interaction–mediation variable of income generated from the non-farm enterprises. The inclusion of an interaction variable is best explained through a mediation analysis. Bellavia (2021) specifies mediation analysis as follows:

$$E[Y_{ij} \mid x, inc., SME_{m,f}] = \beta_0 + \beta_1 SME_{m,f} + \beta_2 inc + \beta_3^T c \quad (11)$$

$$E[inc \mid x, SME_{m,f}] = \gamma_0 + \gamma_1 SME_{m,f} + \gamma_3^T c \quad (12)$$

$$\text{Direct effect : } \beta_1 \quad \text{Indirect effect : } \gamma_1 \cdot \beta_1 \quad \text{Total effect : } \beta_1 + \gamma_1 \cdot \beta_1$$

where Y_{ij} represents household welfare; inc is the income generated from participation in SMEs; and c is the confounding factors. The double regression ensures that the impact of participating in SMEs is based on income (Bellavia and Valeri 2018).

2.4. Data Description

This study takes a quantitative approach that uses the Fifth Integrated Household Survey (IHS 5) data from Malawi. The survey is one of the primary instruments implemented by the Government of Malawi through the National Statistical Office (NSO) every 3–5 years to monitor and evaluate the transitioning standards of Malawian households. IHS 5 is the fifth full survey in this series and was fielded from April 2019 to April 2020 under the World Bank Living Standards Measurement Surveys—Integrated Surveys on Agriculture initiative.

Using a stratified two-stage sample design, enumeration areas (EAs) were the primary sampling units established for surveys with clearly defined boundaries. Overall, 750 EAs were sampled, and, on average, each EA had 235 households. The second stage involved sampling the number of households per EA, and the total number of sampled households was 12,000. However, the COVID-19 pandemic during the period of the survey hampered the operations. Instead, 11,434 households were interviewed, a representation of 94.5 percent in terms of response rate. Four types of questionnaires were used during the data collection process. However, this study focused on one questionnaire (Household Questionnaire), which encompasses economic activities including non-farm SMEs, demographics, welfare, and other sectorial information of households (NSO 2020).

3. Results and Discussion

3.1. Determinants of Gender Differentials in Non-Farm Businesses Engagement in Rural and Urban Areas of Malawi

To understand the determinants of gender-based household engagement in non-farm businesses in rural and urban areas of Malawi, an instrumental-Probit model was used. The model was significant at 1 percent, implying that factors exist that determine

female engagement in non-farm enterprises. In terms of the variables, the significance was evaluated based on three confidence levels: 99 percent ($p < 0.01$), 95 percent ($p < 0.05$), and 90 percent ($p < 0.1$). These are the standards in correlation studies. By extension, the D-Hausman test to certify the instrumental variable model was performed, and for insignificant p -values, it prompted the use of a normal Probit.

Ownership of a mobile phone is one of the features that boost engagement in businesses as it provides a source of accessing information, marketing, and money transactions (AfDB 2013). In the recent world, urban centers have proved to be formidable in technological advancements, and a mobile phone is more of a norm with less drive towards influencing household participation in SMEs. However, a different outlook applies to the rural base, where owning a phone can have a ripple effect in advertising the essentiality of female engagement in non-farm enterprises. This study finds that the ownership of a phone increases rural households' participation in non-farm enterprises by 3.6 percent, holding the other factors constant.

The capital source is another interesting variable in determining gender differentials. The limited economic opportunities available to women and girls create the need for credit or external support (Oppong and Bannor 2022), an outlook that is further displayed in the gifts and inheritances parameter in both urban and rural settings. Interestingly, reliance on personal disposable income reduced the probability of females in households' engagement in non-farm enterprises in all categories. This further falls in line with the findings of Alkaabi (2022), who notes the need for proper financing as on-farm incomes are already small to support households' needs. Membership in a social group like mother care groups and village savings and loan groups is also a significant determinant of participation in non-farm enterprises in both rural and urban areas. Adolfsson and Madsen (2020) argue that social groups provide not only the required social capital but also the emotional support essential to running businesses. Thus, social groups like the village savings and loan groups need to be designed in a way that they can provide the income needs of rural households, but at the same time share the experiences, skills, and expertise in managing non-farm businesses, especially for rural women.

Education has been deemed by many as an essential element to the success of business operations. One study notes that tertiary education is a significant contributor to female engagement in households' non-farm enterprises, as more educated household heads better understand the business environment, reducing their over-reliance on agriculture and thus diversifying income sources at household level. Nonetheless, tertiary education is only significant in urban areas, further showing the disparity in terms of the education gap between rural and urban households. Marital status is another important attribute that aided household heads' engagement in business operations. Separated/widowed households in urban and rural households have a higher chance of engagement in businesses than their single counterparts. This suggests that the societies are patriarchal, and most women are empowered or they are decision-makers because of the unavailability of a spouse in the household. Interestingly, there seems to be a shift in norms and values, whereby the type of marriage custom that is practiced in a particular community displays a positive effect on female participation in non-farm enterprises. This suggests a progressive nature in women's participation in the new school of thought towards gender-economic empowerment.

Household size, on the other hand, increases the vulnerabilities of a household in income distribution, creating a notable need for diversifying income options, which is noticed across all groups. It is worth emphasizing that household affairs are mostly left to females. Increased household sizes, however, implies increased mouths to feed. The central and southern regions experience a lot of intra-migration, especially from the rural to the urban setting. Lanati et al.'s (2021) study extends this knowledge by noting that the propensity of migration is almost similar between genders. Thus, the nomadic life has created a negative effect on female-managed SMEs or SMEs in general (Table 1).

Table 1. Probit estimates of the determinants of gender differentials on household engagement in non-farm businesses in rural and urban areas of Malawi.

Variable	Marginal Effects (dy/dx) on Gender Differentials (Female = 1)		
	Rural	Urban	Pooled (Rural–Urban)
Mobile Phone (1 = yes)	0.036 *	0.282	0.427 ***
	(0.019)	(0.191)	(0.018)
Capital source			
Own savings (R)			
Credit	0.129 ***	0.053	0.044 **
	(0.031)	(0.060)	(0.022)
Gifts and inheritance	0.093 ***	0.159 ***	0.035 **
	(0.026)	(0.041)	(0.017)
Disposable income	−0.099 ***	−0.167 **	−0.096 ***
	(0.026)	(0.069)	(0.018)
Social group member (1 = yes)	−0.102	−0.215 **	−0.042
	(0.068)	(0.095)	(0.044)
Education level			
None (R)			
Primary	0.061	0.066	0.085 ***
	(0.042)	(0.060)	(0.026)
Secondary	0.015	0.108 **	0.057 **
	(0.039)	(0.052)	(0.024)
Tertiary	−0.032	0.245 ***	−0.103 *
	(0.134)	(0.058)	(0.053)
Marital Status			
Single (R)			
Married	−0.003	0.034	0.042
	(0.072)	(0.077)	(0.041)
Separated/divorced	0.417 ***	0.256 ***	0.237 ***
	(0.073)	(0.088)	(0.047)
Widow/widower	0.458 ***	0.377 ***	0.251 ***
	(0.074)	(0.085)	(0.050)
Marriage type			
Matrilineal and matrilocal	0.022	−0.039	0.109 ***
	(0.047)	(0.042)	(0.025)
Matrilineal and patrilocal	−0.055	−0.050	0.088 ***
	(0.052)	(0.077)	(0.031)
Patrilineal and neolocal	−0.042	−0.101	0.099 **
	(0.075)	(0.073)	(0.041)

Table 1. Cont.

Variable	Marginal Effects (dy/dx) on Gender Differentials (Female = 1)		
	Rural	Urban	Pooled (Rural–Urban)
Patrilineal and patrilocal	−0.009 (0.079)	−0.079 (0.159)	0.199 *** (0.054)
Household size	0.022 *** (0.005)	0.015 * (0.008)	0.017 *** (0.003)
Age	−0.001 (0.001)	−0.000 (0.002)	−0.001 ** (0.000)
Region			
North (R)			
Central	−0.140 *** (0.033)	−0.027 (0.048)	−0.099 *** (0.023)
Southern	−0.088 *** (0.032)	−0.023 (0.047)	−0.082 *** (0.022)
Endogeneity test statistics			
F-value	49.20	9.23	88.22
D-Hausman test, <i>p</i> -value	0.2721	0.1556	0.0000
N	3518	1251	4769

Source: Author's own computation. Standard errors in parentheses; R implies reference category. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

3.2. Impact of Gender Differentials in Household Engagement in Non-Farm Business Operations on Household Welfare in Rural and Urban Areas of Malawi

The second model ascertains the difference in profits realized from the non-farm enterprises of both female- and male-managed enterprises. The differences are similar in that they isolate the rural and the urban areas as sub-samples. Later, an interactional variable between gender differentials and rural–urban was considered to offer a comparison of the gaps between these demographic positions. In terms of the variables, significance was evaluated based on three confidence levels: 99 percent ($p < 0.01$), 95 percent ($p < 0.05$), and 90 percent ($p < 0.1$). These are the standards in correlation studies.

Across all the demographical positions, females are marginalized in how much they realize from their respective SMEs, similar to the results established by Duval-Diop et al. (2021). These differences are triangulated with socio-economic factors, coupled with the endowment coefficient and interaction effect. Urban areas have the highest inequalities within the gender differentials and, with a lower margin from the pooled category, the profit inequalities are more institutional-based than demographic.

Delving into the sub-categories pinpoints the origin of the inequalities. (1) Rural households have a higher coefficient effect of MWK¹ 19,073.12 (USD 1 = MWK 742.95) than the endowment effect with MWK 7458.96. This implies that variations within particular socio-economic factors have a major influence on the profit realized and that there is a comparative advantage in belonging to an advanced category of some socio-economic factors. (2) The higher endowment effect in comparison with the other effects within the urban setting emphasizes that the sense of belonging to a particular group or attaining a specific attribute on its own without considering intra-variations has a positive effect on profits earned. (3) The pooled analysis (rural–urban) further displays a difference of MWK 7768.05 through the interaction effect, which is a coupled parameter between the other

two decompositions, whereby for some covariates, the extent of the variable distribution is associated with an increase in profits.

All in all, male-headed households and urban households are seen to have an upper hand not only in the probability of engaging in non-farm enterprises but also in the profits realized after engaging in businesses. The disparities are significant and call for more targeted initiatives to address not only the gender gap but also the rural–urban disparities. To make matters worse, the problem is further exacerbated for a woman in a rural area, who faces extreme constraints emanating from limited education, access to credit and financial services, and sociocultural constraints (Table 2).

Table 2. Oaxaca two-fold decomposition estimates of the profit differentials in male- and female-headed households' non-farm businesses in rural and urban areas of Malawi.

	Profits		
	Rural	Urban	Pooled (Rural–Urban)
Differentials			
Male-headed SMEs	49,605.46 *** (4083.29)	101,950.09 *** (10,865.67)	61,031.98 *** (3317.17)
Female-headed SMEs	25,468.83 *** (2693.85)	60,177.31 *** (5542.69)	25,468.83 *** (2693.85)
Difference	24,136.63 *** (4891.84)	41,772.78 *** (12,197.71)	35,563.15 *** (4273.23)
Decomposition			
Endowments	7,458.96 *** (2866.57)	32,498.65 *** (9367.54)	11,335.85 *** (3315.29)
Coefficients	19,073.12 *** (4610.51)	22,468.33 ** (9695.73)	16,459.24 *** (3795.05)
Interaction	−2395.44 (3153.41)	−13,194.20 (10,715.67)	7768.05 * (4013.08)
<i>N</i>	3518	1251	4769

Source: Author's own computation. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

First, it is noted that gender was a significant factor in profits realized from non-farm enterprises. Focusing on the pooled column, Table 3 shows that female-headed enterprises have a reduction in profit from the mean by 73 percent as opposed to male-headed enterprises. Across the residence category, female-headed enterprises have a 65 and 34 percent reduction in profits in rural and urban areas, respectively. This further explains how gender is mainstreamed between the rural and urban divide, where males are more likely to have market opportunities than their female counterparts (Annan et al. 2021). This further shows the need for scaling up support to women entrepreneurs, especially those in rural areas.

In terms of operation sites, the magnitudes are very different in the rural–urban divide. Looking at the rural setting, non-farm enterprises in commercial areas have the highest profits. This is seconded by mobile enterprises and the marketplace. The trend between the parameters is the same for the urban areas, whereby operating in commercial areas has the highest effect in comparison with mobile enterprises and the effect in traditional markets. This could be attributed to the purchasing power that is associated with commercial areas, while the mobile scenario takes a business to customers, which makes it more convenient for customers, while, at the same time, giving the enterprise limited competition in its bargaining power.

Playing an intermediary market role in non-farm enterprises has proven to be more profitable than directing the market towards final consumers. Non-farm enterprises that supply large enterprises or institutions have an increase in their profits by 45 percent in the rural setting. The magnitude is not much different for non-farm enterprises, with a market reach of traders (44 percent) for the urban setting. Both categories based on the rural–urban

divide guarantee a fixed market for the products and, in most cases, bulk purchasing is performed by both groups.

Table 3. Log-linear estimates of the profit differentials in rural and urban areas of Malawi.

	Profits Coefficients (Natural Log)		
	Rural	Urban	Pooled (Rural–Urban)
Gender (Female = 1)	−0.66 ***	−0.35 ***	−0.74 ***
	(0.05)	(0.10)	(0.05)
Operations site			
Home (R)			
Traditional marketplace	0.20 ***	0.56 ***	0.30 ***
	(0.07)	(0.13)	(0.06)
Commercial area	0.71 ***	1.00 ***	0.84 ***
	(0.27)	(0.21)	(0.16)
Roadside	−0.05	0.22	0.04
	(0.08)	(0.16)	(0.07)
Mobile	0.23 ***	0.93 ***	0.42 ***
	(0.08)	(0.15)	(0.07)
Main Customers			
Consumers (R)			
Traders	0.10	0.44 *	0.16
	(0.12)	(0.24)	(0.11)
Other SMEs	0.08	0.39	0.19
	(0.13)	(0.26)	(0.12)
Large enterprises	0.45 **	−0.25	0.24
	(0.20)	(0.36)	(0.17)
Social group	0.56 ***	0.88 ***	0.75 ***
	(0.17)	(0.28)	(0.16)
Formal Registration (MRA, Registrar General, and Local Authority)			
None (R)			
At least one	0.70 ***	0.70 ***	0.70 ***
	(0.12)	(0.15)	(0.10)
Two	1.45 ***	0.79 ***	1.24 ***
	(0.28)	(0.25)	(0.20)
All three	0.98 ***	1.31 ***	1.24 ***
	(0.38)	(0.31)	(0.24)
Education level			
Primary	0.27 **	0.13	0.24 ***
	(0.11)	(0.16)	(0.09)

Table 3. Cont.

	Profits Coefficients (Natural Log)		
	Rural	Urban	Pooled (Rural–Urban)
Secondary	0.30 ** (0.12)	0.43 *** (0.12)	0.38 *** (0.08)
Tertiary	0.97 ** (0.48)	0.81 *** (0.19)	0.90 *** (0.18)
Age	−0.00 (0.00)	0.01 * (0.00)	−0.00 (0.00)
Region			
North (R)			
Central	−0.15 * (0.08)	−0.10 (0.11)	−0.15 ** (0.07)
Southern	−0.36 *** (0.08)	−0.26 ** (0.11)	−0.34 *** (0.07)
Constant	10.86 *** (0.13)	10.56 *** (0.23)	10.79 *** (0.11)
N	3518	1251	4769

Source: Author's own computation. Standard errors in parentheses; R implies reference category. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Social groups are observed to have a positive influence on profits, with 88 percent for the urban setting and 56 percent for the rural setting. Belonging to a business community guarantees access to market information or any other opportunity that arises. This is more common in the enterprise industry of the urban setting, whereby if one does not have a particular commodity, the customer is mostly referred to as a corresponding enterprise within their respective business community.

Similarly, the formalization of these enterprises is a very compelling situation in that there is a positive effect across all parameters. Looking at the rural setting, registering with two regulatory bodies has the highest magnitude of a 145 percent increase in profit. This relates back to the choice of customers, whereby the supply of commodities to large institutions requires formalization. In the rural setting, the local authority and Malawi Regulatory Authority focus on taxes that are the most desirable. This is different in the urban setting, where the registrar's office is vibrant, and registering to all three has a comparative advantage in profits.

The benefits of education are noticed as education levels increase in both rural and urban settings. Looking at the tertiary level, there is an increase in profits of 97 percent and 81 percent for rural and urban, respectively. The outlook indicates that education advancement is associated with better management and understanding of enterprise in general. The magnitudes are higher for the rural side because of the intra-migration effect, whereby most educated individuals opt for urban life. This is similar to the region variable; as discussed in previous sections, under enterprise engagement, the central and Southern regions experience a lot of intra-migration, hence the negative effect for the rural setting. However, in the urban setting, different possibilities arise. Based on NSO's 2020 multidimensional poverty report, the southern region has the highest poverty rates, which affects the purchasing power and has an overall effect on the market or enterprise community in general (Table 3).

The uniqueness of the structural equation is its ability to estimate different effects of gender differentials on household income and those below the poverty line. Firstly,

it estimates the direct effect of gender differentials on household livelihood indicators without including the mediating effect of profits. There is an improvement in household livelihoods, where there is a positive effect on households' income and a negative effect (decline in poverty) on poverty in both the rural and urban sub-samples. Such is the case since women are mostly obligated to household welfare, and the benefits realized from SMEs are mostly directed towards household expenditure.

The model secondly estimates the indirect effect, which is gender differentiation towards household livelihoods through the profits generated by the SMEs. Based on this, there is a negative effect on household income and a positive effect on poverty. This corresponds to the differences in profits realized from the SMEs giving male households the upper hand. Lastly, a total effect, which is the summation of the direct and indirect effects, was estimated. Across the rural and urban sub-sample, the effect was similar to that of the direct effect but with a smaller margin. This indicates that as female households make less profits than their male counterparts, the contribution to household welfare cannot be understated. Nonetheless, there is a contrasting effect for the pooled variable, where it is negative for household income and positive for poverty. The variable clearly defines that urban–rural inequality is quite complex, and economic empowerment only through SMEs is not the universal approach to bridging the gap (Table 4).

Table 4. Mediation analysis estimates of the impact of gender differentials in non-farm businesses on household welfare.

	Direct	Indirect	Total
	Effect	Effect	Effect
Household income (Natural log)			
Rural	0.172 *** (0.040)	−0.067 *** (0.020)	0.105 *** (0.039)
Urban	0.172 *** (0.040)	−0.067 *** (0.020)	0.105 *** (0.039)
Pooled (Rural–Urban)	0.017 (0.022)	−0.104 *** (0.010)	−0.087 *** (0.022)
Below poverty line			
Rural	−0.050 ** (0.020)	0.036 *** (0.005)	−0.013 (0.020)
Urban	−0.064 ** (0.026)	0.021 *** (0.007)	−0.043 * (0.026)
Pooled (Rural–Urban)	−0.009 (0.019)	0.045 *** (0.005)	0.036 ** (0.018)
N	4769	4769	4769

Source: Author's own computation. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

4. Conclusions

This study's main objective was to understand the effects of gendered differences in non-farm enterprises, specifically on resource allocation in rural and urban areas. The understanding is tailored towards household welfare, which is mostly the driving factor towards participation in non-farm enterprises. This study's theoretical underpinning was the unitary decision-making model and the feminist economic theorem and, specifically, this study addressed the following research questions: (i) Are there any determinants of household engagement in non-farm businesses in rural and urban areas of Malawi? and (ii) is there any impact of gender differentials in household engagement in non-farm business operations on household welfare in rural and urban areas of Malawi?

In addressing the first research question, different variables were determined that are business-oriented, i.e., capital source, social group membership, and mobile phone ownership. The second group of defined variables were generic socio-economic factors like marriage, education level, age, household size, marriage type, and region. The rural–urban

divide was not overlooked, where the model further involved restriction to rural and urban households only, and then was pooled to ascertain the rural–urban gap. In extension, the Oaxaca–Blinder decomposition model was used to describe the profit differences between male and female-managed enterprises within the urban–rural divide. The second research question involved a mediation analysis, where profits realized from the SMEs as a mediating variable introduced the impact of gender differentials in enterprise management towards household welfare.

This study notes that systematic challenges within the business environment have a multiplier effect on profits realized from female-managed enterprises, which are lower than their counterparts. These bottlenecks are further clarified in the profit determinants, especially for the urban setting, where the benefits realized by a male counterpart in slightly improving some indicators is quite a huge profit-changing point, which is an emphasized principle of the extent of the realized rural–urban gap. The impact of the gender differentials on household welfare shows differences based on the urban–rural divide. For the rural or urban setting, where a thin line between household and enterprise needs is not defined, especially “hand-to-mouth” enterprises, there is an improvement in household income and a reduction in poverty levels. However, controlling for the liabilities with profits as the mediating variable, there is an opposite effect, which shows that male households have a comparative advantage. The unlimited liabilities of female-managed enterprises are a hindrance to the expansion of female-managed enterprises. Holistically, this relates back to the business environment, to say the least, that the management modalities by the female-managed enterprises to some extent incentivize the bottlenecks in the business environment.

The total effect, which is inclusive of all the possibilities, indicates that economically empowered female households have an attributing effect on household welfare. The pooled variable, which emphasized the rural–urban gap, indicates a negative effect on household income and a positive effect on poverty levels. Thus, it is safe to conclude that bridging the rural–urban gap takes more than the economic empowerment of households based on gender differentials. The results also support the theoretical framework of the “household head approach” and, similarly, the linkages between enterprise management and household welfare.

The limitation of this study is the low emphasis on sustainability, growth, and expansion of the enterprises from the gender differential perspective. Longitudinal data and a mixed-method approach are the best alternatives for incorporating the other parameters. Nonetheless, this study recommends the following: (i) support designation and credit structures for rural households and women-headed households; (ii) financial and business literacy of rural and women-headed households for increased engagement in business operations and reduced poverty; and (iii) continued support for the advocacy of gender inclusion in economic empowerment approaches.

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Notes

¹ Malawi Kwacha.

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