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Economic Activities and Gender Inclusiveness. A Case of Maize Production in Tanzania and Integrated Research Review

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Abstract

This study examines the participation of men and women in agricultural operations. The study aligns appropriately with United Nations Sustainable Development Goal number five and the importance of engendering development regardless of the nation's development level. Data were gathered using survey questionnaires and Integrated Research Review (IRR) techniques, and the production function was estimated. Results indicate that male-headed households dominated in the study area. A significant increase in maize production was observed, with more women participating. However, women's engagement in crucial agricultural activities was low. IRR indicates that female-headed households produce less compared to male-headed households. Females spent more time in nonproductive and unpaid activities and were less engaged in marketing outputs than men. Results reveal further that when women-headed and men-headed households are subjected to similar production environments, the former may perform better than or equal to the latter. The reasons for perpetuated gender inequality are weak and lack of law enforcement. The study recommends conducting a community awareness campaign and revising laws and regulations to make them more gender-responsive. Also, increase the financial and non-financial support from governmental and non-governmental organisations.

Keywords, Gender, Agriculture, Maize, Participation

Introduction

Engendering development, regardless of the nation's development level, is crucial. This move is the basis for the United Nations (UN) declaration of 2021 that progress across all other Sustainable Development Goals (SDGs) can only be attained if goal number 5, which requires the realisation of equality among genders and women's emancipation, is met. Notably, this goal insists, among others, on ensuring women's full and effective participation and equal opportunities for leadership at all levels of decision-making in the political, economic, and public arenas. The accomplishment of the first five SDGs; no poverty, zero hunger, good health and well-being, quality education, and gender equality is only possible if women's agricultural capabilities are observed and recognised (UNCTAD, 2022). A few examples of how women are disempowered and marginalised are salary cuts (Kurniawan et al., 2018); traditional land allocation (Hallward-Driemeier & Hasan, 2012; URT, 2013); and underrepresentation in the socio-political, economic, educational, and constitutional domains (Falola, 2021).

Unfortunately, studies have consistently shown that over several decades, the realisation of the importance of engendering development has been delayed. For example, the theories of economic development that emerged in the 1950s and 1960s paid little or no attention to women's productive roles (Moghadam, 2019). Fortunately, the World Bank considers women's participation seriously, for it appointed a woman to the position of development adviser following the so-called UN Decade for Women (1976–1985). The inclusiveness of gender in the development of least-developed countries has been influenced by critiques of the theories of modernisation, underdevelopment, dependency, and neo-liberalism since the 1950s. The reason is that efficient and effective development plans and projects are achieved through women's economic contribution (Sarker, 2006). Furthermore, universal methods to guarantee gender parity and women's empowerment while fully realising women's potential within society were designed at the Fourth World Conference on Women in Beijing (1995) (Avolio & Di Laura, 2018). Indeed, increasingly, international cooperation has made the Gender and Development (GAD) approach important since the 1980s as a support for the Women in Development (WID) approach. Also, the necessity of engendering development is emphasised by scholars and researchers such as Abebe (2017), Rogers & Youssef (1988), Mmasa (2013), Marcus (2018), JICA (2009), and Geset Techane (2017).

Several studies have covered gender inclusivity in economic activities, but empirical research is not as well documented. The impact of women on agricultural productivity, for example, has not been adequately studied empirically. Using information from a survey and theoretical literature, the current study has examined how much women participate in and contribute to agricultural operations.

Theoretical Literature Review

Gender is one of the most important aspects of people's uniqueness. It determines a "person's looks, interests, actions, friendships, interactive styles, romantic relationships, and career decisions" (Miller, 2016). Because of the universality of gender in terms of its influence on a person's life, several theories have attempted to explain gender development and disparity in different ways. One of the approaches Miller presents is categorising the theories as biological, social, and cognitive. Apart from the three theories mentioned earlier, the present study espouses broad ideas of participative management that describe how lack of engagement by all members of society leads to production problems in the company and elsewhere.

Although all three theories explained by Miller (2016) differ in their approaches, they highlight how society prepares female and male children to accept their roles as members of society. These preparations prescribe the participation of females and males in development activities. The biological theory describes psychological and behavioural gender differences resulting from biological differences between males and females. It concentrates more on successful reproduction. Geary (2010) holds a similar view as Buss (2000) by emphasising that the persistence of the human species depends on prosperous reproduction. Moreover, Alexander (2003) seems to hold a similar argument when he describes the disparity in male and female roles associated with masculine and feminine toys, respectively.

Besides, social approaches to gender development suggest that gender dissimilarities result from diverse actions that girls and boys are culturally constructed to espouse as they grow (Miller, 2016). Based on these approaches, social construction indoctrinates societal members to act based on their gender stereotypes. Living based on their stereotypes goes hand in hand with appraisal and punishment. For example, boys play with masculine-like toys such as lorries and balls. Contrary to the aforementioned established gender norms, boys are discouraged from playing with feminine-like toys such as dolls. Therefore, social constructions of gender shape males' and females' conformity with gender roles and stereotypes. Indeed, these defined roles lead to discrimination against a particular sex when participating in a specific activity, including agriculture.

The third theory is Lawrence Kohlberg's Cognitive Developmental Theory of Gender, discussed in Maccoby's (1966) "The Development of Sex Differences" (1966:82-173). According to this theory, children's knowledge of gender speeds up their behaviours consistent with age and gender norms. Children will be aware that, whether they are boys or girls, their gender does not alter despite superficial variations in appearance or activities. Thus, in this theory, Lawrence Kohlberg explains that children are prepared and shaped by norms to accept the prescribed responsibilities of a particular society regardless of how discriminatory they are.

Still, participatory management theories propose that resource users perform poorly in a situation where there is a shortage of resources (Miller, 2016). This is due to the fact that democracy, accountability, representation, and communication are all hampered in such a setting, leading to "free riding, rent-seeking, and corruption" (Ostrom, 1992). For example, in Nepal, all male organisations involved in the Chhattis Mauja system had difficulty enforcing its rules against women because women's involvement at the establishment stage was ignored (Meinzen-dick, 2007). Indeed, the participatory management theory shows the importance of a successful developmental agenda that involves all stakeholders, bringing up the issue of women as an essential development segment. Analysis of the preceding review shows that all theories acknowledge that the separation of the male and female roles in society is based on biological nature and socially prescribed gender stereotypes.

Additionally, the theories mentioned above consider the importance of gender consideration, particularly the importance of all sexes participating in all activities (Meinzen-Dick, 2007). This notion of engendering development is a significant concern in explicating the involvement of less-prioritised agricultural stakeholders (women) and other activities. The present study surrounds the theoretical premises discussed and commonly known practices.

Building on the studies and theories reviewed, gender inclusiveness in economic activities is debatable, yet there is not enough empirical work to quantify the influence of women on agricultural production. Thus, the current study hypothesised that "there is little involvement and contribution of women towards agricultural activities."

Research Methodology

This study employed combined methods: field survey and IRR. The survey method used semi-structured questions to gather data. Field observations complemented the survey method. The IRR approach was used to gather data from various sources, including a review of earlier studies. This section provides more details on survey methods, from describing the study area

to the research approach and sampling techniques, analytical technique, and model specification. The two methods were used together to understand gender involvement in economic activities comprehensively.

The research area

The current study was conducted in the Ludewa district in the Njombe region of Tanzania. The district is one of the four districts in the region; the others are Njombe, Wanging'ombe, and Makete. The Ludewa district covers approximately 6,325 square kilometres. Its soil is generally rich in lixisols (lx). It has a clay-enriched lower horizon, low Cation Exchange Capacity (CEC), and high saturation of bases. Therefore, it is one of the few districts with high agricultural potential in Tanzania. Ludewa district was chosen for this particular study because of its potential for maize production and remoteness, in addition to the features mentioned earlier. Ludewa is a rural district where about 95% of its people depend on agriculture as their primary economic activity. Cultivated crops include maize, sorghum, wheat, beans, and cassava. The cash crops include coffee, sunflowers, tobacco, and pyrethrum. Thus, agriculture has been the main economic activity in the areas where maize is a major crop. This prominence makes it worthwhile to investigate the participation and importance of women in production.

Research approaches and sampling techniques

The study combined two research approaches, field survey and IRR, which were employed concurrently to complement one another. In the survey, primary data were collected from 420 heads of the household using a semi-structured questionnaire and research observation. Through the observation method, the participation of women and men in production and marketing was examined. The IRR method was used to collect secondary data from literature, including the Bank of Tanzania bulletins and empirical evidence relevant to the study. The research questions ranged from gender participation, women's roles in agriculture, and their limitations in economic activities. The survey's main data collected were demographic characteristics of households' heads, land size owned by households, fertiliser application, and extension services provision.

Multistage sampling and purposive techniques were adopted to obtain data from two Ludewa district divisions: Mawengi and Mlangali. In Mawengi, two wards, Ludewa and Mawengi, were selected, whereas Mlangali and Lupanga wards from the Mlangali division were selected. Cross-sectional data were collected through a structured questionnaire. Different methods of data collection were employed for data validation.

Analytical technique and model specification

The collected data were qualitatively and quantitatively analysed. It is imperative to note that, in Tanzanian family settings, the household leaders are speakers and decision-makers for the family. Therefore, in the qualitative analysis, data about the percentage of women and men who stand as household heads were obtained, and inferences were drawn. The quantitative analysis was conducted by estimating the production function where the variable of concern is gender. The current study follows the work of (Peterman et al., 2011), who assessed and modelled differences in technical efficiency in agricultural productivity in men and women by estimating production factors. In this case, the maximum output produced from the set of inputs

given the technology available to the household is modelled. The output of a farm manager *i* in household *j* is described by equation 1.

$$Y_{ij} = f(V_i, X_i, Z_j)$$

……..……..…….....…….(1)

Whereas *Yij* is the quantity produced, *Vi* is a vector of inputs used by the farm manager *i* (including land, labour, capital, and extension guidance), *Xi* is a vector of individual qualities, and *Zj*is are household and community-level variable (s). This method is often used to estimate productivity results (yield or value of output) by pooling observations from male and female farmers, and it typically includes a gender indicator as one of the control variables in *Xi*. Instead, regressions might be computed individually for male and female farmers' subsamples. Therefore, in the present study, the dependent variable is the amount of maize produced (in bags of 100 kg). Among others, the gender variable, the primary concern of the present study, is added as an independent variable in the production function. The production function is given by equation 2.

$$Y_{is} = f(X, Z_j)$$

…….……..…….……(2)

Whereas *Y*is is the quantity of maize produced, *X*is is a gender variable, and *Zj*is is a vector of other variables (family size, age of the head of household, size of land owned, fertiliser application and extension services). In this case, extension services or advice is equated to the number of visits by extension officers.

The empirical model below was estimated using the Ordinary Least Square (OLS) approach based on the implicit model in 2.

$$Y_i = b_0 + b_1 X + b_i Z_i + \varepsilon$$

……..……...……3

Methodological limitations

While this study was limited to the Ludewa District, future research could benefit from a multi-regional design encompassing diverse ecological and socio-economic settings. This choice would enhance the generalizability of findings and provide a more comprehensive understanding of gender roles in Tanzanian agriculture. Further, while recognising that household headship often excludes the perspectives of women actively involved in agriculture, future research should incorporate responses from female household members. It would enable a more balanced and accurate analysis of gender roles and decision-making power within the household and farm operations. However, because the study combined the survey and IRR techniques, the insights of gender participation in economic activities and views of women were captured in IRR.

Research Findings and Discussion

The results reveal that in the study area, most heads of households (79.2%) are men (Figure 1). In line with this finding, the study conducted in South Ethiopia revealed that of the total

households sampled, males controlled 73% of them, and the rest are controlled by the females (Gebre et al., 2021). However, the study did not cover the quantitative analysis. Further analysis in the current work (the chi-squared test) indicates that the proportions of male and female-led households across the divisions significantly differed at 1% ($\rho = 0.002$). The Mlangali division had an excellent ratio of male-led homes growing maize compared to the Mawengi division, implying that, although men head most households, the extent varies across places. It is worthwhile to note that 11.7% of women heads of households were widowed. Besides, it was pointed out that women headed some of the households in the study area because they were single, widowed, separated or divorced. As the Food and Agriculture Organisation [FAO] (2011) and Kassie et al. (2014) explain, the main reason for increased female-headed households is that males migrate from rural areas to elsewhere given circumstances including looking for different occupations, widowhood, divorce, single females, and other family interferences. Additionally, the current study's observational data suggest that males significantly influence corn production and marketing decision-making. Still, the effective participation of males in agricultural production activities was minimal compared to females.

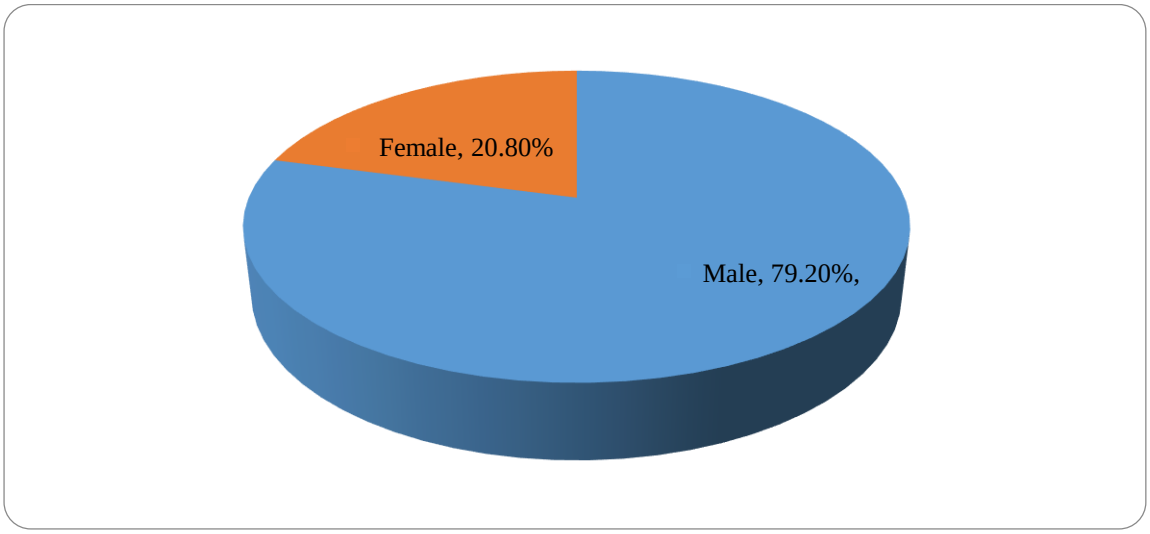

Figure 1: Sex of the heads of household

Additional statistical analysis was conducted to provide insights into the relationship between gender and agricultural activities (Table 1). According to the household heads' responses, the average number of years men and women spend in school is seven and five years, respectively. Gender and school attendance were significantly correlated at $\rho = 0.057$. This correlation suggests a significant educational gap between men and women. It is impossible to underestimate the significance of education and other agricultural endeavours. The fourth Sustainable Development Goal emphasises the need for universal access to high-quality education for development. In addition, the land ownership responses showed that men and women own significantly different amounts of land ($\rho = 0.00$), with the mean acreage owned by men and women being 7 and 4 acres, respectively. This finding might imply that women have barriers to accessing productive resources. When women are denied access to land, it might be difficult for them to succeed in agriculture, as land is a significant agricultural resource. Regarding information availability, particularly in agricultural inputs, responses

showed that men access information more frequently than women; however, the difference is not statistically significant, suggesting that women's involvement in substantial matters about agriculture is limited.

Additionally, responses to the marketing activity measured by the number of bags sold by farmers revealed a significant difference ($\rho = 0.011$) in the mean number of bags sold by men and women, with the mean being 18 and 10 bags, respectively. Overall, women tend to lag in critical activities, which may indicate a lack of opportunity for decision-making, causing a detrimental effect on women's economic standing.

Table 1: Analysis of the correlation between gender and agricultural activities

Variables	**Pearson correlation value**	**ρ = value**
Gender and number of years spent in school	-0.206	0.00
Gender and number of acres owned	-0.254	0.00
Gender and access to information about the availability of fertiliser	-0.038	8.75
Amount of maize sold in 100kg bag	-193	0.011

Source: Survey data and own computation

Gender participation in economic activities from other regions of Tanzania

Analysis from different scholars indicated that women who are engaged in different agricultural activities spend a lot of time on the production side. They further narrate that women do not benefit from their work as they are not engaged much in marketing, decision-making, and ownership of productive resources, including land. For example, Sikira and Kashaigili (2017) conducted a study in the Southern Agricultural Growth Corridor of Tanzania (SAGCOT), and they generalised that in Tanzania, women are discriminated against when it comes to land and water ownership, although they perform over 60% of agricultural activities. This statistic indicates that even if women invest time and labour in agriculture, they will not gain much from denying their control over vital natural resources for agriculture, including land and water. This conclusion can also be expanded to the findings by the same researchers, Sikira and Kashaigili, that, even though some women in the villages of the Iringa districts are given a plot of land by their parents when they marry, the husband will still have power over that plot. The conclusion that can be drawn from this research is that society has yet to guarantee that women reap the rewards of their labour in economic activities, such as farming. Additionally, Adamet al. (2020) examined gendered participation, decision-making processes, and resources in Tanzania's maize/seed production, marketing, and sales to investigate gender relations along the maize value chain. The results support the current survey's conclusions that men predominate in the higher nodes of the maize value chain. Women typically only participate in the production of maize, and they encounter obstacles while trying to access higher nodes. Examining these results leads us back to the current study's conclusions, which state that women do spend a significant amount of time in agriculture aside from providing care, fetching water, and gathering fuel wood. However, they only contribute significantly to production, one of the value chain components. It is important to remember that, from an economic perspective, production, distribution, and consumption are the three components that

make up economics. It would be equivalent to denying women the opportunity to reap the rewards of their labor in economic activities if they were excluded from full participation in any of these segments, particularly distribution and marketing. Also, Badstue et al. (2021), who studied four communities that grow various crops, including maize, the Mogorowi and Kilosha communities from Morogoro, the Medu community from Arusha, and the Tanwa community from Tanga, found that people acknowledged the importance of men and women agreeing for development.

On the other hand, women in all four communities, particularly middle-class women, agreed that men make the majority of the decisions. Because they rely on males for nearly everything, women never have complete decision-making authority. Women in all four communities, particularly those from middle-class backgrounds, admitted that men make most decisions despite this knowledge. Women never have complete decision-making authority since they are nearly entirely dependent on men.

Drawing from the analysed findings of the studies conducted in regions and Tanzania, the discussion of gender participation in economic activities is a cross-cutting issue. It ranges from production to the point of selling, while the participation of women is seen in production.

Quantitative analysis: Estimated model results and discussion

The estimated production function model revealed a negative relationship between total output and sex (see Table 2), implying that the more households headed by women, the more maize produced. Results indicate that as you move from men's to women's involvement in production, more output is realised and vice versa. Thus, women are more critical in crop production. Therefore, empowering women (giving them more time and accessibility to resources) may lead to increased agricultural productivity and, hence, economic growth.

Earlier studies have reported similar results, although they have used different methodologies. For example, Gebre et al. (2021) had the same observation, although they did not quantify the relationship between gender and maize production. Despite this, Adam et al. (2020) reported that women's participation in the maize value chain in Tanzania is generally limited to maize production. Women face barriers to entering higher nodes; they are not decision-makers and are limited to maize production resources such as seed access. This challenge happens across Africa and the globe; for instance, District et al. (2010) revealed similar reasons for women's delay in productivity.

Further, reports add that male and female smallholders lack enough access to agricultural resources, but women suffer the most. Still, Gebre et al. (2021), Pogoy et al. (2016), and Marenya et al. (2015) revealed the same reasons that females face the problem of accessing productive resources and supportive social networks. Moreover, Pogoy et al. (2016) indicate that women have to balance household chores such as cooking for the family, taking care of children, washing clothes, cleaning the house and farming work. In a nutshell, in line with the findings from previous studies, female-headed households are less productive for three main reasons: limited access to productive resources and social networks, limited time to engage in productive activities, and less participation in produce marketing.

Another negative relationship was observed between output produced, age and fertiliser application. The inverse relationship between output, age, and fertiliser application was not expected. However, the inverse relationship between output and two variables may have different implications. In the case of age, the implication may be that as the farmers age, they become less productive. For the interest of the present study, age variables can have gender explanations. It is evident from previous studies that the extent of female participation in productive work differs across ages. Based on the Tanzania National Bureau of Statistics (NBS) data, although the extent differs across the age groups, women always spend less time in productive activities than men (NBS, 2014).

Likewise, the inverse relationship between output and fertiliser application can be caused by excessive fertiliser application, leading to toxicity and low land productivity. Also, Zingore (2011) revealed that if fertiliser is not applied excessively, it can result in negative impacts depending on variability in soil fertility, whereby crops respond to fertiliser and various complementary organic resource-based technologies depending on the soil fertility variability. Further, results revealed a positive relationship between the total output of maize and family size, land size, and visits by extension officers.

Table 2: Analysis Estimates of the production function

Variables	Coefficients	t-statistics	Sig.
Family size	1.837	3.21	0.001***
Sex of household head	-5.272	-1.887	0.060**
Age of household age	-0.038	-.463	0.643
Total size of land	1.544	22.671	0.000***
If fertiliser applied	-13.392	-3.560	0.000***
Number of visits by extension officer	5.552	4.404	0.000***
Constant	31.036	4.299	0.000
F-statistic = 103.877***, R^2 = 0.601, Adjusted R^2 = 0.595, DW = 1.891			

Source: Field Survey Data; Dependent variable: amount of maize produced in 100kg bags. Asterisks *** indicate significant at 1% level, ** significant at 5% and * significant at 10%

Overview and discussion of IRR

As indicated in the methodology, the IRR was used to gather additional information, including methods for evaluating the contribution of women to economic activities, to enhance the findings from the field survey and the conclusion.

Economic activities and agricultural output contribution by gender

Research indicates that quantifying women's contributions to agriculture and economic development is challenging (Doss, 2011). However, Sofa and Doss suggested arguments to support women's contributions, such as the proportion of women in the population that is economically involved in agriculture and the amount of time that men and women spend doing different tasks. Although many of the functions carried out by women are crucial to the welfare of rural households, Sofa and Doss pointed out that these jobs are not included as "economically active employment" in national accounts.

Various methodologies can be employed to evaluate the impact of gender on agricultural output. Among these include examining the output generated by men and women and the labour force committed to agricultural production. Regarding the labour force, countries experience similar scenarios where males outweigh females, although the extent differs across countries. Between 1992 and 2012, in Latin America and the Caribbean, the male labour force participation rate outweighed that of females but with a gap continuously shrinking (Table 3). Besides, in India, women's participation in the workforce was 27.44% against 72.56% in 2011 and 35.94% against 72.56% of the male workforce between 2013-2014 (Singh et al., 2019). Tanzania's labour force participation rate was higher among males, 89.4% than females, 84.2% between 1990 and 2015 (Idris, 2018). Recently, a report showed that Tanzania's male labour force participation rate exceeds women's by about 7% (UNCTAD, 2022). Concerning productivity in Africa, the contribution of females or female-headed households to agricultural productivity is low. For instance, the productivity of male-headed households was high by 44.3% compared to female-headed households (Gebre et al., 2021). This gap is because females receive fewer resources. Women could have increased productivity by 42.3% if they accessed resources as men (Gebre et al., 2021). Still, in Nigeria, Tanzania, and Uganda, the females who manage land are less productive than their counterparts by 18.6, 27.4, and 30.6%, respectively Mukasa & Salami (2016), because females manage small plot sizes and have less access to non-labour inputs.

In terms of time, a small percentage of women have enough time for agricultural production (generally, weeding and harvesting were predominantly female activities), and their engagement in the marketing of produce is minimal. Women farmers face greater time constraints than men because they spend more time on domestic chores. The marketing decisions are made mainly by husbands (Akram-Lodhi & Komba, 2018). The implication is that females are mostly involved in the production while enjoying little in the monetary outcomes of their work. Thus, female household headship has been used to indicate the feminisation of poverty, and by the late 1970s, female-headed households were "the poorest of the poor" (Desarrollo, 2004).

Table 3: Latin America and the Caribbean: gender gap in labour force participation rates, 1992-2012 (Percentages)

	1992	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Male	82.5	80.3	80	80.2	80.2	80.1	79.9	80	79.7	79.8	79.6	79.5
Female	43.5	49.6	49.8	50.8	51.3	51.5	51.7	52.6	52.6	53.1	53.3	53.6
Gap	39	30.7	30.2	29.4	28.9	28.6	28.2	27.4	27.1	26.7	26.3	25.9

Source: International Labour Organization (ILO), 2014

Factors for fewer women's engagement in economic activities

Socio-economic variables influence women's inclination to engage in productive employment. Idris (2018) described Tanzania's primary obstacles to women's economic inclusion. Women "are time-poor," according to this academic. The assertion suggests that women devote a greater amount of time to domestic tasks compared to men. They most notably handle laborious

and time-consuming chores like gathering firewood and water. These responsibilities eat up their time and prevent them from working for pay. Data on time usage in Tanzania reveal a notable gender disparity, Table 4. Men spend more time than women doing System of National Accounts (SNA) production activities (342 minutes vs. 195 minutes, respectively). Still, women spend more time than men doing extended SNA activities (238 minutes vs. 64 minutes, respectively), which are recognised as work but outside the SNA production boundary. In the peak working age categories, there is a significant gender discrepancy. Men spend 82 minutes on extended SNA in the 15–24 age group and 298 minutes on SNA for women; in the 25–34 age group, men spend 505 minutes on SNA production activities and 56 minutes on extended SNA with 249 minutes on SNA and 300 minutes on extended SNA for women.

Differences in education between genders: Tanzania has made significant progress toward gender equality in basic education; however, girls lag behind boys in secondary education, and the disparity grows even further in postsecondary education (NBS, 2014). As a result, women who join the workforce tend to be less educated and have fewer chances overall, particularly in paid work.

Pressures on reproductive health: Tanzania excels in high rates of births and maternal deaths, early marriage and pregnancy (the teenage birth rate in 2016 was 118.6) (United Nations Development Programme [UNDP], 2016). Furthermore, when women marry and have children at an early age, it limits their access to school and professional opportunities.

The productivity difference between genders in agriculture. This results from constraints on women's land rights, unequal access to male labour, and unequal returns on the use of pesticides and fertiliser use (caused by women's relative ignorance).

Restricted availability of financial services: This hurts women who work in businesses and agriculture. Gender-sensitive financial services are scarce on the supply side. On the demand side, women also lack awareness and information. However, primarily due to the expansion of mobile money, the gender gap in financial inclusion is closing (UNCTAD, 2021).

Reduced involvement in entrepreneurship: This results in women not participating in productive employment and not challenging legal and regulatory structures. In addition, women in this field face obstacles due to limited access to markets, technology, and business development services.

Customary gender roles: Cultural norms uphold that women are suitable for unpaid caregiving and other domestic duties. This belief prevents women from participating in productive employment and religious precepts that limit women's contact with society at large (UNCTAD, 2021).

Making a similar argument to Idris (2018), Academics like Amenyah and Puplampu (2013) elucidate how complex political, economic, and social interactions contribute to women's poor performance in agriculture, nationally and internationally. Similarly, despite their significant contributions to agricultural output, women rarely benefit from it due to societal and traditional beliefs, economic restrictions, and other factors (Ugwu, 2019). Asante & Bank (2002) argues that laws, economic conditions, and social values are the fundamental causes of gender inequality.

Furthermore, the Tanzania Integrated Labour Force Survey (TILFS) makes it abundantly evident that one of the barriers preventing women from engaging in productive activities is time. TILFS claims that time is allocated based on SNA. Human activities are classified into three groups in SNA. SNA falls under the first category, which deals with productive activity (figuring out if someone is employed). Second, although they are outside the SNA production boundaries, extended SNA activities are acknowledged as work. These include unpaid chores, caring for the household's young and ill members, and community services. Thirdly, there are unproductive pursuits like education, networking, sports, games, and media use, as well as daily upkeep and personal hygiene like sleeping, eating, and bathing. Females participate in longer SNA activities across all age groups, while the amount of time varies by age category, Table 4. These tasks are known for being tiresome and time-consuming. Men focused more on productive and little to nonproductive SNA activities. This division is especially problematic because time-consuming and difficult jobs leave women with little time for sleeping, eating, and taking showers.

Though the difference is not statistically significant, females only engage in more non-productive or non-work activities than males aged 24 to 35 (878 and 891, respectively). Accordingly, this is the only age group where women have more time than men to eat, shower, and sleep. It implies that women never have as much time as men to engage in activities that generate income. Thus, women do not have enough time for essential activities such as exercising, talking with others, sleeping or resting, eating (even though they prepare most of the food), and using the media to get knowledge. Women are, therefore, more vulnerable to pressures related to reproductive health in all circumstances while having less financial and information power.

Table 4: Mean time spent in minutes per day per person (5+ years) by SNA category, sex and age group, Tanzania Mainland, 2014

Age	Activity	Male	Female	Both Sexes
5 - 9	SNA production Activities	41	34	37
	Extended SNA	58	78	69
	Non-production activities	1341	1328	1334
	Total	1440	1440	1440
10 - 14	SNA production Activities	83	60	71
	Extended SNA	72	145	109
	Non-production activities	1285	1235	1260
	Total	1440	1440	1440
15 - 24	SNA production Activities	282	186	228
	Extended SNA	82	298	204
	Non-production activities	1076	955	1008
	Total	1440	1440	1440
25 - 34	SNA production Activities	505	249	378
	Extended SNA	56	300	177
	Non-production activities	878	891	885
	Total	1440	1440	1440
35 - 64	SNA production Activities	457	281	370
	Extended SNA	58	243	149
	Non-production activities	925	916	921
	Total	1440	1440	1440

Age	Activity	Male	Female	Both Sexes
65 +	SNA production Activities	197	129	159
	Extended SNA	59	168	120
	Non-production activities	1184	1143	1161
	Total	1440	1440	1440
Total	SNA production Activities	342	195	266
	Extended SNA	64	238	153
	Non-production activities	1035	1008	1021
	Total	1440	1440	1440

Source: NBS, 2014

Conclusions and Recommendations

This study evaluated how gender participation in economic activities is distributed and what obstacles exist. A survey questionnaire and IRR techniques were used to gather data, and the production function was estimated. The findings show that women lead fewer households than men, not because they are given special treatment by gender-responsive social norms and customs but rather because they are widowed, single, separated, or divorced. The study supports the idea that women play a significant role as agents in economic activity. Nevertheless, they devote more time to underpaid, ineffective activities like housework. Despite this, women have fewer hours than men do each day to rest, eat, sleep, and socialise. When growing crops, women are primarily involved in planting, weeding, and harvesting, but they are less involved in selling the finished product. As a result, female-headed households are less productive than male-headed ones. Furthermore, the study discovered that because they rely on their husbands for financial support, women from lower socio-economic groups suffer the most when it comes to decision-making involvement. The study's findings suggest that policies and legal frameworks should be reviewed to promote gender responsiveness in economic, social, and political spheres. Moreover, this study recommends that policymakers and development partners increase targeted funding and institutional support to encourage gender-sensitive agricultural services. Gender-responsive extension programs and financial services tailored to the needs of women farmers are critical for empowering women and enhancing their productivity in the maize value chain. In addition to balancing the allocation of time and financial resources, this will enable women to engage more completely in decision-making processes. To bridge the gender gap, campaigns should also be started to increase awareness of the importance of women's involvement in agricultural activities.

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