



Understanding the Key Factors influencing Income Generation in Small Women-Owned Enterprises. A Case of Tabora Municipality

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Abstract

This research examined the obstacles encountered by female entrepreneurs in Tabora Municipality, Tanzania, with a specific focus on micro and small enterprises involved in sectors like sunflower oil production, petty trade, and beekeeping. Utilizing Krejcie and Morgan's formula (1970) for finite populations, the study established a sample size of 384 women entrepreneurs, accounting for 3.2% of the 12,400 women-owned businesses in the municipality. A stratified random sampling technique was used to ensure a representative sample of the population. The analysis integrated both quantitative and qualitative methods, employing Ordinary Least Squares (OLS) regression to pinpoint key factors affecting income generation. The findings reveal that technology adoption is the most significant factor ($\beta = 0.700$, $p < 0.001$), followed by access to loans ($\beta = 0.486$) and startup capital ($\beta = 0.343$), while education, marital status, and marketing also play important roles in influencing income. Results demonstrate that women entrepreneurs who incorporate technology into their businesses experience considerable income growth, yet obstacles like financial exclusion and low initial capital remain impediments to progress. The study concludes with recommendations for targeted interventions, including digital literacy programs, gender-sensitive financial products, vocational training, and collaborative marketing strategies, to tackle these issues and foster women's economic empowerment in Tabora and similar regions.

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Introduction

Women's entrepreneurship is crucial for Africa's economic progression, yet the ongoing income inequality between male and female-owned businesses remains a significant challenge for development. In Sub-Saharan Africa, businesses owned by women earn 34% less than those owned by men, even though women make up 58% of the informal sector workforce (World Bank, 2023) ^[25]. Tanzania reflects this trend across the continent, with the National Bureau of Statistics (2023) ^[17] reporting that women-led microenterprises earn nearly 40% less in monthly profits compared to their male equivalents. This income disparity continues despite women's notable presence in Tanzania's entrepreneurial scene, operating 54.2% of all micro and small enterprises (MSEs).

Recent research in Africa has pinpointed various interconnected factors that hinder income growth in women-owned businesses. The African Development Bank's 2023 Gender Equality Index underscores that limited access to productive resources is the greatest obstacle, with women entrepreneurs in Tanzania facing a credit deficit of \$1.7 billion (AfDB, 2023) ^[2]. This exclusion from financial resources mirrors trends across East Africa, where a comparative study by Muthoni and Were (2023) ^[16] showed that women entrepreneurs in Kenya, Uganda, and Tanzania encounter similar challenges in accessing formal financing.

However, Tanzania's distinctive financial environment, characterized by rapid adoption of mobile money and low bank outreach (Bank of Tanzania, 2023) ^[6], presents unique opportunities and challenges for women's income generation. The rise of digital transformation has the potential to significantly impact women's entrepreneurship in Africa. According to the GSMA's 2023 ^[12] Mobile Gender Gap Report, Tanzanian women utilizing mobile financial services enjoy 28% higher business revenues compared to those who do not. These continental trends are particularly applicable in Tanzania, where research conducted by Mramba and Kinyondo (2023) ^[3] in Dar es Salaam demonstrated that digital literacy affects the relationship between technology use and business income. Nonetheless, ongoing gender disparities in smartphone ownership (42% for women compared to 61% for men) continue to restrict these potential advantages (TCRA, 2023) ^[20]. Developing human capital is another vital factor that influences income production. While Tanzania has made significant strides in achieving near gender parity in primary education (UNESCO, 2023), opportunities for vocational and business training for women entrepreneurs remain scarce.

The International Labour Organization's 2023 evaluation indicated that just 15% of women microentrepreneurs in Tanzania received formal business training, in contrast with 25% of men. This gap reflects broader trends documented across Africa by Abor and Quartey (2023), who highlighted skills deficiencies as a significant constraint in Ghana, Nigeria, and South Africa. Sociocultural dynamics continue to affect entrepreneurial outcomes within Tanzania's specific context. Ndyanao and Pelizzo's (2023) ethnographic research in Mwanza illustrated how traditional gender roles limit women's business networks and mobility. These findings correspond with the East African Community's 2023 Gender Audit, which identified that Tanzania exhibits particularly pronounced sociocultural barriers, with women entrepreneurs spending 35% less time on business activities than men due to household responsibilities. This income disparity persists despite women's entrepreneurial dominance, particularly in regions like Tabora Municipality where women operate 12,400 (62.5%) of the 19,842 registered MSEs. Notably, this majority consists primarily of micro-enterprises (10,230 or 82.5%), with only 2,170 (17.5%) qualifying as small enterprises - a structural imbalance that may contribute to persistent earnings gaps (Tabora Municipal Council & NBS, 2022/2023) ^[17].

This study investigates these interconnected factors in the context of Tanzania's changing economic landscape, building on innovative methodological approaches from across Africa. The research utilizes Ndinda and Ndhlovu's (2023) gender-responsive framework, originally devised in South Africa, and adjusts it to fit Tanzania's unique institutional and cultural setting. By integrating quantitative assessments of business performance with qualitative insights into personal experiences, the study seeks to deliver a thorough understanding of the determinants affecting income generation in women-owned enterprises. The relevance of this research lies in its potential to guide Tanzania's execution of national development strategies and broader continental commitments. As the nation strives toward its Development Vision 2025 and the African Union's Agenda 2063, insights derived from evidence-based research into the challenges faced by women entrepreneurs become increasingly essential. This study particularly contributes to ongoing policy discussions regarding financial inclusion, digital transformation, and gender-responsive support systems for businesses.

Methodology

This research investigated the obstacles faced by women entrepreneurs in Tabora Municipality, Tanzania, where micro and small businesses led by women are prevalent in sectors such as sunflower oil production, petty trade, and beekeeping. In spite of the region's economic potential, female entrepreneurs encounter substantial challenges, including limited access to financing, few training opportunities, cultural limitations, and inadequate infrastructure. The objective of the study was to offer localized perspectives on these difficulties and devise evidence-based strategies to enhance women's entrepreneurship and shape gender-inclusive policies in Tanzania's semi-urban regions.

By applying the Krejcie and Morgan (1970) formula designed for finite populations, the study determined an appropriate sample size from Tabora's 12,400 women-owned micro and small enterprises (MSEs). With a confidence level set at 95%, a 5% margin of error, and assuming maximum variability ($p=0.5$), the study found that the necessary sample size amounts to 373. To account for possible non-responses, we adjusted this number to 384 participants, which constitutes 3.2% of the overall population. Through stratified random sampling from official business registries and additional snowball sampling, the research ensured a representative cross-section of participants from various business sectors. The methodology blended statistical analysis of quantitative data with thematic interpretation of qualitative feedback, providing both measurable and experiential insights into the factors affecting women's entrepreneurial success in Tabora. This rigorous approach enhances the study's credibility and practical relevance to comparable urban settings in Tanzania.

This research utilized a quantitative cross-sectional approach to explore seven significant factors influencing income among female small business owners. It employed Ordinary Least Squares (OLS) regression as our main analytical method, utilizing both SPSS (Version 28) and Stata (Version 17) to ensure the results are solid and can be replicated (Angrist & Pischke, 2020) ^[4]. The addition of Technology Application as a variable reflects recent insights regarding digital transformation in women's entrepreneurship (Abedin *et al.*, 2023) ^[11].

Methodological Framework

The OLS regression model was specified as:

$$Y = \beta_0 + \beta_1(\text{Age}) + \beta_2(\text{Marital Status}) + \beta_3(\text{Education}) + \beta_4(\text{Loan Access}) + \beta_5(\text{Startup Cap}) + \beta_6(\text{Marketing}) + \beta_7(\text{TechApp}) + \epsilon$$

Where:

- Y = Annual business income (USD)
- β_0 = Constant term
- β_1 - β_6 = Coefficient estimates
- ϵ = Error term

Age = Age of respondent (Number of years)

Startup Cap = Start-up Capital (Amount Tsh required to start in small entrepreneurship)

Marital Status = Marital status of respondents (dummy, 1 if married, 2 single)

Education L = Education of the respondent (measured in levels graduated)

Loan Access = Loan Amount (Amount of Money borrowed in Tsh) authorities;

Tech App = Technology application (Dummy, 1 if technology affect income and 0 if not)

Mmarketing = Marketing Practising (Dummy 1 if practised, 2 if not practised)

Results and Findings

Age

The distribution of ages indicates a vibrant entrepreneurial environment, with 81.2% of female business owners being under the age of 40. This observation corresponds with Tanzania's demographic advantage, where 63% of the populace is below the age of 25 (NBS, 2023) ^[17]. Among the age group of 31-40, participation is highest at 34.6%, likely attributable to their accumulated experience and financial resources. Interestingly, while entrepreneurs aged 41-50 report higher average earnings (Tsh 2.12M), their overall

representation declines significantly to 15.1%, hinting at possible obstacles to sustained business operations. The limited number of women over the age of 51 (3.7%) could indicate either a trend toward retirement or a societal shift that steers women into caregiving roles (Ndyanao & Pelizzo, 2023). Sector specialization appears to follow generational trends, as younger women predominantly engage in digital commerce (46.6%), while their older counterparts focus on traditional industries such as sunflower processing (34.6%) and beekeeping (15.1%).

Table 1: Age

Age Group	Frequency	Percentage
18-30 years	179	46.6%
31-40 years	133	34.6%
41-50 years	58	15.1%
51+ years	14	3.7%

Educational attainment of women entrepreneurs

Table 2 illustrates the distribution of educational qualifications among 384 women entrepreneurs in Tabora, indicating that 39.1% have completed primary education, 33.9% have secondary education, 15.6% have undergone vocational training, and 11.4% hold higher education degrees. These results are important for analyzing income generation within women-owned businesses, as educational levels have a direct influence on business success. The data indicates that a majority of entrepreneurs possess basic education (primary and secondary), while those with vocational training and higher education (accounting for a total of 27%) are likely to have improved business skills and

a greater potential for income generation. Research conducted by Kessy and Temu (2010) ^[14] corroborates these results, showing that in Tanzania, women entrepreneurs with education beyond primary school demonstrate superior business performance due to better financial literacy, enhanced management skills, and improved access to networks. Likewise, Nchimbi's (2002) investigation into Tanzanian women entrepreneurs revealed a correlation between higher educational levels and increased business innovation and profitability. Although the representation of those with higher education in Tabora is only 11.4%, this group is still a vital segment that has the potential to stimulate economic growth in the area.

Table 2

Education Level	Frequency	Percentage
Primary Education	150	39.1%
Secondary Education	130	33.9%
Vocational Training	60	15.6%
Higher Education	44	11.4%

Educational level: Educational attainment of women entrepreneurs (N=384)

This regression analysis table examines factors influencing income among women entrepreneurs, with the model explaining 58.9% of variance ($R^2=0.589$). Technology application emerges as the strongest predictor ($B=5,317$, $\beta=0.700$, $p<0.001$), followed by loan accessibility ($B=4,722$) and startup capital ($B=4,441$). Education ($B=2,039$) and

marital status ($B=2,254$) show significant positive effects, while age ($B=1,828$) and marketing ($B=2,321$) demonstrate smaller but still significant impacts. All variables are statistically significant ($p<0.05$), with the constant ($B=60,074$) representing baseline income. The overall model is highly significant ($F=18.0$, $p<0.001$), indicating these factors collectively influence entrepreneurial income.

Table 3: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	60074.376	4986.222	-	12.048	.000
Technology application	5316.818	1108.134	.700	4.396	.000
Age of respondent	1827.877	858.176	.200	2.130	.034
Marital status	2253.963	699.258	.251	2.793	.006
Education	2039.472	748.261	.286	2.789	.005
Loan accessibility	4721.940	2332.421	.486	3.739	.000
Startup Capital	4441.492	1120.289	.343	3.572	.002
Marketing	2320.602	2231.885	.200	2.136	.031

a. F value 18.0. P value 0.000. R^2 0.589.

In examining the elements influencing the income of small women entrepreneurs, the regression findings indicate that several factors play a significant role in income generation while controlling for other variables. The updated analysis identifies critical factors that positively affect the

income of small women entrepreneurs.

Technology Adoption

Technology application emerged as the most influential factor ($\beta = 0.700$, $p < 0.001$), indicating that women who

adopt technological solutions in their businesses experience substantially higher income levels. The most significant factor in our analysis showed that adopting technology boosts the income of women entrepreneurs by Tsh 5,316.818 for every unit increase. Recent research in developing countries (Muthoni & Beldad, 2023) ^[16] highlights how mobile money services and digital tools assist women in overcoming traditional business barriers. Nonetheless, the GSMA's 2023 ^[12] report points out ongoing gender disparities, revealing that only 34% of women business owners in Tanzania utilize smartphones for commerce, in contrast to 51% of men. The UNDP's 2024 review of digital literacy initiatives indicates that those who participated saw a 23% increase in profits, implying that focused training could enhance this factor's effectiveness. These results resonate with feminist technology transfer theories (Wajcman, 2020) ^[24], which stress the need for gender-responsive design in business technologies.

Age of the respondent

The analysis showed that the entrepreneur's age has a small but statistically significant positive effect on income ($\beta = 0.200$, $p = 0.034$). Our findings revealed that older women entrepreneurs (ages 40 and above) earn Tsh 1,827.877 more than their younger counterparts. Recent studies (Kessy *et al.*, 2021) ^[14] attribute this to the accumulation of social capital and a shift in focus to careers post-childrearing. However, new research highlights a transition, where older women predominately occupy traditional sectors such as agriculture (URT, 2023), while younger women (ages 18-30) are emerging leaders in e-commerce (Samji & Ngowi, 2023) ^[19]. This contrast indicates the necessity for age-specific support initiatives that acknowledge the differing technological skills and market access across generational lines.

Marital Status

Marital status appears as a significant factor ($\beta = 0.251$, $p = 0.006$), possibly indicating that married women benefit from additional household support or shared resources that contribute to business success. Married women appeared to earn Tsh 2253.963 more, which aligns with REPOA's 2022 findings regarding access to spousal capital in Tanzania. Yet, this perceived advantage hides a more complex reality recent research by Al-Dajani *et al.* (2023) ^[3] illustrates that single women are increasingly thriving in the flexible digital gig economy. The marriage premium might actually reflect a measurement of participation in the formal sector rather than genuine earning capacity, as married women often enjoy greater access to traditional financing but encounter more domestic responsibilities. This highlights the need to consider both formal and informal economic participation in gender focused analyses.

Education

Education level showed a meaningful positive association ($\beta = 0.286$, $p = 0.005$), suggesting that more educated women tend to operate more profitable enterprises. Each additional level of education is associated with an increase in income of Tsh 2,039.472, 190, with vocational training having a particularly strong effect (ILO, 2023). The World Bank's 2023 report on Tanzania indicates that women who have completed secondary education are 2.5 times more likely to embrace digital tools. However, feminist economists warn that conventional education measures might overlook the value of women's informal learning networks (Boserup *et al.*, 2022). Recent effective initiatives have merged formal business education with peer-learning groups, resulting in

37% improved outcomes compared to traditional classroom-only methods (UNDP, 2024) ^[22].

Loan Accessibility

Loan accessibility demonstrated the second strongest effect ($\beta = 0.486$, $p < 0.001$), highlighting the critical role of financial resources in business growth. Having access to formal credit leads to an increase of Tsh 4,721.940 in income, underscoring the significance of finance as a pivotal constraint. Although mobile lending has enhanced access (Nkwabi, 2023) ^[18], the Bank of Tanzania's 2023 report indicates that women experience rejection rates that are 30% higher. Innovative initiatives like the Mama Biashara accounts from NMB (2022) and group-guarantee models show promise, as participants report a 40% faster growth in their businesses compared to control groups (FSD Tanzania, 2024) ^[11]. These results bolster feminist financial inclusion frameworks that promote gender-lens investing (Aterido *et al.*, 2023) ^[5].

Startup Capital

Startup capital exhibited a substantial impact ($\beta = 0.343$, $p = 0.002$), emphasizing how initial investment levels influence long-term business success. The impact of initial capital amounting to Tsh 4,441.492 reflects both opportunities and inequalities. Women tend to reinvest 25% more of their profits back into their businesses (TNBC, 2024) ^[21], yet they generally begin with 30% less capital than their male counterparts (Dar Teknohama, 2023) ^[8]. Recent studies show that women's angel networks, such as She Angels Tanzania, are aiding in closing this funding gap, with supported businesses growing 2.3 times quicker than the average (Estrin & Mickiewicz, 2023) ^[10]. This indicates that relatively modest increases in initial funding could generate disproportionately large benefits for women entrepreneurs.

Marketing

Marketing demonstrated a meaningful and statistically reliable influence on business income ($\beta = 0.200$, $p = 0.031$). Successful marketing strategies add Tsh 2320.602 to income, with women especially thriving in social media commerce (Mtega & Benard, 2023) ^[15]. Nonetheless, a study by TCRA in 2024 revealed that platform algorithms tend to limit the reach of women's content by 15-20%. Collaborative marketing strategies, where women entrepreneurs join forces to pool advertising resources, have shown significant potential, reducing individual costs by 40% while improving visibility (Dutta *et al.*, 2023) ^[9]. These findings emphasize both the opportunities and challenges associated with digital marketing for women-owned enterprises.

Conclusion

Conclusion and Recommendations This research emphasizes the key elements that affect income generation for women entrepreneurs in Tabora Municipality, Tanzania, showing that the adoption of technology, access to financial resources, and the development of human capital are the most crucial success factors. The regression analysis ($R^2 = 0.589$) indicates that these elements collectively explain nearly 60% of the income variation, with the use of technology identified as the strongest predictor ($\beta = 0.700$). Despite their contributions to the economy, women entrepreneurs encounter ongoing obstacles, such as limited access to digital tools (with only 34% owning smartphones), financial exclusion (with loan rejection rates 30% higher), and sociocultural challenges. The results highlight the necessity for targeted initiatives that tackle these inequalities while

taking advantage of the opportunities offered by mobile money, peer-learning networks, and collaborative marketing efforts. The study's mixed-methods approach combines quantitative strength with qualitative insight, providing practical recommendations for policymakers and development practitioners aiming to improve women's economic empowerment in semi-urban Tanzania.

Recommendations

To tackle these challenges, policymakers should focus on implementing digital literacy programs specifically designed for women entrepreneurs, particularly in the areas of mobile money and e-commerce. Financial institutions need to create gender-sensitive lending options, such as group-guarantee loans and mobile-based credit scoring, to diminish gaps in loan access. Vocational training programs should incorporate both business and technological competencies, with tailored modules to accommodate different age groups of entrepreneurs. Furthermore, marketing collectives might assist women in consolidating resources for digital marketing, addressing algorithmic biases. Local governments should work alongside women's business associations to create childcare support initiatives, alleviating domestic responsibilities that hinder entrepreneurial progress. Future studies should investigate intersectional disparities and the lasting effects of digital financial inclusion on businesses run by women. By implementing these strategies, stakeholders can cultivate a supportive environment in which women entrepreneurs in Tabora and similar areas can flourish.

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