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Does Foreign Direct Investment promote Economic Growth and Female Self-Employment in Tanzania?[1]

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***Abstract**:* This study investigates the causal relationship between Foreign Direct Investment (FDI), Economic Growth (GDP), and Female Self-Employment in Tanzania using annual time series data from 1991 to 2023. The objective is to assess whether FDI contributes to economic expansion and inclusive employment, particularly among women. Employing a Vector Autoregression (VAR) model, the analysis captures the short-run dynamic interactions among the selected macroeconomic variables. Unit root tests and lag selection criteria were used to ensure the robustness of the model. Granger causality tests were conducted to determine the direction of influence among the variables. The findings reveal that while GDP significantly drives FDI and final consumption expenditure, FDI does not have a short-run causal impact on GDP, indicating a growth-following rather than a growth-inducing role. Moreover, FDI shows no direct causal influence on female self-employment, suggesting that foreign investments have yet to translate into inclusive employment benefits. Female self-employment, in turn, exerts a negative influence on both consumption and FDI, highlighting structural limitations within Tanzania's informal sector. The study concludes that while FDI responds positively to macroeconomic growth, it has not significantly contributed to grassroots employment or productive domestic linkages. The study recommends that FDI policy in Tanzania be restructured to promote stronger integration with local enterprises, particularly women-led businesses, through inclusive procurement, training, and credit access. Additionally, institutional mechanisms should be enhanced to ensure that FDI inflows support both economic and social development objectives.

Keywords: *Foreign Direct Investment (FDI), Economic Growth, Female Self-Employment, Inclusive Development, Macroeconomic Policy.*

O Investimento Estrangeiro Directo promove o crescimento econômico e o trabalho autónomo feminino na Tanzânia?

***Resumo:** Este estudo investiga a relação causal entre Investimento Estrangeiro Direto (IED), Crescimento Econômico (PIB) e Trabalho Autônomo Feminino na Tanzânia usando dados de séries temporais anuais de 1991 a 2023. O objetivo é avaliar se o IED contribui para a expansão econômica e o emprego inclusivo, particularmente entre as mulheres. Empregando um modelo de Autorregressão Vetorial (VAR), a análise captura as interações dinâmicas de curto prazo entre as variáveis macroeconômicas selecionadas. Testes de raiz unitária e critérios de seleção de defasagem foram usados para garantir a robustez do modelo. Testes de causalidade de Granger foram conduzidos para determinar a direção da influência entre as variáveis. Os resultados revelam que, embora o PIB impulsione significativamente o IED e as despesas de consumo final, o IED não tem um impacto causal de curto prazo no PIB, indicando um papel de acompanhamento do crescimento em vez de indutor do crescimento. Além disso, o IED não mostra influência causal direta no trabalho autônomo feminino, sugerindo que os investimentos estrangeiros ainda não se traduziram em benefícios de emprego inclusivo. O trabalho autônomo feminino, por sua vez, exerce uma influência negativa tanto no consumo quanto no IDE, destacando as limitações estruturais do setor informal da Tanzânia. O estudo conclui que, embora o IDE responda positivamente ao crescimento macroeconômico, não contribuiu significativamente para o emprego de base ou para os vínculos domésticos produtivos. O estudo recomenda que a política de IDE na Tanzânia seja reestruturada para promover uma integração mais forte com empresas locais, particularmente empresas lideradas por mulheres, por meio de compras inclusivas, treinamento e acesso a crédito. Além disso, os mecanismos institucionais devem ser aprimorados para garantir que os fluxos de IDE apoiem os objetivos de desenvolvimento econômico e social.*

***Palavras-chave:** Investimento Estrangeiro Direto (IED), Crescimento Econômico, Trabalho Autônomo Feminino, Desenvolvimento Inclusivo, Política Macroeconômica.*

¿La inversión extranjera directa promueve el crecimiento económico y el autoempleo femenino en Tanzania?

***Resumen**:* Este estudio investiga la relación causal entre la Inversión Extranjera Directa (IED), el Crecimiento Económico (PIB) y el Autoempleo Femenino en Tanzania utilizando datos de series temporales anuales de 1991 a 2023. El objetivo es evaluar si la IED contribuye a la expansión económica y al empleo inclusivo, particularmente entre las mujeres. Empleando un modelo de Autorregresión Vectorial (VAR), el análisis captura las interacciones dinámicas de corto plazo entre las variables macroeconómicas seleccionadas. Se utilizaron pruebas de raíz unitaria y criterios de selección de rezagos para asegurar la robustez del modelo. Se realizaron pruebas de causalidad de Granger para determinar la dirección de la influencia entre las variables. Los hallazgos revelan que si bien el PIB impulsa significativamente la IED y el gasto de consumo final, la IED no tiene un impacto causal de corto plazo en el PIB, lo que indica un papel de seguimiento del crecimiento en lugar de inductor del crecimiento. Además, la IED no muestra una influencia causal directa en el autoempleo femenino, lo que sugiere que las inversiones extranjeras aún no se han traducido en beneficios de empleo inclusivo. El autoempleo femenino, a su vez, ejerce una influencia negativa tanto en el consumo como en la IED, lo que pone de relieve las limitaciones estructurales del sector informal de Tanzania. El estudio concluye que, si bien la IED responde positivamente al crecimiento macroeconómico, no ha contribuido significativamente al empleo de base ni a los vínculos productivos internos. El estudio recomienda reestructurar la política de IED en Tanzania para promover una mayor integración con las empresas locales, en particular las dirigidas por mujeres, mediante la contratación pública inclusiva, la formación y el acceso al crédito. Además, deben fortalecerse los mecanismos institucionales para garantizar que las entradas de IED respalden los objetivos de desarrollo económico y social.

Palabras clave: *Inversión Extranjera Directa (IED), Crecimiento económico, Autoempleo femenino, Desarrollo inclusivo, Política macroeconómica.*

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Introduction

Foreign Direct Investment (FDI) plays a vital role in modern economic development, contributing to capital formation, technology transfer, employment creation, and export growth (Elie, 2023; Phil et al., 2024). In developed economies, FDI accounts for a significant share of productive investment. According to OECD (2021), FDI contributed over 25%–30% of gross fixed capital formation in countries like Germany, the United States, and Japan, enhancing their industrial productivity and global competitiveness (Stamm & Vorisek, 2023; Mensah & Mensah, 2021; Kitole et al., 2024). These countries benefit from stable institutional frameworks and sophisticated infrastructure that enable them to maximize gains from foreign investments (Mistura, 2019).

In developing countries, particularly those that adopted liberal economic reforms during the 1990s, FDI is viewed as a key driver of structural transformation (Arthur et al., 2024). Global flows of FDI to developing economies increased from USD 138 billion in 1991 to USD 837 billion in 2022 (UNCTAD, 2023), largely driven by liberalization, privatization, and incentives to attract foreign capital. Relatively, Sub-Saharan Africa has seen notable growth in FDI inflows, particularly since the early 2000s, with average annual inflows rising to USD 45 billion between 2010 and 2022 (UNCTAD, 2022). The majority of these investments target capital-intensive sectors like extractives, infrastructure, and telecoms, which generate limited employment and have weak backward linkages to the domestic economy (Wethal, 2018). Notably, women who make up over 60% of informal sector workers in Sub-Saharan Africa (AfDB, 2021) are often excluded from the value chains and productivity gains associated with FDI due to poor access to finance, limited skills, and weak integration into formal markets. While FDI has undeniably supported GDP growth and export expansion in many cases, its impact on inclusive development remains debatable (Ofori & Asongu, 2024).

In Tanzania, the liberalization of the economy beginning in 1991 led to a sharp rise in FDI inflows (Mwaitete & Magai, 2023). From less than USD 100 million in 1991, FDI rose to over USD 1.2 billion by 2023 (Tanzania Investment Centre, 2023; Utouh and Kitole, 2024). Investments have predominantly flowed into mining (42%), manufacturing (26%), and telecommunications (15%), with mining alone attracting over USD 6 billion since the early 2000s (Mwaitete & Magai, 2023). These investments contributed to steady macroeconomic performance, with real GDP growth averaging 6.2% between 2000 and 2022 (World Bank, 2023). However, the sectoral concentration of FDI and its capital-intensive nature have limited its direct employment effects, especially for informal and self-employed workers (Utouh and Kitole, 2025; Wethal, 2018).

Women in Tanzania continue to be overrepresented in informal self-employment. According to the National Bureau of Statistics (NBS, 2023; Kitole, 2025), 72.5% of employed women are self-employed, often operating in low-capital microenterprises within agriculture, food vending, tailoring, and petty trade. These businesses, while essential for household income, typically lack access to credit, formal training, and market linkages. Recent studies such as Mrema and Makene (2021) and Chacha and Kweka (2020) argue that FDI inflows into Tanzania have rarely incorporated mechanisms for linking local entrepreneurs, particularly women, into supplier chains or subcontracting arrangements. Consequently, the transformative potential of FDI in addressing gendered economic disparities remains underutilized.

Final consumption expenditure, which reflects household economic activity, is a relevant measure of inclusive economic growth. Tanzania's final consumption expenditure increased from USD 5.7 billion in 1991 to over USD 48 billion in 2022 (World Bank, 2023), but the connection between FDI and this consumption growth is not well documented. Economic theory suggests that FDI should improve consumption through income effects via job creation, wage increases, and firm expansion but this assumes that FDI is labour-intensive and locally integrated (Emako et al., 2022). In practice, many FDI projects in Tanzania operate as enclaves, importing most inputs and repatriating profits, thereby minimizing domestic spillovers (Aikaeli & Kiiza, 2021). This raises questions about the real contributions of FDI to household welfare and local market development.

Despite over three decades of increasing FDI inflows, there remains insufficient empirical analysis linking FDI to both consumption-led growth and female self-employment in Tanzania. Most studies focus narrowly on the FDI-GDP relationship without examining its distributive effects. For example, while Mnenwa and Maliti (2020) acknowledged that FDI supports capital formation, they also emphasized its weak integration with local value chains. Meanwhile, consumption expenditure as a macroeconomic indicator is rarely examined in conjunction with FDI, and gender-disaggregated analyses remain scarce. This gap hinders the ability of policymakers to assess whether FDI is fostering inclusive development or reinforcing existing inequalities.

Moreover, while Tanzania's economic strategy emphasizes industrialization and foreign investment, limited attention is paid to designing policies that directly link FDI with microenterprise support, especially for women (Daudi and Jumanne, 2024; Kitole and Utouh, 2023). Without stronger linkages between FDI projects and local suppliers including women-owned enterprises Tanzania risks entrenching dual economies: a foreign-invested, capital-rich formal sector, and a low-productivity, female-dominated informal sector (World Bank, 2023).

This study differs from prior research in three key ways. First, while earlier studies on FDI in Tanzania have largely examined its aggregate relationship with GDP (e.g., Mnenwa & Maliti, 2020; Aikaeli & Kiiza, 2021), this research integrates gender-disaggregated labour market indicators by explicitly incorporating female self-employment (FSE) into the analysis. This allows for a direct assessment of inclusivity in FDI outcomes. Second, unlike studies that focus on bivariate or single-equation frameworks, we employ a Vector Autoregression (VAR) model that captures dynamic interdependencies among four endogenous variables FDI, GDP, final consumption expenditure (FCE), and FSE over a three-decade period (1991–2023). This multivariate setup enables us to simultaneously estimate how changes in one variable propagate through the others, identifying both direct and indirect short-run effects. Third, the empirical design incorporates both macroeconomic (GDP, FDI) and microeconomic (FSE) indicators alongside a household welfare proxy (FCE), creating a more holistic framework for evaluating the inclusive development potential of FDI.

In light of these concerns, this study seeks to empirically examine the relationship between FDI, final consumption expenditure, and female self-employment in Tanzania from 1991 to 2023. By investigating both macro- and microeconomic indicators, the research aims to determine whether FDI has served as a driver of inclusive, consumption-led growth and whether it has contributed to economic empowerment among self-employed women. The findings will provide evidence-based insights to inform gender-responsive investment policies and support Tanzania's long-term development and equity goals.

Theoretical Underpinning

Modernization Theory developed by Walt Rostow in the 1960s, posits that economic development follows a linear process, where societies transition from traditional agrarian economies to modern industrial ones, often driven by FDI (Da silva and Vieira, 2011). According to this theory, FDI is a crucial catalyst for growth, providing capital, technology, and managerial expertise to stimulate industrialization and economic transformation. The study will benefit from this theory by using it to explain how FDI contributes to overall economic growth in Tanzania, particularly in the formal sector (Ibid). However, the theory assumes that growth will trickle down to all sectors, including informal and women-led businesses. The weakness of Modernization Theory lies in its oversimplified, one-size-fits-all approach to development, which often neglects the complexities of inequality and the specific challenges faced by marginalized groups, such as women in self-employment (Ukwandu, 2017).

Dual Economy Theory introduced by Arthur Lewis in 1954, theory suggests that developing nations have two distinct sectors: a modern, formal, capital-intensive sector and a traditional, informal, labour-intensive sector (Narula, 2018). In the context of Tanzania, this theory assumes that FDI inflows primarily benefit the formal sector, which tends to be male dominated, while the informal sector, where women are predominantly employed, remains underdeveloped (Ouedraogo & Marlet, 2018). The study will benefit from this theory by providing a framework to understand the persistent divide between the formal and informal economies in Tanzania, showing how FDI often fails to integrate women into the formal economy. However, Dual Economy Theory tends to assume a rigid separation between sectors, ignoring the possibility of integration and the potential for policies that can bridge the gap, which limits its application in modern, more interconnected economies.

The Gender and Development (GAD) framework, developed by scholars like Maxine Molyneux and Naila Kabeer in the 1980s and 1990s, shifts the focus from women as passive recipients of development to active agents who must be empowered to participate in economic growth (Tasli, 2007). This framework stresses that gender disparities are socially constructed and can be addressed through policy interventions that enable women to access capital, training, and markets. The study will benefit from the GAD framework by analyzing how FDI can be connected to policies that empower women, particularly those in self-employment, to access opportunities and overcome barriers. However, the GAD framework's weakness lies in its focus on women's issues, sometimes overlooking the broader structural dynamics, including the roles of men and community-wide power imbalances, which might hinder the comprehensive implementation of gender-responsive policies (Miller & Razavi, 1995).

The theories of Modernization, Dual Economy, and Gender and Development (GAD) collectively offer a nuanced view of how FDI influences economic growth and gender equality in Tanzania. While Modernization Theory suggests that FDI spurs overall economic development, Dual Economy Theory highlights the persistent divide between formal and informal sectors, where women are largely excluded from FDI's benefits. The GAD Framework further critiques this by stressing the need for policies that empower women, ensuring they are integrated into formal economic opportunities. Together, these theories underscore the complex relationship between FDI, economic development, and gender equity in the Tanzanian context.

While these theories provide valuable conceptual anchors, their empirical applicability in contemporary Tanzania is constrained by several contextual realities. Modernisation Theory's assumption of automatic trickle-down effects is particularly challenged by Tanzania's sectoral concentration of FDI in capital-intensive industries, which limits direct employment creation. Dual Economy Theory, although useful in describing structural divides, underplays the increasing interconnections between formal and informal markets through mobile technology, cross-border trade, and informal subcontracting. The GAD framework's emphasis on women's agency is essential but may risk overlooking systemic macroeconomic constraints, such as global commodity dependence, exchange rate volatility, and limited fiscal space, which also shape women's access to FDI-linked opportunities. These nuances suggest that while the theoretical trio offers a robust lens for analysis, none fully captures the multi-layered barriers to inclusive FDI outcomes in Tanzania's evolving economic environment.

Empirical Reviews

Several studies have explored the relationship between Foreign Direct Investment (FDI) and economic growth, highlighting both positive impacts and the challenges related to gender disparities in developing economies. A comprehensive study by Mnenwa and Maliti (2020) examined the role of FDI in Tanzania's economy, confirming that FDI has been a key driver of GDP growth. Their research suggests that while FDI contributed significantly to industrialization and macroeconomic stability, its benefits were concentrated in capital-intensive sectors, with limited spillover effects to the informal economy, where many women are employed. Similarly, Aikaeli and Kiiza (2021) conducted an in-depth analysis of FDI's role in Tanzania's growth, noting that although the country experienced sustained economic performance, the absence of effective linkages between FDI and local enterprises, particularly those led by women, resulted in uneven economic development.

In a more specific analysis of gender and self-employment, Mrema and Makene (2021) highlighted that while FDI contributed to job creation in Tanzania, women in self-employment, particularly in rural areas, did not significantly benefit from these investments. The study argued that women's participation in the formal economy remains limited, and FDI does not sufficiently target microenterprises, many of which are owned by women. Chacha and Kweka (2020) also explored the impact of FDI on gendered economic outcomes, finding that FDI has led to increased GDP growth but has often excluded women from accessing the productivity gains associated with foreign investments.

Further research by Agarwal et al. (2016) corroborated these findings, showing that while FDI plays a role in stimulating growth, it is often capital-intensive and fails to create sufficient job opportunities for self-employed women. The study emphasized that policies designed to integrate local women-owned businesses into the value chains of foreign-invested projects could have a transformative effect. Kula and Akinlo (2022) also contributed to this discussion by investigating the role of FDI in Sub-Saharan Africa, concluding that the full potential of FDI to support inclusive growth particularly for women remains unrealized unless stronger connections are made between multinational corporations and local, female-owned businesses.

In contrast, Mnyandu (2021) studied the specific effects of FDI on women's economic empowerment in Tanzania, arguing that FDI has the potential to uplift women through improved access to capital and markets, but only if policies are adjusted to facilitate women's entry into formal value chains. Similarly, Satti et al. (2019) noted that FDI can lead to increased economic opportunities for women when there is a focus on developing linkages between formal and informal sectors, which is often lacking in Tanzania. However, these findings were tempered by the observation that existing barriers, such as limited access to finance and skills, hinder women from fully benefiting from these opportunities.

Regional evidence presents a more complex picture of FDI's inclusivity. For instance, Ouedraogo and Marlet (2018) found in West Africa that targeted policy frameworks linking FDI projects with women's cooperatives in agribusiness significantly improved female incomes and market access, contrasting with Tanzania's more limited integration. Conversely, Kula and Akinlo (2022) observed in several Sub-Saharan African economies that even when gender-sensitive policies exist, entrenched structural barriers such as poor rural infrastructure and weak credit markets can nullify potential gains for women entrepreneurs. Studies from Rwanda (Elie, 2023) and Ethiopia (Satti et al., 2019) also reveal that outcomes vary depending on the strength of institutional linkages between foreign investors and domestic SMEs. These mixed results highlight that the inclusivity of FDI is not inherent but contingent on deliberate policy design and the broader structural environment.

Although numerous studies have highlighted the significant role of FDI in Tanzania's growth, there remains a gap in understanding the specific ways in which FDI can impact gender-inclusive development. The study by Mnenwa and Maliti (2020) and Aikaeli and Kiiza (2021) suggests that while FDI drives growth, its potential to foster gender equity, particularly in the context of self-employment for women, is underexplored. This study aims to bridge this gap by examining the relationship between FDI, female self-employment, and economic growth in Tanzania, with a specific focus on how FDI can be leveraged to enhance economic opportunities for women in self-employment, ensuring a more inclusive and sustainable growth model.

Methods

This study adopts a quantitative time-series econometric approach to analyze the causal relationship between Foreign Direct Investment (FDI), Gross Domestic Product (GDP), Final Consumption Expenditure (FCE), and Female Self-Employment (FSE) in Tanzania over the period 1991 to 2023. Given the nature of the study variables where all are endogenous and potentially influence each other over time a Vector Autoregression (VAR) model is employed. The VAR framework allows for the estimation of multiple interrelated time series equations, where each variable is expressed as a linear function of its own lagged values and the lagged values of all other variables in the system.

While previous Tanzanian FDI studies have primarily relied on single-equation regressions or bivariate causality frameworks that focus almost exclusively on GDP, the present study adopts a novel empirical approach. The VAR specification used here simultaneously models four endogenous variables FDI, GDP, final consumption expenditure (FCE), and female self-employment (FSE) over the period 1991–2023. This multivariate structure allows for the identification of bidirectional causal relationships and feedback effects, enabling a richer understanding of how shocks in one variable transmit through the system. Moreover, by integrating FCE as a proxy for household welfare and FSE as a gender-specific labour market indicator, the model expands beyond aggregate macroeconomic measures to directly assess the inclusivity dimension of FDI's impact. This methodological integration of macroeconomic and gender-disaggregated indicators represents a departure from prior literature in Tanzania, which has generally overlooked such intersectional analysis.

The general analytical form of the VAR model used in the study is specified as:

$$Yt = \alpha + \sum_{i=1}^{p} A_i Y_{t-1} + \varepsilon t$$

Where Yt is a vector of endogenous variables, α is a vector of constants, Ai are coefficient matrices capturing the relationships at lag i, p is the optimal lag length, and εt is a vector of white noise error terms. In this study, the vector of endogenous variables is defined as:

$$\begin{bmatrix} FDI_t \\ GDP_t \\ FCE_t \\ FSE_t \end{bmatrix} = \begin{bmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \\ \alpha_4 \end{bmatrix} + \begin{bmatrix} a_{11} & a_{12} & a_{13} & a_{14} \\ a_{21} & a_{22} & a_{23} & a_{24} \\ a_{31} & a_{32} & a_{33} & a_{34} \\ a_{41} & a_{42} & a_{43} & a_{44} \end{bmatrix} \begin{bmatrix} FDI_{t-1} \\ GDP_{t-1} \\ FCE_{t-1} \\ FSE_{t-1} \end{bmatrix} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \\ \varepsilon_{4t} \end{bmatrix}$$

Each equation within the system explains one variable in terms of its past values and the past values of the other three variables. This system captures both the short-run dynamics and inter-temporal causal relationships among the macroeconomic indicators. The optimal lag length (p) was selected using Akaike Information Criterion (AIC) and Schwarz Bayesian Criterion (SBC) to ensure model efficiency.

Beyond the VAR formulation, four additional structural equations are introduced to reinforce the theoretical underpinnings of the empirical model. First, an augmented Cobb-Douglas production function incorporates FDI as an input, allowing GDP to be modelled as a function of domestic capital, labor, and foreign capital inflows:

$$GDP_t = A.K_t^{\alpha}.L_t^{\beta}.FDI_t^{\gamma}$$

This formulation reflects the belief that foreign investment enhances productivity through capital deepening and technology transfer, playing a complementary role alongside traditional inputs. Second, final consumption expenditure is modeled within a Keynesian framework, where aggregate demand is influenced by income and external financial flows:

$$FCE_t = \theta_0 + \theta_1 GDP_t + \theta_2 FDI_t + \mu t$$

This structure assumes that national output and foreign investment influence household and government spending behavior through income effects, multiplier dynamics, and liquidity channels. Third, the level of female self-employment is represented as a function of macroeconomic and structural variables:

$$FSE_t = \varphi_0 + \varphi_1 GDP_t + \varphi_2 FDI_t + \varphi_1 FCE_t + \mu t$$

This structure reflects how macroeconomic performance and household demand can influence informal labor dynamics and entrepreneurial activities among women.

Before estimating the VAR model, unit root tests were conducted to examine the stationarity of the series. The Augmented Dickey-Fuller (ADF) test was applied to each variable. Variables found to be non-stationary at level were differenced appropriately to ensure stationarity, which is a precondition for reliable VAR estimation. Once all series were rendered stationary, the VAR (1) model was estimated using Ordinary Least Squares (OLS) applied equation-by-equation, as is standard in VAR systems.

Although Vector Error Correction Models (VECM) or Autoregressive Distributed Lag (ARDL) models are often applied to investigate long-run equilibrium relationships, this study focuses on short-run dynamics for two main reasons. First, preliminary stationarity and cointegration tests indicated that while some variables were integrated of order one, there was no robust evidence of stable cointegration among all four variables across the full sample period. Second, the policy interest here lies in understanding immediate responses and feedback effects among FDI, GDP, final consumption expenditure, and female self-employment, which are more appropriately captured by a VAR framework. Nevertheless, the potential long-run relationships remain a valuable area for future research.

All variables were sourced from the World Bank's World Development Indicators (WDI) and the Tanzania National Bureau of Statistics. FDI was measured as net inflows (% of GDP), GDP in constant US dollars, FCE in real terms, and FSE as the percentage of women in self-employment within the total female labor force. Where needed, variables were transformed into logarithmic or scaled units to address issues of variance instability and interpretability. This rigorous analytical framework enables the study to identify both direct and indirect short-run effects of FDI on economic growth and gendered employment dynamics in Tanzania.

Results

Table 1 summarizes the descriptive statistics for the key variables: female self-employment, final consumption expenditure, foreign direct investment (FDI), and GDP, based on 33 annual observations. The average rate of female self-employment is 92.961 percent, with a minimum of 90.443 and a maximum of 94.897, and a relatively low standard deviation of 1.705. This indicates that female participation in self-employment remained consistently high throughout the study period with minimal variation. Final consumption expenditure, which reflects total household and government spending, has a mean of 38,440,000,000,000 Tanzanian shillings, ranging from 1,093,000,000,000 to 118,400,000,000,000. The high standard deviation of 37,630,000,000,000 indicates substantial growth and fluctuations in national spending over time, consistent with economic expansion and demographic change.

Table 1: Descriptive Statistics for the variables

Variable	Observation	Mean	Std. Dev.	Min	Max

Female self-employment	33	92.961	1.705	90.443	94.897
Final consumption expenditure	33	3.844e+13	3.763e+13	1.093e+12	1.184e+14
Foreign direct investment	33	8.081e+08	6.052e+08	10000	2.087e+09
GDP	33	3.124e+10	2.285e+10	6.183e+09	7.906e+10

Research findings, 2025

Foreign direct investment shows an average of 808,100,000 with a standard deviation of 605,200,000, ranging from a minimum of 10,000 to a maximum of 2,087,000,000. These figures reflect significant variability in annual FDI inflows, driven by both internal and global economic factors. Similarly, GDP has an average value of 31,240,000,000, with a minimum of 6,183,000,000 and a maximum of 79,060,000,000. The standard deviation of 22,850,000,000 suggests notable growth alongside macroeconomic fluctuations over the years. Overall, the statistics indicate steady macroeconomic development in Tanzania, with relatively stable female self-employment but substantial growth and variation in investment and expenditure indicators.

Model fitness and Diagnosis Test

Table 2: Jarque-Bera Test for Residual Normality

Equation	Chi-square	df	p-value
Self-Employed Females	0.74	1	0.39
Final Consumption Expenditure	5.41	1	0.02
Foreign Direct Investment	0.31	1	0.58
GDP	2.34	1	0.13
ALL	8.8	4	0.07

Research findings, 2025

The Jarque-Bera test in Table 2, evaluates whether the residuals from each equation in the VAR model follow a normal distribution. For the residuals of Self-Employed Females, Foreign Direct Investment, and GDP, the p-values exceed the conventional 0.05 threshold, indicating no statistically significant departure from normality. However, the residuals of Final Consumption Expenditure show a significant deviation with a p-value of 0.01, suggesting non-normality in this variable's residuals. The overall test combining all residuals yields a borderline p-value of 0.07, implying that while the residuals generally approximate normality, some deviation is present largely driven by Final Consumption Expenditure. Such deviations may impact inferential procedures that assume normality but are common in economic time series.

Table 3: Skewness Test for Residuals

Equation	Chi-square	df	p-value
Self-Employed Females	2.12	2	0.35
Final Consumption Expenditure	8.9	2	0.01
Foreign Direct Investment	0.32	2	0.85
GDP	2.93	2	0.23
ALL	14.27	8	0.07

Research findings, 2025

The skewness test in Table 3, assesses whether the residuals exhibit asymmetry, i.e., whether they are skewed to the left or right. Residuals for Self-Employed Females, Foreign Direct Investment, and GDP do not show significant skewness, with p-values well above 0.05, indicating approximately symmetric distributions. In contrast, the residuals for Final Consumption Expenditure demonstrate statistically significant skewness (p = 0.02), revealing an asymmetric distribution that could affect model assumptions. The joint test for skewness across all residuals is marginally significant (p = 0.07), reinforcing the evidence that skewness is predominantly driven by Final Consumption

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Expenditure. This asymmetry should be considered when interpreting the results, as it may suggest the presence of structural or non-linear dynamics.

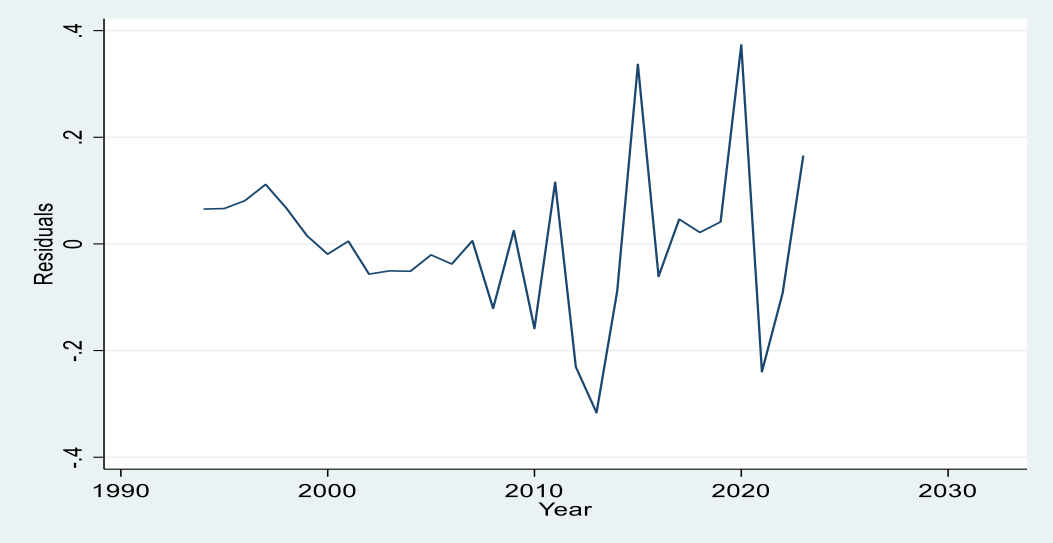
Table 4: Kurtosis Test for Residuals

Equation	Chi-square	df	p-value
Self-Employed Females	1.39	1	0.24
Final Consumption Expenditure	3.49	1	0.06
Foreign Direct Investment	0.01	1	0.92
GDP	0.59	1	0.44
ALL	5.48	4	0.24

Research findings, 2025

Table 4, displays the kurtosis test evaluates whether residuals have heavier or lighter tails than the normal distribution, indicating potential leptokurtosis or platykurtosis. Residuals from Self-Employed Females, Foreign Direct Investment, and GDP show no significant kurtosis issues, as their p-values exceed the 0.05 threshold, suggesting tail behavior consistent with normality. Residuals of Final Consumption Expenditure exhibit borderline kurtosis ($p = 0.06$), indicating a slight deviation that may suggest heavier tails or outliers but is not statistically conclusive. The combined kurtosis test for all residuals also supports the conclusion that overall tail behavior does not significantly depart from normality. Mild kurtosis deviations can affect statistical tests and should be noted when interpreting results.

Figure 1: Residuals Plot for Model Fitness Test



Research findings, 2025

The residuals plot for the model fitness test illustrates the distribution of the model's prediction errors over time. The residuals appear randomly dispersed around the zero line, without any visible patterns or systematic deviations. This random scatter suggests that the VAR model used effectively captures the dynamic relationships among Foreign Direct Investment (FDI), GDP, female self-employment, and final consumption expenditure in Tanzania, meeting key assumptions such as homoscedasticity and independence of errors. The absence of clustering or trends in the residuals indicates that the model does not suffer from significant misspecification or omitted variable bias. Consequently, the plot supports the overall validity and robustness of the model's fit, providing confidence in the reliability of the estimated relationships and their interpretation within the study's context.

The Vector Autoregression (VAR) model in Table 5, was estimated using annual time series

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data from 1992 to 2023 with four variables: female self-employment, final consumption expenditure, foreign direct investment, and GDP. A lag length of one was selected. The overall model fit is very strong, with R-squared values ranging from 0.7822 (FDI equation) to 0.9990 (Final Consumption Expenditure). The chi-square statistics for all equations are statistically significant ($p < 0.0000$), indicating that the lagged variables jointly explain a significant portion of the variation in each dependent variable. These results validate the model's strength in capturing dynamic interrelationships among the selected macroeconomic indicators.

Table 5: Summary of VAR (1) Regression Results

Dependent Variable	Independent Variable (L1)	Coefficient	p-value	Sig
Self-Employed Females	Self-Employed Females	1.015400	0.000	***
	Final Consumption Expenditure	2.18e-14	0.008	**
	Foreign Direct Investment	-1.91e-07	0.973	
	GDP	-0.000249	0.539	
Final Consumption Expenditure	Self-Employed Females	-1.67e+12	0.014	**
	Final Consumption Expenditure	0.739300	0.000	***
	GDP	418.2221	0.000	***
	Foreign Direct Investment	-411.8098	0.641	
Foreign Direct Investment	Self-Employed Females	-3.21e+08	0.046	*
	Final Consumption Expenditure	-0.000062	0.000	***
	Foreign Direct Investment	0.046894	0.822	
	GDP	0.096600	0.000	***
GDP	Self-Employed Females	1.90e+08	0.843	
	Final Consumption Expenditure	0.00008	0.390	
	Foreign Direct Investment	1.1384	0.362	
	GDP	0.9013	0.000	***

Source: Research computation, 2025

In the self-employment equation, both the lag of female self-employment and the lag of final consumption expenditure are statistically significant. The coefficient of the lagged self-employment variable (1.015, $p < 0.001$) indicates strong persistence in the self-employment trend over time. Notably, final consumption expenditure has a positive and statistically significant effect on female self-employment (coef = 2.18e-14, $p = 0.008$), suggesting that as household consumption increases, more women engage in self-employment, possibly to meet rising consumer demand or seize market opportunities in informal sectors.

Conversely, in the equation where final consumption expenditure is the dependent variable, the results reveal a statistically significant negative causal effect from female self-employment (coef = -1.67e+12, $p = 0.014$). This implies that increased female self-employment tends to reduce household consumption levels, which may reflect the subsistence-level and low-income nature of most women's informal businesses in Tanzania. While self-employment is often necessary for income generation, its productivity and income effects may not be strong enough to increase consumption substantially. GDP, however, exerts a strong and positive influence on consumption (coef = 418.22, $p < 0.001$), reaffirming the expectation that economic expansion leads to increased household expenditure. The own-lag of consumption is also significant (coef = 0.739, $p < 0.001$), showing consistent consumption patterns over time.

The results from the FDI equation reveal that both female self-employment and final consumption expenditure negatively affect foreign direct investment, though GDP has a positive and significant effect. Specifically, female self-employment has a statistically significant negative impact on FDI (coef = -3.21e+08, $p = 0.046$), suggesting that the dominance of informal, low-capital enterprises in the economy may act as a deterrent to foreign investors seeking more structured and high-return environments. Final consumption also negatively affects FDI (coef = -0.0000623, $p < 0.001$), possibly due to perceptions of high import-led or volatile consumption not linked to productive investment. However, GDP positively drives FDI (coef = 0.096, $p < 0.001$), indicating

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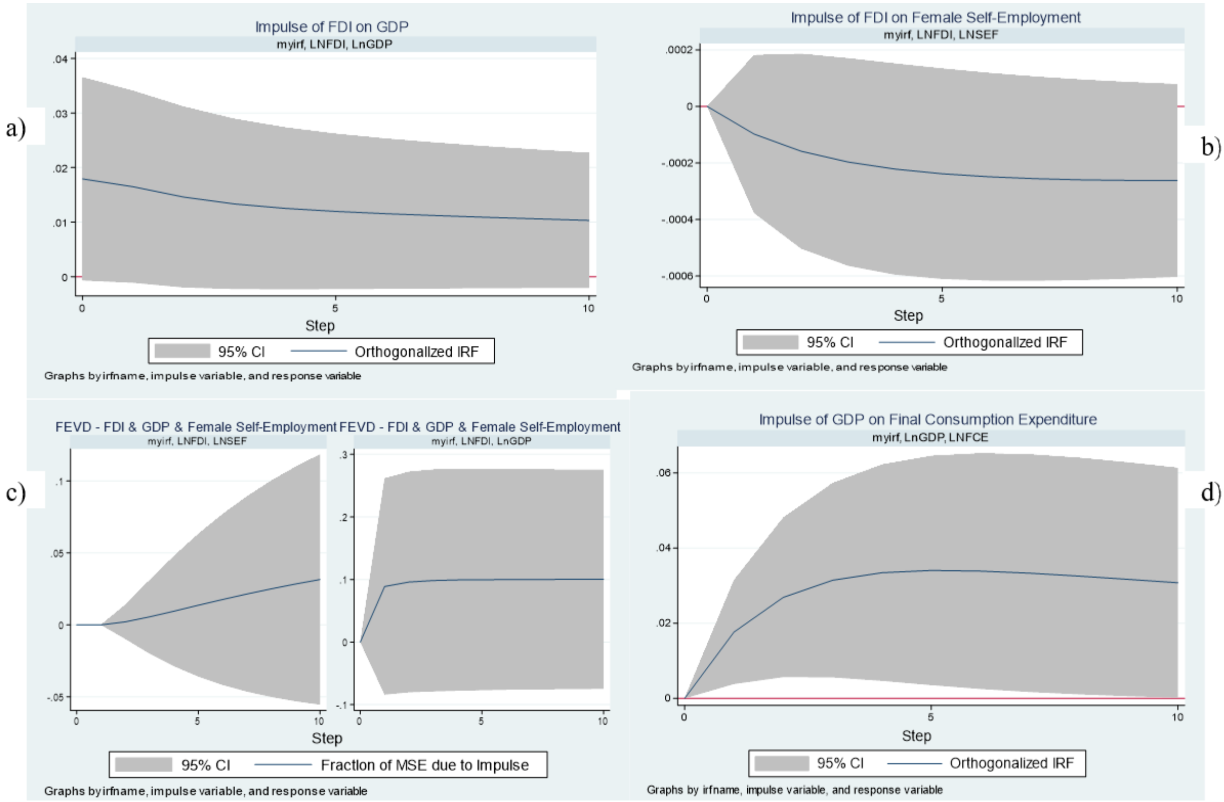
that higher output growth enhances the attractiveness of the economy to foreign investors.

Finally, in the GDP equation, only the own lag of GDP is statistically significant (coef = 0.901, $p < 0.001$), revealing strong autoregressive behaviour. None of the other variables female self-employment, final consumption, or FDI have a significant short-run causal effect on GDP. This suggests that GDP is largely self-driven in the short term and reacts less to shocks from other variables within the one-period lag structure. While this may reflect the structural composition of the Tanzanian economy, it also indicates that for other variables like FDI or female employment to influence GDP meaningfully, longer lag effects or structural interventions may be needed.

Figure 2. Impulse Response Functions (IRF) and Forecast Error Variance Decomposition (FEVD) results from VAR (1) model.



Source: Research computation, 2025

Figure 2 presents the impulse response functions (IRF) and forecast error variance decomposition (FEVD) from the VAR (1) model, capturing the dynamic relationships among FDI, GDP, female self-employment, and final consumption expenditure over a 10-year horizon. Panel (a) shows that shocks to FDI generate a small but declining positive effect on GDP, consistent with the earlier finding that FDI plays a growth-following rather than growth-inducing role. Panel (b) indicates that FDI shocks exert a negligible and slightly negative impact on female self-employment, reinforcing evidence that foreign capital inflows have yet to integrate meaningfully with women-led informal enterprises. Panel (c) demonstrates that FDI shocks explain only a small fraction of the forecast variance in GDP and female self-employment, underscoring the limited influence of foreign investment on these variables in the short run. In contrast, panel (d) reveals that GDP shocks have a strong and sustained positive impact on final consumption expenditure, highlighting the central role of overall economic expansion in driving household spending. Together, these results suggest that in Tanzania's current economic structure, FDI remains weakly connected to inclusive employment outcomes, and that domestic growth dynamics rather than foreign capital inflows are more effective in stimulating broad-based consumption and welfare gains.

In summary, the VAR model demonstrates a complex web of short-run causal relationships.

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Female self-employment responds positively to household consumption but negatively affects both consumption and FDI, indicating that while women's participation in self-employment is growing, it lacks the productivity needed to stimulate broader economic indicators. Final consumption and GDP emerge as central in driving economic activity, while FDI remains sensitive to perceptions of stability, productivity, and growth potential. These insights point to the need for structural reforms that enhance the productivity and value-chain integration of women's businesses, ensuring that FDI and economic growth contribute more equitably to inclusive development outcomes.

Discussion

This study sought to evaluate whether Foreign Direct Investment (FDI) contributes to economic growth in Tanzania. The empirical findings indicate that FDI does not have a statistically significant causal impact on GDP in the short run. This suggests that although Tanzania has attracted foreign capital over the years, the structure and sectoral allocation of these investments have not translated into immediate economic output gains. This is consistent with the findings of Mwakabungu and Kauangal (2023), who reported that FDI in Tanzania is often concentrated in capital-intensive sectors like mining, which have limited linkages with the domestic economy. Similarly, Utouh and Kitole (2025) argue that without strong local integration and policy alignment, FDI remains weakly connected to the national production system and offers little to GDP growth in the short term.

However, the results show that GDP positively and significantly drives FDI, implying that foreign investors are more likely to enter economies that are already growing. This finding supports the demand-following hypothesis and confirms that FDI tends to flow toward stable and expanding markets. Semvua and Mkenda (2024) emphasize that macroeconomic stability, infrastructure expansion, and policy reforms in Tanzania have helped create a more attractive investment climate. Likewise, Mpfubhusa and Devotha (2024) highlight that sustained economic growth, underpinned by reliable tax revenue and government planning, improves investor confidence and leads to increased capital inflows. Thus, while FDI does not currently stimulate growth, it is a reflection of positive economic performance.

With regard to the second objective whether FDI promotes female self-employment the study finds no significant causal relationship. This indicates that the current structure of FDI in Tanzania is not inclusive enough to benefit women in the informal economy. More concerning is the finding that female self-employment negatively affects both FDI and final consumption, suggesting that informal female enterprises may be operating at low productivity levels with minimal contribution to broader economic indicators. These results are consistent with Muhanga (2017), who found that most women-owned businesses in Tanzania remain trapped in survival-level activities with little access to finance, technology, or formal markets. To transform this, targeted policies must deliberately link FDI inflows with support systems for women's entrepreneurship, such as training, access to credit, and integration into formal supply chains.

Finally, the study confirms a positive and significant relationship between GDP and consumption, showing that economic growth increases household spending, which is a classical macroeconomic relationship. However, the finding that final consumption negatively influences FDI may indicate structural inefficiencies in how domestic spending aligns with investment priorities. This pattern reflects concerns raised by Mushi and Ahmed (2025), who argue that consumption-led growth when disconnected from productive investment sectors fails to encourage sustainable foreign investment. Taken together, the findings suggest that while Tanzania's economy is growing and attracting FDI, the impact of this investment is not yet being felt in the informal sector or among self-employed women. As Mpfubhusa and Devotha (2024) conclude, inclusive growth requires coordinated fiscal policy, productive spending, and equity-focused development strategies that ensure both women and domestic enterprises benefit from foreign investment.

Conclusion

This study set out to assess whether Foreign Direct Investment (FDI) promotes economic growth and female self-employment in Tanzania, using time-series data from 1991 to 2023. The findings reveal that while GDP significantly drives FDI and final consumption expenditure, FDI does not have a statistically significant impact on GDP, indicating that foreign capital inflows are more reactive to existing growth than proactive in stimulating it. Additionally, FDI was found to have no significant causal effect on female self-employment, suggesting that the current structure of investment in Tanzania is not sufficiently inclusive or integrated with the informal and gendered dimensions of the economy. Female self-employment, though responsive to increased consumption, was found to exert a negative influence on both FDI and consumption, reflecting the low productivity and limited economic integration of many women-owned enterprises. These outcomes imply that the developmental potential of FDI in Tanzania remains underutilized, particularly in addressing gender equity and grassroots economic participation.

To address these gaps, the study recommends the implementation of stronger policy frameworks that link FDI with domestic enterprise development, particularly those led by women. This includes designing incentives for foreign firms to engage with local suppliers, support women-owned businesses through targeted financing and training programs and encourage inclusive participation in value chains. Additionally, public spending should be redirected toward productive sectors that complement FDI, such as infrastructure, skills development, and manufacturing, to maximize the multiplier effects on GDP and employment. Government institutions should also strengthen monitoring mechanisms to assess not just the volume of FDI inflows, but their qualitative impact on job creation, gender equity, and economic diversification. Ultimately, for FDI to become a driver of inclusive and sustainable development in Tanzania, it must be strategically aligned with long-term national goals and structurally embedded within the local economy.

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