Women's Economic Empowerment in Tanzania: A Comparative Analysis of Government and Non-Government Programmes

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Abstract
Women's economic empowerment is a central focus of development initiatives in Tanzania, yet its measurement across economic empowerment programmes remains limited. This study examines the levels and determinants of women's economic empowerment from 385 small-scale livestock fattening, assessed using the Project-Level Women Empowerment in Agricultural Index and fractional logit regression. Results show that women in non-government programmes demonstrate higher level of economic empowerment (85.5%) than those in government programme (59.2%). The study identifies married women, education, training, alternative loan and sociocultural norms as factors influencing economic empowerment levels. While economic empowerment programmes mitigate women's constraints, their effectiveness diminishes when training misaligns with women practical needs and in communities with low supportive sociocultural norms. To enhance empowerment, programmes should tailor training content to women needs, adopt community-based awareness campaigns to enhance spousal engagement and strengthen service delivery systems. These measures can foster inclusivity and improvement in women's economic empowerment.

Keywords: Women Economic Empowerment; Economic Empowerment Programmes; Tanzania
JEL Classification Codes: J16, O15, H43, I38

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1. Introduction

Women constitute 49.7 percent of the global population, yet their potential for economic growth and empowerment remains underutilized (Carneiro, 2023; Ma'ruf *et al.* 2024). Although often framed as a moral imperative, empowering women is increasingly recognized as a strategic necessity for achieving inclusive and sustainable development (Gugan *et al.* 2024). It thus contributes to poverty reduction and fosters investments in education, health, and nutrition at household and community levels (Kabeer, 2005; Duflo, 2012; Balasubramanian, 2024). Furthermore, empowering women strengthens their control over economic decisions and improves livelihoods (Kabeer *et al.* 2009; OECD 2023). Despite these benefits, women in developing countries often face limited access to resources such as knowledge and financial capital, constraining their economic opportunities and development outcomes (Ahmad & Muhammad, 2015; Njau, 2023; Malmström *et al.* 2024).

Economic Empowerment Programmes (EEPs) have emerged as one of the key instruments for promoting women's economic participation. A growing body of literature acknowledges that these programmes, through resource provision, have improved income, health and nutritional status (Miller *et al.* 2016; Bryan & Garner, 2022; Lambert *et al.* 2023). This indicates that access to resources, including agricultural financing, is recognized as an important pathway for economic growth (Paul & Lema, 2018). However, access to resources alone does not guarantee empowerment (Njuki *et al.* 2023). Instead, women's empowerment is recognized as a multidimensional process shaped by their ability to exercise decision making power, as well as by personal, institutional and sociocultural factors (Khalaf & Saqfalhait 2020; Raza & Leghari 2020; Nyakapene *et al.* 2022). Furthermore, implementation challenges such as loan mismanagement and repayment issues can limit programme effectiveness (Gachuru & Mwirigi, 2013; World Bank, 2018; Kiriti-Nganga & Mogeni, 2020). Similar concerns have been raised in Tanzania, where studies primarily focus on loan performance (Kimario, 2014; Mgaya, 2014; Rugeiyamu *et al.* 2021).

Although global scholars have explored EEPs, important knowledge gaps remain. While these studies offer insights into programme implementation, loan performance and outcomes such as income growth, they provide limited attention to whether EEPs have achieved their primary objective of empowering marginalized women. Consequently, evidence remains limited on how programmes are associated with women's multidimensional empowerment levels. This study aims to address this gap by examining the extent of women's economic empowerment among beneficiaries and how this differs across programmes.

Tanzania offers a pertinent empirical setting because women continue to face financial (Mkenda, 2023; Malima, 2024) and sociocultural barriers, including restrictive gender norms (Njau, 2023), despite the implementation of EEPs. These norms are reinforced by the societal acceptance of male patriarchal dominance in marital relationships, which further constrains women's autonomy in economic engagement and decision making processes (Ferrant & Thim, 2019; Chopra *et al.* 2020). The Tanzania government and its development partners have initiated programmes that provide opportunities to examine whether these programme contexts are associated with differences in women's empowerment. This endeavor resonates with Sustainable Development Goals (SDGs) 5 and 8, on gender equality, decent work and economic growth, respectively (Galiè *et al.* 2019) as programmers prioritize women's empowerment as a driver of economic growth.

This study focuses on government and non-government EEPs in Tanzania that facilitate women's access to loans and training, thereby enhancing their economic agency. The government has implemented a 10 percent loan programme known as Women and Youth Development Fund (WYDF) under Local Government Authority (LGA) (Rugeiyamu *et al.* 2021). The LGA manages this programme by allocating 10 percent of its revenue to provide zero-interest, collateral-free loans and training (URT 2019; URT 2021). Conversely, non-government loan programmes such as Village Community Banking (VICOBA), Maasai Women Development Organization (MWEDO) and Ujamaa Relief and Cooperation Trust (URCT) offer loan with lower interest rates and training, primarily benefiting women (Lindvert *et al.* 2015; Naegels *et al.* 2018). These programmes distinction provides an opportunity to examine whether the context of these programems is associated with varying levels of women empowerment.

Guided by Empowerment Theory and Kabeer's framework for understanding the empowerment process and its mechanism, this study addresses the following key questions: To what extent are women participating in government and non-government EEPs economically empowered? This involves assessing whether women in these programmes experience economic empowerment through access to loans and training and how socioeconomic and institutional factors influence Women Economic Empowerment Level (WEEL). Rather than establishing a causal impact through comparison with non-participants, this study measures variations in economic empowerment among women already enrolled in EEPs. The study enriches the literature on women's economic empowerment by offering one of the few comparative analyses of empowerment levels among beneficiaries across programmes. This comparison identifies how differences in programmes design and implementation contribute to empowerment. It also provides country-specific evidence on EEPs, offering insights to inform policymakers and development practitioners for improving EEPs design and implementation.

The remainder of the paper is structured as follows: Section two highlights theoretical and conceptual review. Section three describes the methodology adopted in the study, while the fourth section presents and discusses the findings and the fifth section concludes the paper.

2. Theoretical and Conceptual Review

2.1 Theoretical framework

This study is grounded in Perkins and Zimmerman (1995) empowerment theory and Kabeer's (2005) empowerment framework. The integration of these two perspectives is important because it explains the multidimensional process and pathways through which women achieve economic empowerment. Perkins and Zimmerman define empowerment as a dynamic, multi-level process through which individuals gain control over their lives. Zimmerman emphasizes that empowerment is not a fixed state, but an evolving process influenced by contextual factors such as age, life stage and institutional structure. This dynamism is particularly relevant in this study, as evidenced by the interaction between individual characteristics such as marital status, age and programme participation (Coley *et al.* 2023). Empowerment, therefore, is not merely access to resources; it is a fluctuating process influenced by social positioning and life course transitions. Zimmerman's view also underscores that while actions or activities may be empowering, the outcomes of such processes vary, depending on individual and structural context.

Building on Zimmerman's conceptualization of empowerment as a dynamic process, Kabeer provides a framework for understanding how that process unfolds. Kabeer's defines empowerment as a process involving the interrelated dimensions of resources, agency and achievements. While access to resources such as training, group participation and financial capital can enable empowerment but do not guarantee it due to broader structural constraints such as entrenched gender norms and institutional power dynamics (Hansen 2015). Woman's empowerment depends on her environment (Pitt *et al.* 2006). This includes household dynamics that affect empowerment levels (Malhotra *et al.* 2002). In this sense, agency dimension evident in women's ability to make decisions over economic activity, income, mobility and time is both shaped and limited by their sociocultural and institutional context. Agency can be considered an intermediate outcome indicating a change (Buvinic & Furst-Nichols, 2015). A change occurs in decisions on economic activities, autonomy in income, control over loan usage, leadership, mobility and time allocation. However, in disempowered settings converting resources into agency is often restricted (Kabeer, 1999).

Third dimension achievements refer to the consequences of choices made (Kabeer 1999). According to Kabeer (2005), a change in one dimension can lead to changes in others. This acknowledges that empowerment is not a linear process, outcomes may regress or stagnate if agency is not supported by enabling environment. This insight also highlights how factors like age, marital status and education interact with structural power to influence empowerment pathways (Akram, 2018). For example, in households where decisions are dominated by a male partner or where women have limited bargaining power, the transformative of empowerment intervention can be constrained (Agarwal, 1997). Also, empowerment variation in relation to age groups where older women may face greater structural constraints due to accumulated responsibilities, shifting social roles and long-standing exposure to restrictive norms, which in turn influence how empowerment unfolds over time.

Scholars differ on how to measure women's empowerment, making universal comparison difficult. For example, Galiè, (2013) measured women's empowerment and its relationship with food security using assets, income, and time. This aligns with Njuki *et al.* (2022), who examined the pathway between gender equality, women empowerment and the food system. Elsewhere, Salcedo *et al.* (2024) used health, the material environment, social relationships, and physical integrity as multidimensional measures. Similarly, Cheston & Kuhn (2002) focused on agency, autonomy, individual potential, self-determination, and self-reliance as measures of women's empowerment. Eerdewijk *et al.* (2017) considered resources, agency, and institutional structures as key indicators. These varied frameworks demonstrate empowerment complexity and multidimensionality, providing opportunities for further research (Sharaunga *et al.* 2016). Moreover, these diverse frameworks align with the Kabeer model (Kabeer 1999), which provides a structured approach for understanding women's empowerment.

2.2 Conceptual framework

Women's economic empowerment is shaped by EEPs, socioeconomic and institutional factors as indicated in Figure 1. This framework builds on Kabeer's theoretical model viewing empowerment as a process involving the interrelated dimensions of resources, agency and achievements. Within this framework, the support offered by both government and non-government EEPs as loan and training, provides resources, while agency refers to women ability to make strategic choices. The achievement is reflected in WEELs.

The framework assumes that EEPs influence women to engage in income-generating activities through providing resources. Women who receive loans and training are more likely to achieve higher levels of economic empowerment. Providing loan alone without training may limit empowerment, as women may lack the financial capability to manage funds effectively or experience debt stress and household tensions. Training, by contrast, strengthens agency through enhanced business knowledge, confidence and decision-making power, enabling women to effectively utilize loans and maximize returns. However, if loans are inadequate or diverted towards short term needs, their effect may be limited (Lemut, 2017).

Moreover, providing resources does not guarantee empowerment (Kumari, 2020). Receiving loans is different from control over their usage and ability to derive benefits. Women's ability to transform resources into achievements is mediated by either their agency or the broader environment in which they operate. For instance, agency, manifests in decision-making power in economic activities, autonomy in income, self-efficacy, control over loan usage, leadership, assets ownership and time allocation. Additionally, agency is also influenced by socioeconomic and institutional context that governs women's behavior and interactions (Alsop *et al.* 2006). For example, sociocultural norms may prohibit women from engaging in income generating activities, while access to extension services and policy awareness improve women's confidence and informed choices (ILO 2020; Lecoutere *et al.* 2023; Sarma *et al.* 2024). This framework shows the dynamic process of empowerment where resources, agency and achievement interact iteratively. The framework provides the foundation to test whether EEPs empower women and if socioeconomic and institutional factors influence Women's Economic Empowerment Levels (WEELs).

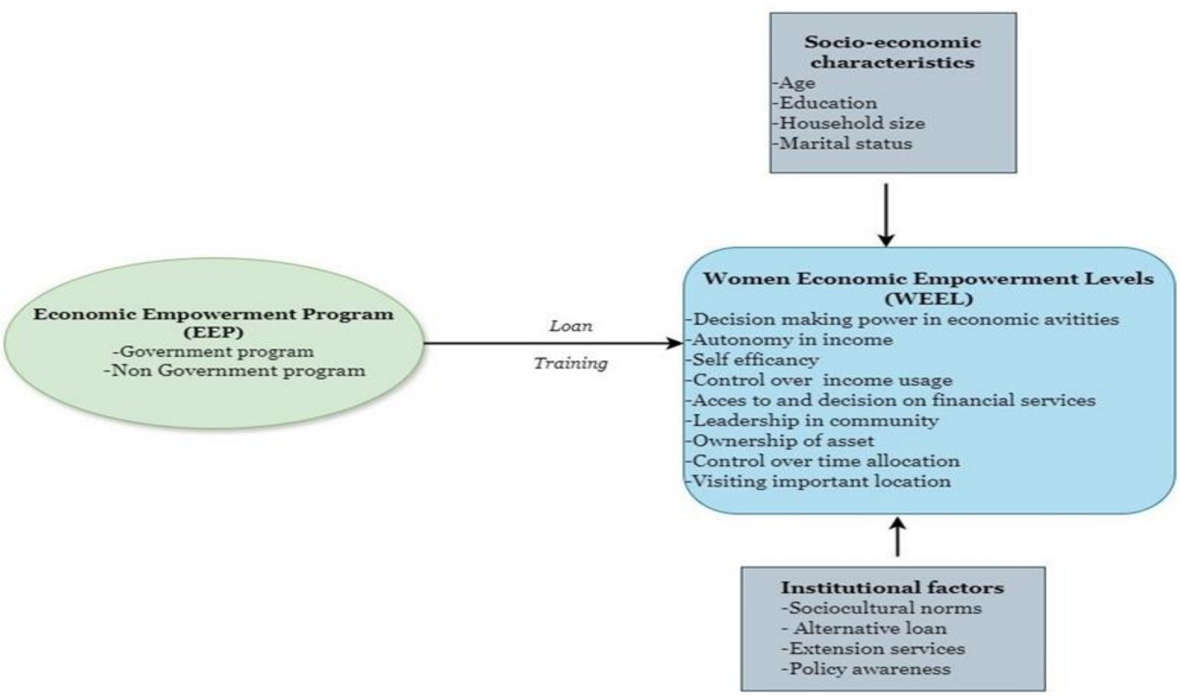

Figure 1. Conceptual Framework for Women Economic Empowerment
Source (s): Authors' conceptualization based on literature and theoretical review

3. Methodology

3.1 Study area

The Arusha and Mara regions in Tanzania are the selected study area (Figure 2), due to their varying loan disbursement and repayment trends, as reported by the Controller and Auditor General (CAG) (URT, 2021). Arusha is among the leading regions after Dar es Salaam in terms of large loan disbursements. In 2021/22, the region allocated three billion Tanzania Shillings (TZS) to support women, youth and people with disabilities. In contrast, Mara is among the regions with the lowest loan disbursement, allocating 1.4 billion TZS in 2021/22. The CAG report indicates that Mara is underperforming, while Arusha shows better loan repayment performance.

To ensure regional diversity and representation of both government and non-government EEPs efforts, two districts from each region were selected: Longido and Monduli Districts in Arusha, and Rorya and Tarime District in Mara. These districts were chosen for their high livestock populations and active participation in economic empowerment programmes. These include both government-led initiative being 10 percent programme and non-governmental interventions, specifically VICOBA and NGO-led interventions such as MWEDO and UCRT, which are mostly widespread and support women through micro loan, training and social support network. The diversity in programme types and district contexts allow for comparative analysis of how different programmes contribute toward WEELs. A quantitative research design was employed, guided by Pro-WEAI framework (Meinzen-Dick et al. 2019), to assess women's economic empowerment through measurable indicators.

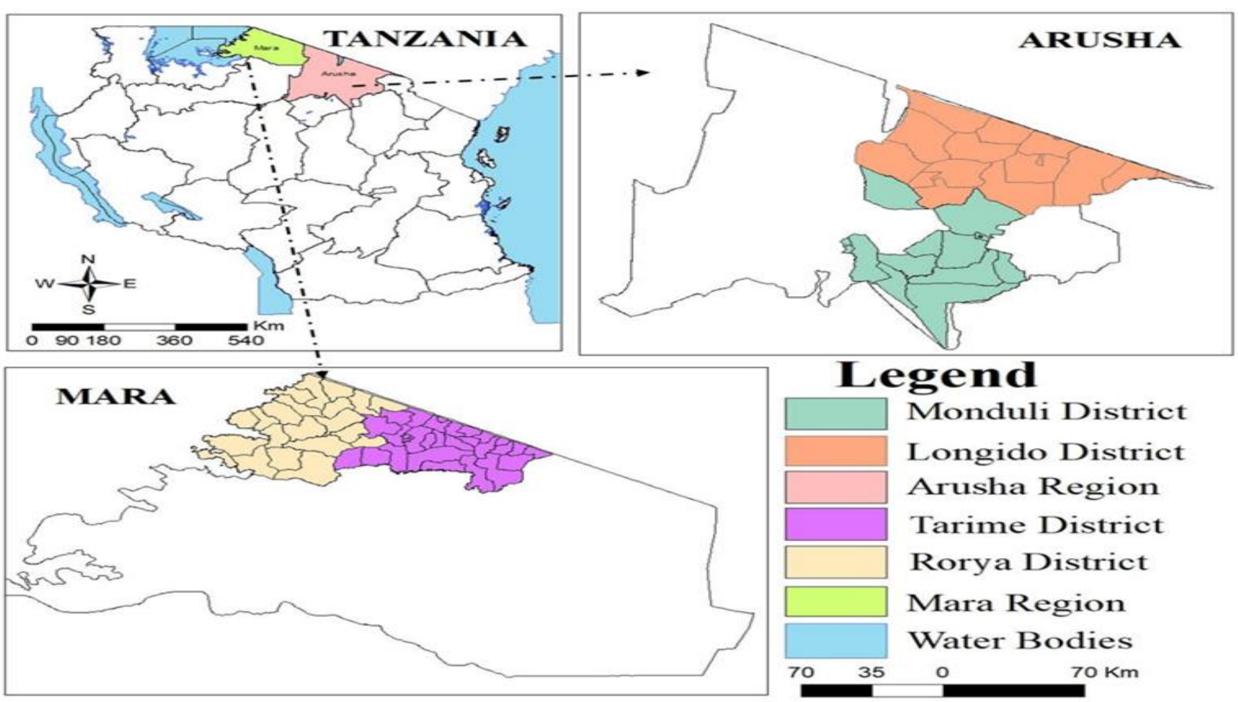

Figure 2: Map of the Study Area

3.2 Target population

This study targeted women entrepreneurs engaged in livestock beef fattening, participating in EEPs, either government-administered or run by non-governmental programmes. Many women are engaged in livestock business due to the prevalent economic activities in their areas. They were deemed suitable for the study as direct beneficiaries aimed at promoting financial inclusion.

3.3 Sampling procedures and sample size

This study interviewed women entrepreneurs engaged in livestock beef fattening who were eligible to participate in EEPs. The study adopted a quantitative quasi-experimental research design to measure women economic empowerment levels. The design facilitates rigorous comparisons across government and non-government. The required sample size was determined using G*power analysis (Faul *et al.,* 2007) based on a one-way ANOVA framework with three groups. Assuming a 5% confidence level ($\alpha = 0.05$), 80% statistical power ($1–\beta = 0.80$), and effect size ($f = 0.137$). This yields a total sample size of 519 respondents. Although the target sample is 519, a total of 514 women were successfully interviewed due to respondent reluctant in few cases during fieldwork.

A four-stage sampling strategy was employed. First, Arusha and Mara regions were purposively selected due to their contrasting EEP implementation outcomes and economic dynamics (URT, 2021). Second, two districts from each region were selected based on livestock prevalence and active EEP participation. These are Longido and Monduli from Arusha; Tarime and Rorya from Mara. In the third stage, a district-level sampling frame was constructed using programme administrative records provided by Community Development Officers (CDOs) and district livestock officers. The frame was classified into government, non-government programmes and non-participants, resulting in a total of twelve strata across the four districts. In the fourth stage, women were randomly selected from each stratum using proportionate to size allocation to ensure representativeness. This makes a total of 514 women, comprising government participants (193), non-government participants (192) and non-participants (129). However, the study used a subsample of 385 women from the government and non-government. This is because the study aimed to compare empowerment levels across programmes types rather than assessing programme effect. Including non-participants would not address the study objectives, as they could not be classified into either programme category.

3.4 Data collection technique

Data was collected using a structured questionnaire from August to October 2024. The questionnaire gathered information on socioeconomic characteristics, institutional factors, and indicators of women's economic empowerment. Indicators drawn from the Pro-WEAI framework (Meinzen-Dick *et al.* 2019, Malapit *et al.* 2019, 2023) included key dimensions such as autonomy in income, control over loan usage, access to financial services, ownership of assets, leadership roles, visiting important locations and control over time allocation.

3.5 Data analysis

The collected data was cleaned and analyzed using STATA 17. Descriptive statistics and inferential analyses were conducted to assess WEEL. The measurement was guided by the Pro-WEAI framework developed by Alkire *et al.* (2013) and further expanded by Malapit *et al.* (2019), which offers a multidimensional approach to women empowerment. The study adopted nine key domains: input in productive decisions, autonomy in income, self-efficacy, control over loan usage, access to and decision-making on financial services, leadership in the community, ownership of assets, visiting important locations and control over time allocation (Table 1), following Haque *et al.* (2024).

While Pro-WEAI is a broad empowerment tool, the selected domains in this study were interpreted through an economic empowerment lens. Each domain reflects a woman's ability to access control and benefit from economic resources and opportunities. For example, input in productive decision, autonomy in income and control over income usage directly relate to her participation in and control over business decisions. Access to financial services and ownership of productive assets are essential indicators of financial inclusion and asset based. Self-efficacy reflects her confidence to pursue income generating goals while group membership, mobility and control over time are enabling factors for sustained economic participation. The relevance of these domains was reviewed in pre-field consultations with local stakeholder and insights from women participating in EEPs in Arusha and Mara region. Each domain was assigned a primary weight of 1/9 to ensure a balance and standardized measure for comparability. Where a domain with multiple indicators, weights were divided equally among its indicators, resulting in nested weights of 1/18 or 1/27.

Table 1. Domain, indicators and weights for Pro-WEAI

	Domains	Indicators	Primary weights	Nested weights
1	Input in productive decisions	Who make decision	1/9	1/18
		How much decision		1/18
2	Autonomy in income	Motives on income decision	1/9	1/9
3	Self-efficacy	Person's perception on capabilities and ability to reach goals	1/9	1/9
4	Control over income usage	Agricultural income	1/9	1/9
5	Access to and decision on financial services	Financial access	1/9	1/18
		Financial account		1/18
6	Ownership of land and other asset	Land	1/9	1/27
		Small livestock		1/27
		Large livestock		1/27
7	Control over time allocation	Time	1/9	1/9
8	Group membership	Group	1/9	1/9
9	Visiting important location	Market	1/9	1/18
		Public meetings		1/18

Source: Malapit *et al.* (2019)

The Individual Economic Empowerment Index (IEEI) was calculated using the following formula:

$$IEEI = \frac{1}{W}\sum_{i=1}^{9} I_i \quad (1)$$

$$EEI = \frac{1}{w}I_1 + \frac{1}{w}I_2 + \cdots + \frac{1}{w}I_9 \quad (2)$$

where $I_i = 1$ if the woman had an adequate achievement for an indicator i and $I_i = 0$ otherwise,

d is the total number of domains considered, and W_i is the weight attached to each indicator. Using Equation (2), the study measures the individual economic empowerment index of each woman. The cutoff of 0.7 (70%) was set to measure the level of economic empowerment of women following the WEAI method (Roy *et al.* 2019). The index provides score measurement and develops levels. This served as a proxy empowerment measure and indicated that a higher score may reflect a trend toward increased empowerment.

The study applies a fractional logit regression model to examine the relationship between WEELs and explanatory variables. The WEEL, which is a dependent variable, lies between 0 and 1 (Papke & Wooldridge 1996), the model aligns with the understanding of empowerment as a gradual non-binary process. Empowerment does not occur in discrete steps but rather along the continuum. The model explains the probability of achieving different levels of economic empowerment. Additionally, interaction terms are included to capture conditional effects, allowing the model to explain relationships vary across groups.

The fractional logit regression equation is given by:

$$E(y_i|x_i) = G(x_i^1\beta) \quad (3)$$

Where: y_i is fractional outcome, x_i is vector of explanatory variable, β is vector of parameters of estimate and $G(.)$is a logistic function.

$$G(z) = \frac{e^z}{1+e^z} \quad (4)$$

Whereby z is the linear predictor, a combination of linear variables and their coefficient

$$E(WEEL_i|x_i) = \frac{e^{\beta_0+\beta_1X_1+\cdots+\beta_iX_i}}{1+e^{\beta_0+\beta_1X_1+\cdots+\beta_iX_i}} \quad (5)$$

Where: WEEL_i represents Women Economic Empowerment Level as the fractional outcome for women i, and $X_i$is a vector of 12 explanatory variables ($X_1, X_2 \ldots\ldots X_{12}$), which include socioeconomic and institutional characteristics. The model also incorporates interaction terms to assess whether the effects of key variables vary by group.

3.6 Variables under study

Table 2 indicates variables used in the fractional logit regression model. These variables are expected to have varying influences on women's economic empowerment.

Table 2. Description of variables used in the model

Code variables	Variable description	Units of measurement	Expected sign
Dependent variable			
IEEI	Individual women economic empowerment Index	Economic empowerments score that women have attained ($0 \leq Y \leq 1$)	+
Independent variables			
Age	Age of the household	Continuous	+
MarSt	Marital Status -1 if married, 0 otherwise -1 if widow, 0 otherwise -1 if separated, 0 otherwise	Dummy	+
Educ	Education level	Number of years of schooling (Continuous)	+
Hhsize	Household size	Number of family members (Continuous)	+
Training	Access to training	1= Yes, 0= No (dummy)	+/-
SCN_high	High acceptance of women in economic participation	1=High acceptance, 0=Otherwise (dummy)	+
SCN_moderate	Moderate acceptance of women in economic participation	1=Moderate acceptance, 0=Otherwise (dummy)	+
Exten	Access to extension services	1= Yes, 0= No (dummy)	+/-
Policies	Aware of existing supportive laws towards empowerment of women	1=Yes, 0=No (dummy)	+/-
Alternative Loan	External financing source availability	1=Yes, 0=No (dummy)	+
Loan amount	Amount of loan received from EEP in USD	Continuous	+
EEP	Type of Economic Empowerment Programmes engaged in	1= Government Programme 0= Non-Government Programme	+/-

4. Results and Discussion

4.1 Preliminary characteristics of respondents

Table 3 presents the socioeconomic characteristics of women participating in government and non-government EEPs. Overall, there are no significant differences between the two groups, except for education and marital status. Women in government programmes have an average of five years of primary schooling, compared to three years for those in non-government programmes. These findings align with Norwood (2014) and Demedeme *et al.* (2022) in Ghana, who also reported lower educational attainment, mostly limited to primary education, among women in EEPs. This reflects the fact that higher levels of education tend to reduce poverty vulnerability (Lemnge & Raphael, 2023), suggesting that EEPs often prioritize marginalized women with little schooling. While education can enhance agency and economic engagement, its effect is often constrained by women's ability to utilize it, particularly due to marital roles and sociocultural norms. These differences shape the extent to which women can engage in decision making and benefit from empowerment related activities.

Non-government programmes have more widows and separated women compared to government programme. Conversely, government programme has more married women and single women than non-government programmes. This suggests that non-government programmes tend to reach marginalized women. Widows may join such programmes due to financial pressure and family responsibilities, but access to resources does not always provide power. Social exclusion and stigmatization can limit their empowerment. Married women may access resources through their spouses depending on household dynamics. This highlights complex relationship between marital status, access to resources and the ability to exercise agency.

Table 3. Socioeconomic characteristics of the respondents

Characteristics	Economic Empowerment Programmes		Total		
	Government	Non-Government		T-test/ χ 2	P-value
Mean (SD)					
Age	43.79 (11.01)	43.13 (9.89)	43.45 (10.45)	0.54	0.54
Education	4.77 (3.75)	3.20 (3.86)	4.0 (3.88)	4.10	0.00***
Household size	5.73 (2.03)	5.76 (1.76)	5.75 (1.90)	0.20	0.88
Loan amount ('000'TZS)	2986 (1268)	465 (175)	1725.50 (721.54)	27.36	1.99
Percentage					
Marital status					
Married (%)	29.02	21.35	25.19	13.73	0.00***
Widow (%)	32.12	41.15	36.62		
Separated (%)	14.51	23.44	18.96		
Single (%)	24.35	14.06	19.22		

Note: *** represents significance at 1% level.
Source: Field data (2024)

Access to training differs significantly between programmes (Table 4), 90.63 percent of women in non-government programmes receive training compared to 43.01 percent in government programme ($p < 0.001$). This disparity aligns with findings by Cho and Honorati's (2014) and

Abebe and Kegne's (2023) findings, who indicate that non-government programmes offer more frequent hands-on training. The observed variation in training provision for women can be attributed to differences in structured approaches and resource allocation. Training represents a crucial resource that enhances women's capacity for informed strategic choices. Consequently, disparities in training provision thus shape women capacity to make strategic choices and influence their economic outcomes. Non-government initiatives may be more responsive to women's capacity building needs due to greater operational flexibility, whereas government programme often face constrains like limited budgets and rigid procedures.

Both programmes experienced community acceptance of women's economic roles, with a greater portion of women in non-government programmes (75%) indicating high acceptance compared to government programme. Despite this progress, women reported a low acceptance level, limiting their full participation in business operations. This aligns with Kabeer (2001) and Chikwe *et al.* (2024) who indicate that sociocultural norms often affect women's agency and that programmes interventions gradually shift the norms through peer network and collective engagement. Such interventions contribute to a slow transformation of gendered expectations within households and communities. Differences in norms are shaped by household dynamics such as spousal support, division of labour and decision-making power, which affect women participation and benefits from empowerment programmes.

Women in non-government programmes had more access to extension services than those in government programme. This finding contrasts with Ragasa *et al.* (2013) and Alvi *et al.* (2021), who indicate that women in Ethiopia and India, respectively, are generally less likely to receive extension services across programmes. The higher access in non-government programmes suggests more effective communication strategies and better resources, which may be lacking from government programme. The provision of extension services not only enhances women's ability to make informed agricultural business decisions but also strengthens their knowledge of livestock management practices.

Table 4. Distribution of institutional support factors by EEPs

Characteristics	Economic Empowerment Programmes			
	Government	Non-Government		
	Percentage		χ 2	P-value
Access to training				
No	56.99	9.38	98.34	0.00***
Yes	43.01	90.63		
Sociocultural norms_High				
Low	37.31	25.00	6.79	0.01***
High	62.96	75.00		
Sociocultural norms_Moderate				
Low	73.58	75.00	0.10	0.75
Moderate	26.42	25.00		
Alternative loan				
No	35.23	30.73	0.88	0.35
Yes	64.77	69.27		
Extension service				
No	65.28	46.35	13.99	0.00***
Yes	34.72	53.65		
Policy awareness				
No	76.68	79.70	0.51	0.48
Yes	23.32	20.30		

Note: *** represents significance levels at 1%
Source: Field data (2024)

4.2 Type of training across EEPs

The analysis reveals a significant difference in training components between government and non-government EEPs (Table 5). Government programmes emphasize loan-related training, with 39.9 percent of participants receiving training on loan repayment procedures and 30.05 percent on loan application. Non-government EEPs offer more practical business training, such as financial literacy and marketing, which are absent from government programmes. Leadership training was offered by government programme, possibly reflecting efforts to build women's agency and confidence in formal decision-making roles. These patterns align with the findings from the African Women Entrepreneurship Cooperative (AWEC) (2023) and the UNDP–IGAD (2022), both of which emphasize that business training such as marketing, financial literacy, and leadership is crucial for strengthening women's entrepreneurial skills and agency.

Table 5. Type of training in EEPs

Training type	Category	Economic Empowerment Programs (EEPs)			
		Government	Non-Government		
		Percentage		χ 2	P-value
Loan repayment	No	60.10	94.82	66.21	0.00***
	Yes	39.90	5.18		
Loan application	No	69.95	100.00	67.93	0.00***
	Yes	30.05	0.00		
Record keeping	No	84.97	79.79	1.85	0.17
	Yes	15.03	20.21		
Management skills	No	90.15	90.16	0.00	0.99
	Yes	9.85	9.84		
Leadership	No	95.34	100.00	9.17	0.00***
	Yes	4.66	0.00		
Financial literacy	No	100.00	60.62	95.19	0.00***
	Yes	0.00	39.38		
Marketing	No	100.00	75.13	55.12	0.00***
	Yes	0.00	25.87		

Note: *** represents significance levels at 1% respectively
Source: Field data (2024)

Training types represent distinct resources, with varying potential to enhance empowerment. For example, financial literacy and marketing training may be more linked to economic agency, enabling women to manage and grow small business and participate in markets with greater confidence. Leadership training on the other hand, may equip women to engage in decision making spaces, but might not directly translate to empowerment directly. The study suggests that certain types of training are more effective in enabling women to convert resources into empowerment. While such training may build initial readiness, its empowerment potential depends on whether the content aligns with women's real economic needs.

4.3 Women economic empowerment status

Table 6 indicates that women attained higher adequacy levels in key dimensions, including control over income usage, access to and control of financial services and group membership. These findings align with Malapit *et al.* (2019), underscoring the relevance of these indicators in assessing women's empowerment. The higher adequacy in control over income may reflect women's increased agency in managing income generated from the programmes supported enterprise. Similarly, access to financial services reflects women's degree of decision-making power and financial inclusion. Group membership also emerges as a critical enabler of empowerment. As supported by Brody *et al.* (2017), participation in self-help group programmes influences empowerment. Beyond fostering a sense of belonging, groups serve as a platform for peer learning, networking and building social capital as a driver of empowerment.

Table 6. Adequate status for Pro-WEAI by EEP

WEEL domain	Economic Empowerment Programmes		T-test	P-value
	Government	Non- Government		
	Mean Score			
Input in productive decisions	0.31	0.88	-65.36	0.00***
Autonomy in income	0.11	0.13	-3.95	0.00***
Self-efficacy	0.50	0.45	5.38	0.00***
Control over income usage	0.72	0.84	-14.52	0.00***
Access to financial services	0.77	0.86	-9.57	0.00***
Ownership of assets	0.24	0.37	-14.77	0.00***
Control over time	0.11	0.15	-5.15	0.00***
Group membership	0.78	0.94	-22.61	0.00***
Visiting important location	0.11	0.65	-71.19	0.00***

Note: *** represents significance level at 1%
Source: Field data (2024)

Conversely, low adequacy levels in domains such as control over time, asset ownership and autonomy in income indicate deeper structural constraints persist that are not sufficiently addressed through programmme participation alone. Control over time remains limited due to unequal household responsibilities and sociocultural norms, restricting women's engagement in economic activities. Similarly, low scores in asset ownership and autonomy in income signals continue male dominance and limited freedom to make decisions independently. This is affected by sociocultural norms were male control over household finances, even when women contribute economically. Shivani (2024) and Quisumbing *et al.* (2021) highlights such sociocultural norms as key barriers to women's empowerment. Thus, the coexistence of progress in some domains and stagnation in others highlights the need for a more integrated approach to programme design.

Women are considered economically empowered when their average score reaches 0.7 (70%) or above. Based on this threshold, results revealed that 85.5 and 59.2 percent of women in non-government and government programmes, respectively, achieved economic empowerment at levels 0.7–0.9 (Table 7). The disparity becomes more pronounced at the highest empowerment level (rank 9), where 59.4 percent of women in non-government programmes attained this rank, compared to only 36.3 percent in government programme.

The overall difference in empowerment levels is influenced by individual empowerment domains (Table 6). For instance, women in non-government programmes reported significantly higher scores in input in productive decisions, control over income usage, group membership and visiting important locations which are critical dimensions of agency, mobility, and social capital. These domains not only reflect immediate access to resources but also signal women's enhanced ability to influence household and community-level decisions.

These variations reflect distinctions in programme design and delivery. Non-government initiatives often incorporate tailored support mechanisms such as mentoring, integrated training, and flexible financing. Such components do more than expand access to resources, they strengthen women's capacity to define and act on their goals. By anchoring their strategies in local social networks and building trust at the grassroots level, non-government programmes are better positioned to challenge normative and relational barriers that limit autonomy and decision-making. Government programmes may lack the adaptability and contextual sensitivity needed for transformative change. Their standardized, top-down approach fails to engage with the complexities of women's economic lives. These findings echo earlier insights by Bryan and Garner (2022) and Kabeer (1999), who argue that resource provision alone is insufficient when systemic inequalities persist. For EEPs to be effective, they must confront structural and sociocultural dynamics while supporting women's voices.

Table 7. Women economic empowerment status at different cut-off

Economic Empowerment Programmes			Remark	
	Government	Non-Government		
Cutt-offs	Percentage			
0.22	3.60	0.50	Not empowered	Cutoff point is 0.7
0.32	2.10	0.00	Not empowered	
0.44	7.30	5.70	Not empowered	
0.50	14.00	2.60	Not empowered	
0.61	14.00	5.70	Not empowered	
Total	41	14.5		
0.70	1.00	0.50	Empowered	
0.72	8.80	11.50	Empowered	
0.80	1.60	4.20	Empowered	
0.82	6.80	5.70	Empowered	
0.83	4.70	4.20	Empowered	
0.89	36.30	59.40	Empowered	
Total	59.2	85.5		

(Source: Seymour et al. 2023)
Source: Field data (2024)

4.4 Fractional logit regression within interaction terms on determinants of WEEL

To further explore the determinants of WEELs and account for the significant variation of WEEL between programmes, a fractional logit regression was estimated. The results in Table 8 indicate that education is positively associated with empowerment, with each additional year of schooling increasing WEELs by 0.006. This is also supported by Kuma and Godana (2023) in Ethiopia, who indicate that education increases economic empowerment by equipping women with essential skills. This underscores the need to promote educational attainment among women, many of whom have low education level (Table 3), limiting their confidence, access to information, financial literacy, business management and decision-making abilities. Similarly, training is associated with 19.1 percent higher WEELs, highlighting the importance of skills development. Kim *et al.* (2024)

found that business training has no influence on women entrepreneur. This depends on the surrounding environment, including sociocultural norms. Women with access to alternative loans tend to have higher WEELs, with a marginal effect of 0.099. This signals a reduction in liquidity constraints and improved investment opportunities, highlighting the necessity of financial resources for their businesses.

The interaction between age and training indicates that the association between training and WEEL is smaller (0.002) among older women. Younger women may benefit more from training due to greater flexibility and fewer household responsibilities. However, Batool and Jadoon (2018) and van Dongen *et al.* (2024) found that empowerment increases with age in Pakistan and Nepal, respectively, while Sell and Minot (2018) reported that youth in Uganda had lower empowerment levels than adults. This indicates that training effect may be moderated by life stage, with younger women having flexibility, but older women possibly having more experience and status within their communities

Table 8. Fractional logit regression of the main determinants of WEEL

			Delta-method		
Variables	Coefficient	Robust std. err.	Marginal effect	std. err.	95% CI
Main effects					
Age	0.007	0.009	0.001	0.002	[-0.003, 0.005]
Education	0.035*	0.022	0.006*	0.004	[-0.001, 0.014]
Household size	-0.029	0.038	-0.005	0.006	[-0.017, 0.007]
Marital status					
Married	0.375*	0.208	0.061*	0.034	[0.006, 0.128]
Widow	0.144	0.181	0.023	0.029	[-0.034, 0.080]
Separated	0.296	0.226	0.048	0.037	[-0.025, 0.121]
Training	1.180***	0.476	0.191***	0.077	[0.040, 0.342]
Loan amount	0.000	0.000	0.000	0.000	[0.000, 0.000]
Sociocultural_moderate	0.216	0.342	0.035	0.055	[-0.073, 0.143]
Sociocultural_high	1.630***	0.369	0.264***	0.059	[0.148, 0.380]
Extensions services	0.047	0.135	0.008	0.022	[-0.035, 0.051]
Policies	0.166	0.203	0.027	0.033	[0.038, 0.092]
Alternative loan	0.611***	0.064	0.099***	0.011	[0.077, 0.121]
EEPs	0.207	0.198	0.034	0.032	[-0.029, 0.097]
_cons	-1.518***	0.584	-	-	-
Number of observations	385				
Prob>chi2	0.00				
Pseudo R^2	0.11				
Log pseudo likelihood	-191.53				

Note: *, ** and *** represents significance levels at 10%, 5% and 1% respectively
Source: Field data (2024)

Table 9. Fractional logit regression with interaction terms on determinants of WEEL

			Delta-method		
Variables	Coefficient	Robust std. err.	Marginal effect	std. err.	95% CI
Interaction effects					
Age_x_training	-0.012*	0.008	-0.002*	0.001	[-0.004, 0.000]
Age_x_loan	0.000	0.000	0.000	0.000	[0.000, 0.000]
Education_x_training	-0.022	0.018	-0.004	0.003	[-0.10, 0.002]
Education_x_loan	0.000	0.000	0.000	0.000	[0.000, 0.000]
Household_size_x_training	0.008	0.033	0.001	0.005	[-0.009, 0.011]
Household_size_x_loan	0.000	0.000	0.000	0.000	[0.000, 0,000]
Marital status					
Married_x_training	-0.602***	0.190	-0.098***	0.0301	[-0.157, -0.039]
Married_x_loan	0.000***	0.000	0.000	0.000	[0.000, 0.000]
Widow_x_training	-0.152	0.164	-0.025	0.027	[-0.078, 0.028]
Widow_x_loan	0.000	0.000	0.000	0.000	[0.000, 0.000]
Separated_x_training	-0.340*	0.205	0.055*	0.033	[0.010, 0.120]
Separated_x_loan	0.000	0.000	0.000	0.000	[0.000, 0.000]
Sociocultural_moderate_x_training	0.596**	0.244	0.097**	0.040	[0.019, 0.175]
Sociocultural_moderate_x_loan	0.000*	0.000	0.000*	0.000	[0.000, 0.000]
Sociocultural_high_x_training	0.511**	0.251	0.083**	0.041	[0.003, 0.163]
Sociocultural_high_x_loan	0.000	0.000	0.000	0.000	[0.000, 0.000]
Alternative loan_x_training	0.000	0.000	0.000	0.000	[0.000, 0.000]
Alternative loan_x_loan	0.000	0.000	0.000	0.000	[0.000, 0.000]
Extension servcies_x_training	0.143	0.128	0.023	0.021	[-0.018, 0.064]
Extension services x_loan	0.000**	0.000	0.000**	0.000	[0.000, 0.000]
Policies_x_training	0.122	0.171	0.020	0.028	[-0.035, 0.075]
Policies_x_loan	0.000	0.000	0.000	0.000	[0.000, 0.000]
EEP_x_training	-0.266*	0.163	-0.043*	0.026	[-0.094, 0.008]
EEP_x_loan	0.000	0.000	0.000	0.000	[0.000, 0.000]
_cons	-1.518***	0.584	-	-	-

Note: Interaction effects are estimated from the same fractional logit regression model reported in Table 8.

Marital status shows that being married has a positive significant association with higher empowerment (6.1%) as supported by Mengstie (2022) in Ethiopia. However, the interaction between married women and training is significantly negative, indicating that training is less strongly associated with empowerment among married women. While training may enhance individual skills, its transformative potential appears diluted in marital context where household reasonability, traditional gender roles and spousal control over resources constrain women's autonomy. This contradiction suggests that marriage may constrain autonomy due to household dynamics such as limited decision-making power and mobility restriction. The findings reflect the nuanced reality that institutional context can either restrict or support women's economic empowerment. Additionally, interaction between being separated and training suggests that women experience a weaker empowerment from training interventions, possibly due to social stigmatization.

Sociocultural norms play a key institutional role in WEELs. Women in communities with high sociocultural acceptance experience a 26.4 percent higher association with empowerment levels. This reveals that a supportive sociocultural norm can amplify empowerment levels, since women face fewer social constraints, such as freedom to engage in income generating activities. An interaction effect shows that the association between training initiatives and WEEL is stronger among women living in more supportive communities. When community norms are favourable, women are more likely to apply knowledge and skills gained, engage in entrepreneurial activities and make autonomous economic decisions. This is also supported by Kabeer's framework, which explains how enabling socio-environment can strengthen women's agency and ability to utilize their resources. These results imply that training programmes are significantly more effective when embedded within communities that foster gender-equitable attitudes and support women's agency. These findings indicate that empowerment interventions should be tailored to local conditions.

Negative interaction between EEPs and training suggests that training is 4.3 percent less associated in government programme compared to non-government ones. This may be due to inadequate delivery, overlap with existing knowledge transfer, or issues with programme flexibility, monitoring systems and training duration. While EEPs provide financial support, their training components may need improvement to provide practical empowering skills. Furthermore, extension services, though important for knowledge transfer (Lestari & Yuwana 2023), show minimal association with loan uptake. This limited effect, coupled with the non-significant interaction of loan amount with other variables, suggests that the financial support provided may not be transformative. The provision of loan has not contributed to an improved standard of living (Magufuli *et al.* 2024). This implies that the primary constraint lies in the nature of the loan intervention itself or in absence of complementary programme components. These might include a mismatch between loan size and actual business capital needs as well as insufficient complementary interventions such training, monitoring and institutional support. These limitations hinder the effectiveness of strengthening women agency and decision-making in supporting sustainable income activities.

5. Conclusion

This study assesses the influence of government and non-government programmes on women's economic empowerment levels. Findings revealed socioeconomic differences between participants in EEPs. Government programmes reached more educated and married women, whereas non-government programmes engage less educated, widowed and separated women. Access to training, extension services, and sociocultural support is higher in non-government programmes, reflecting their flexibility in meeting women's diverse needs. In contrast, government programmes faced institutional constraints, including rigid implementation, which may hinder programme effectiveness. A key distinction emerged in the training provided: non-government programmes offered financial literacy, marketing, and business management training while government programmes focused mainly on loan-related training. These variations in training scope and target demographics contributed to differing empowerment levels. The differences in empowerment levels arise not only from programme interventions but also from the characteristics of the women each programme reaches.

The study found that 85.5% of women in non-government programmes were economically empowered, compared to only 59.2% in government programmes. This significant gap was attributed to differences in programme design and the enabling environment for resource utilization. A fractional logit regression revealed that education, training and access to alternative loans have a positive direct association with WEELs.

Moreover, interaction effects revealed that being separated or married with training provision reduced WEELs, suggesting that training alone may not overcome constraints tied to marital dynamics. Such cases may limit women's ability to translate training into actual empowerment outcomes. Additionally, although training varied with context, when embedded in supportive sociocultural norms significantly boost women's empowerment levels, reinforcing importance of aligning empowerment with local norms. However, training delivered with EEPS had a small but negative effect. While extensions services and loan uptake had a significant interaction with a minimal marginal effect. Loan amount also had no significant influence on WEELs, possibly due to its limited size and non-transformative nature. This indicate the importance of not just delivering resources, but ensuring they are sizable, flexible and tailored to women businesses.

6. Recommendations

To enhance women's economic empowerment in Tanzania, policymakers should strengthen interventions based on the specific needs of participants in both government and non-government programmes. Government programme should redesign training curricula to include financial literacy, marketing and enterprise management, and this training should be provided both prior to and during business operation. Training components must align with women's practical needs and utilize extension for staff skills translation and mentorship. Recognizing that training gaps are partly due to limited reach of local experts, there is a need to build capacity at the grassroots level through stronger partnerships between CDOs and extension officers to expand coverage and provide continuous mentoring and technical advice.

Given the strong influence of sociocultural acceptance on WEELs, targeted community sensitization can enhance spousal engagement, highlight the rights-based and economic benefits of women's participation in EEPs. This aligns with the importance of understanding how household dynamics interact with programme design to influence women's economic empowerment. Awareness can be created through sensitization campaigns aimed at shifting perceptions and promote acceptance of women's roles in economic activities and household responsibilities. Radio programme and village meetings, leveraging local leaders, can foster a supportive environment that addresses restrictive gender norms. Additionally, EEPs must consider sociocultural context; in highly supportive environments, interventions should focus on sustaining gains and addressing higher-level barriers, rather than duplicating existing support. While extension services are valuable, their effectiveness depends on integration into institutional systems that lead to meaningful empowerment outcomes.

7. Limitation

In addition to extending the body of knowledge, this study had some limitations. The study considered only women beneficiaries engaged in small-scale livestock fattening businesses in the Arusha and Mara regions of Tanzania, which may affect the generalizability of the findings. This is largely due to budget constraints. The study also relied on a quantitative only approach, which, though useful for identifying patterns and relationships, limit the depth of explanation. Future research should therefore broaden the geographical and sectoral scope by incorporating women from diverse enterprises and regions, while also adopting mixed methods approached to capture the nuanced. Additionally, the study recognized the endogeneity concern, in which further studies could use quasi-experimental approaches to provide evidence on casual impact of empowerment programmes.

8. Data Availability Statement

Data supporting the findings of this study are available from the corresponding author upon request.

Disclosure Statement

The authors declare no conflict of interest.

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Author contribution

All authors contributed to the conceptualization of the study. The methodology was developed by Aika Aku, Charles Mgeni, Roselyne Alphonce and Gilead Mlay. Data collection was conducted by Aika Aku. Data analysis was performed by Aika Aku. The first draft of the manuscript was written by Aika Aku. Charles Mgeni, Roselyne Alphonce and Gilead Mlay commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Ethical consideration

Ethical approval for human subject research was obtained from Sokoine University of Agriculture (SUA). Participants received a written consent form stating they could withdraw from the study at any time.

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