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RESEARCH ARTICLE

# "The Paradox of the Invisible Tiller": Assessing the effect of Land-Tenure Systems on Women's Socio-economic Empowerment among selected Ethnic Groups in Bamenda Municipality, Cameroon

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**ABSTRACT**

This study focuses on the phenomenon, known as the "Paradox of the Invisible Tiller," which explains how, even though women perform most of the work in agriculture, very few women are officially recognized as landowners. It focuses on how land-tenure systems affect women's economic empowerment in Bamenda Municipality, Cameroon. Using survey data from 400 respondents, the research applies descriptive statistics, Oaxaca-Blinder decomposition, and logistic regression analyses to explain how customary and statutory land-tenure systems influence women's access to land and their level of empowerment. The findings show a significant paradox: Women report a relatively high mean empowerment index of 0.856, yet only 22% of them hold formal land titles. The Oaxaca-Blinder decomposition reveals an empowerment gap of 14.51 points between women with titles and those without. This gap is mainly due to the advantages of title ownership, not differences in individual traits. The logistic regression results indicate that customary law limits women's access to land, particularly affecting the most experienced female farmers. Those with over 20 years of experience see a 19-percentage point drop in their chances of accessing land. Interestingly, being aware of statutory protections from the 1974 Land Ordinance is linked to lower empowerment outcomes (coefficient = -2.12, $p<0.05$). In contrast, understanding the punitive measures in the penal code is a strong predictor of empowerment (coefficient = 7.44, $p<0.01$). The study concludes that the "invisible tiller" issue continues because there is a gap between formal legal rights and the realities on the ground. Deeply rooted customary practices create significant barriers to women's land ownership, even when favourable statutory laws exist.

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## 1.0 Introduction

Throughout sub-Saharan Africa, land is a vital economic asset for over 80% of rural inhabitants (Citaristi, 2022). In Cameroon, agriculture forms the foundation of the economy, with women being responsible for cultivating 70–80% of the country's food supply (Foretia Foundation, 2025; FAO, 2018). Despite this significant contribution, these women are often regarded as "Invisible Tillers"

because they rarely own the land they cultivate (Tchinda & Kandem, 2020). This problem is especially noticeable in Bamenda Municipality and the Grassfields region, where local traditions frequently take precedence over official legal systems (Bobbo et al., 2020).

Bamenda exhibits a combination of patrilineal customs and urban development (Samba et al., 2023). Local communities regard land as a shared resource, managed by the Fon (traditional chief) and overseen by male family heads (Bantar, 2023). The core challenge for "Invisible Tillers" is the continued exclusion of women from land ownership. Although women grow 70–80% of food crops, their land ownership nationally stands at less than 2% (Foretia Foundation, 2025). This situation stems from two coexisting legal frameworks: Cameroon's official laws and its customary practices. Even though the 1974 Land Tenure Ordinance and the 1996 Constitution guarantee fair land rights (Fonjong, 2012), male-lineage customs often dominate (Kwapena, 2024). Consequently, women are typically restricted to secondary rights to use land, usually at the discretion of their male relatives (Tchinda & Kandem, 2020).

The financial repercussions include the shutting out of women from formal banking, with only 18% of Cameroonian women being able to access official loans, compared to 30% of men (Foretia Foundation, 2025). Moreover, women are often confined to farming just enough for survival (World Bank, 2025), are reluctant to invest in long-term farm improvements (IDRC, 2024), and face losing their land rights upon widowhood or divorce (Kwapena, 2024; Fonjong, 2012). While denying women property rights is illegal under Cameroon's 2016 Penal Code, women often avoid seeking legal help due to potential social consequences (FairPlanet, 2023). Efforts by traditional leaders to update inheritance customs remain isolated (Bantar, 2023), and there is limited understanding of how customary land systems hinder women's financial independence. This "Invisible Tiller" situation impedes progress on the Sustainable Development Goals related to gender equality and poverty reduction. Accordingly, this study aims to investigate the lack of secure land access among women farmers, evaluate the impact of traditional practices on women's economic empowerment, and propose solutions such as legal awareness initiatives and land policy reforms (Fonjong et al., 2011) in the bid to bridge the gap between women's labour and their economic rights.

Thus, the study has the following **research objectives:** (i) To assess the disparity in female empowerment between women without customary user rights versus those with formal land titles in Bamenda Municipality, (ii) To investigate the extent to which the customary land-tenure system propagates the "invisible tiller" paradox within the access to land context for women in Bamenda Municipality, and (iii) To investigate the effect of statutory land-tenure systems on the socio-economic empowerment of women in Bamenda Municipality.

## 2.0 Literature Review

### 2.1 Theoretical Review

This theoretical examination investigates two contemporary conceptual frameworks: Feminist Political Ecology (Yaro, 2022) and Braided Justice (Faciolince & Williams, 2025). Together, these frameworks clarify how patterns of land possession impact women's progress in economic and social spheres within the Bamenda area.

Feminist Political Ecology Theory (Yaro, 2022): Drawing upon seminal research by Rocheleau et al. (2013), Yaro (2022) details how gender-based disparities in access to resources are connected with the commercialization of agriculture and shifts in the environment. This perspective is useful for comprehending the "invisible tiller" issue as it considers "entitlement rights"—the recognized claims individuals can exercise via societal norms and systems—rather than just legal proprietorship. In the context of Cameroon's Bamenda Municipality, Feminist Political Ecology (FPE), argues that women's dependence on men for cultivation, coupled with less stable resource entitlements amidst changing economic and ecological circumstances, threatens to compel many women to cease agricultural activities altogether. Yaro (2022) emphasizes that a simple comparison of resources between genders provides limited understanding, insisting that any examination must consider how marital state, position within polygamous families, ethnic heritage and age

interact to produce diverse results in land acquisition. Subsequent research from Lemke et al. (2020) elaborates on FPE, illustrating that climate change exacerbates existing gender disparities in land access, given that women generally possess less secure rights and depend more on communal assets.

Braided Justice and Gender-Transformative Legal Empowerment Theory (Faciolince & Williams, 2025): This conceptual model addresses the deficiencies of earlier methods that considered gender to be a subordinate concern. Faciolince and Williams (2025) identify three interrelated issues that perpetuate gender inequity in land acquisition: women's exclusion from formal land documentation and prejudiced inheritance customs; unjust traditions within communal landholding stemming from male-centric practices; and land expropriations that impact women more severely. The framework advocates for gender-transformative initiatives that actively confront fundamental power dynamics and social conventions, instead of simply integrating women into current arrangements. Regarding the second research aim concerning traditional land possession customs, this framework states that customary arrangements are dynamic structures amenable to modification through thoughtfully designed legal assistance programmes. Faciolince and Williams (2025) argue that effective legal enablement necessitates integrating programmes within local leadership frameworks while preserving autonomy. For the Bamenda area, they propose that formal land legislation changes will only result in substantial empowerment if they are backed by community-rooted accountability mechanisms that assist women in closing the divide between their legal rights and their everyday realities.

## 2.2 Empirical Review

This study reviews empirical research, conducted from 2012 onwards on the “invisible tiller” phenomenon in sub-Saharan Africa, wherein women undertake the majority of agricultural labour yet face structural and institutional obstacles to land ownership. The review covers two continent-wide studies alongside two specific inquiries pertaining to Cameroon, concentrating on the Bamenda region and communities such as Nkwen, Mankon, and Bamendankwe. Central themes include the discord between customary and statutory land-tenure systems, the influence of cultural norms in perpetuating gender disparity and the prospective advantages of formal land tenure in promoting women's empowerment.

In Bamenda Municipality exist, a notable discrepancy called the “invisible tiller” paradox, wherein women undertake the majority of agricultural tasks but are legally prevented from owning land. They are typically granted only usage rights, while male family members or traditional leaders retain the official land titles (Foretia Foundation, 2025; Loh, 2023). This situation stems from a clash between impartial legal structures and male-dominated customs, resulting in men controlling land resources (Citaristi, 2022). Historically, women were generally perceived as transient household members and were thus excluded from inheritance (World Rainforest Movement, 2016). Across the country, women constitute over 70% of the agricultural workforce but hold rights to only 15% of recorded land (Citaristi, 2022). Cameroon's dual legal system often forces women to rely on male relatives for land access, although “Know Your Rights” initiatives are now leading to positive local changes (Moha et al., 2022). Traditionally, land was managed communally under local rulers (Fons) and passed down through male lines of descent (Anyanwu, 2011; Njoh, 2013; Fonjong et al., 2012). However, colonial rule significantly disrupted this arrangement: An 1896 German decree had declared unregistered land as unowned, a 1927 British ordinance had classified indigenous people as 'permissive tenants' (occupants with permission), and French regulations had employed the term 'terre vacante' (unoccupied land) (Nguiffo & Watio, 2015). The 1974 Land Ordinance further centralized state authority over land (Republic of Cameroon, 1974). This is why contemporary reforms now require official letters of approval from traditional leaders.

Other studies in the Cameroonian context, e.g., Fonjong, Sama-Lang and Fombe (2012), found that within the Nso, Kom, and Bafut groups women contribute more than 70% of farm work but hold under 15% of official land deeds. Additionally, traditional councils typically extended only

temporary access to land and barred women from participating in land administration. In their own study Doss, Summerfield, and Tsikata (2014) proposed that indigenous systems connect land possession to male lineage succession, effectively obscuring women's farming activities in official documentation. Ribar (2025), analyzing information from 22 African nations, concluded that regional political forces and the power of customary leaders have a greater impact on land registration outcomes than the simple existence of titles, placing women and non-community members at a disadvantage.

Phiri (2025) examined 30 African countries and reported that the percentage of female landholders correlated with economic development only up to a certain point and exclusively in some Francophone West African states. This led to the conclusion that specific, customized policies are required instead of blanket approaches. Investigating seven areas of Cameroon, Kossouma Libaa et al. (2025) found that women's encounters with unjust land practices differ based on their marital status, ethnic background and local traditions. Therefore, they suggested that land governance should recognize varied personal situations rather than relying on wide generalizations.

A study by Ndjebet (2026), documented a successful programmme that utilized the traditional Bassa custom of Lilaglé—a binding public pledge of land transfer—to secure land rights for women in Cameroon's coastal region. More than 35 women acquired certificates for a minimum of 100 hectares, granting them entitlements to cultivate, plant and bequeath the land to their offspring (though not to sell it). The research concluded that engaging customary leaders to modify gendered norms is efficacious and advantageous for all within the community. Lastly, the study identified issues in research on Cameroon since 2020, including an absence of studies on long-term consequences, inadequate quantitative analyses of productivity, absence of empirical examination of the Anglophone conflict's influence on women's land holdings, a lack of systematic comparisons across different customary systems, restricted assessment of digital tools for documenting women's land entitlements, overlooking the effects of climate change, and a scarcity of research on enduring transformative changes.

## 2.3 The Research Gaps

Since 2020, studies concerning women's land ownership in some African countries and Cameroon have exhibited several shortcomings. One, there is an absence of long-term research evaluating the lasting impacts of land formalization programmess. Two, there is no sufficient quantitative data for comparing productivity between customary land tenure and officially registered ownership. Three, no empirical investigation has thoroughly explored how the Anglophone conflict in the North West and South West regions influences the security of women's land rights. Four, there are no comprehensive comparisons of diverse traditional inheritance systems among various ethnic groups. Five, there has been limited assessment of digital technology's role in documenting female land claims. Sixth, not much attention has been paid to the influence of climate change on customary land systems and gender equality. Seven, there are also no extended studies confirming the significant effects of gender-focused land initiatives beyond the present. Lastly, no dedicated factual inquiry has specifically examined the consequences of the Anglophone conflict on women's land possessions. These identified limitations collectively underscore the importance of ongoing research on this subject.

## 2.4 Contribution to Knowledge

This study offers significant contributions across theoretical, empirical and methodological dimensions concerning gender and land tenure in sub-Saharan Africa.

Theoretically, it synthesizes Feminist Political Ecology (Yaro, 2022) with the Braided Justice framework (Faciolince & Williams, 2025) to show that the phenomenon of the “invisible tiller” where women's agricultural labour is often unrecognized – originates from male-dominated societal structures. In these systems, formal legal equality frequently proves ineffective against deeply ingrained traditional barriers. Furthermore, the research refines intersectional theory by illustrating how various social statuses impact land access: polygamous marriage is associated with a 15% reduction in land access, widowhood with an 11%

reduction, and being in the 46-55 age bracket with a 17% reduction.

Empirically, the study highlights a notable contradiction in Bamenda, where 85.6% of women report feeling empowered despite, only 22.3% possessing formal land titles. An analysis using Oaxaca-Blinder decomposition reveals a 14.51 percentage point discrepancy in land access primarily attributable to discrimination (with a coefficient effect of -13.51, statistically significant at $p < 0.01$). Unexpectedly, the findings indicate that secondary education is linked to a 14% decrease in land access, and vocational training to a 19% decrease (both statistically significant at $p < 0.05$). The research also identifies a "veteran farmer penalty," showing that women with over 20 years of farming experience report a 19% reduction in land access ($p < 0.01$).

Methodologically, the study introduces an innovative application of Oaxaca-Blinder decomposition to analyze issues within contexts of legal pluralism. The data collection involved a rigorous sampling process, drawing 400 participants from an initial pool of 10,000 individuals across three distinct communities in Cameroon.

## 3.0 Methodology

### 3.1 Research Design

This study employed a quantitative cross-sectional survey methodology to assess the influence of land-tenure systems on the social and economic empowerment of women residing in Bamenda Municipality. The cross-sectional approach was deemed suitable as it facilitated the concurrent collection of data on numerous variables, including land title ownership, perceptions of traditional and statutory laws, demographic attributes, and empowerment outcomes, at a single point in time. This design enabled the computation of statistical associations between variables related to land tenure and women's empowerment without altering any study conditions (Creswell & Creswell, 2018). The quantitative methodology was specifically chosen to accomplish three main research objectives.

### 3.2 Sample and Sample Size Determination

This research concentrated on women aged (18 and older) who were involved in agricultural or related economic activities within Bamenda Municipality. Participants were specifically selected from the Nkwen, Mankon, and Bamendankwe cultural groups. These communities were chosen because they represent significant cultural entities in the Grassfields region, an area where customary landownership practices continue to hold considerable sway (Anyanwu, 2011; Njoh, 2013).

The sampling framework was developed using population data acquired from the Bamenda Municipal Council (2025) and the North West Regional Delegation of Agriculture and Rural Development (MINADER, 2025). This information indicated the presence of approximately 10,000 adult women actively engaged in farming, animal husbandry and small-scale trade throughout the Bamenda I, II and III subdivisions Individuals considered temporary residents or those who had not participated in any economic activity for at least 12 months preceding the survey were excluded from the study.

Sample Size Determination: The sample size was determined using Yamane's (1967) formula for finite populations:

$$n = \frac{N}{1 + N(e)^2}$$

Where:
$n$ = required sample size
$N$ = estimated total population of adult women in the target communities (10,000)
$e$ = margin of error (set at 5% or 0.05)
Substituting the values:

$$n = \frac{10{,}000}{1 + 10{,}000(0.05)^2} = \frac{10{,}000}{1 + 10{,}000 \times 0.0025} = \frac{10{,}000}{1 + 25} = \frac{10{,}000}{26} \approx 384.6$$

To address expected non-response, incomplete questionnaires and potential data handling mistakes, the initial sample size was increased by 10% (approximately 40 individuals). This adjustment established a final target sample of 400 women. This sample size provided sufficient statistical power to

detect meaningful differences using the Oaxaca-Blinder decomposition (for the first research objective) and to precisely calculate logistic regression coefficients for the second and third objectives. This was in line with the widely accepted standard of requiring at least 10 events per predictor variable (Hosmer, Lemeshow, & Sturdivant, 2013).

A structured, multi-stage random selection method was employed to choose the 400 participants. The study successfully collected 400 complete and valid survey responses, fully meeting the planned sample size. It is important to note that women from Nkwen mainly reside in the Bamenda I sub-division, those from Mankon in Bamenda II, and those from Bamendankwe in the Bamenda III sub-divisions

**Table 3.1:** Sample Size Distribution by Subdivision in Bamenda Municipality

| Subdivision | Estimated Adult Female Population | Proportion (%) | Target Sample | Actual Sample Achieved |
|---|---|---|---|---|
| Bamenda I | 3,500 | 35 | 140 | 140 |
| Bamenda II | 3,200 | 32 | 128 | 128 |
| Bamenda III | 3,300 | 33 | 132 | 132 |
| Total | 10,000 | 100 | 400 | 400 |

***Source:*** Researcher's computation based on Yamane (1967) and municipal demographic estimates from Bamenda Municipal Council (2025) and MINADER (2025).

### 3.3 Model Specification by Objectives

#### 3.3.1 Model Specification for Objective One

The first objective of this study concerns the disparity in the empowerment levels of women in Bamenda Municipality. It focuses on two groups: women who hold official land titles and those who lack any formal ownership documents or customary rights to use land. To address this objective, the study utilizes the Oaxaca-Blinder decomposition method, which helps to dissect the total disparity in average empowerment scores between the two main categories of women (those with formal land titles and those without). This decomposition uncovers three separate factors contributing to the gap: (1) the 'endowment effect,' which explains the part of the difference due to variations in observable personal and household characteristics; (2) the 'coefficient effect,' which represents unexplained differences arising from how these characteristics yield different outcomes or benefits; and (3) the 'interaction effect,' which captures the combined influence of differences in characteristics and their associated returns.

Linear Regression for Each Group:

For each group $j \in \{1,2\}$, the socio-economic empowerment score $Y_{ij}$ for woman $i$ in group $j$ is modeled as:

$$Y_{ij} = \mathrm{X}_{ij}\beta_j + \varepsilon_{ij}$$

where:

$Y_{ij}$ = Socio-economic empowerment score for woman $i$ in group $j$

$\mathrm{X}_{ij}$ = Vector of observable characteristics (endowments) including age categories, marital status, education level, occupation, and income

$\beta_j$ = Vector of coefficients (returns to characteristics) specific to group $j$

$\varepsilon_{ij}$ = Random error term with $E(\varepsilon_{ij}) = 0$

Decomposition Equation

The raw difference in mean empowerment scores between the two groups is decomposed as:

$$\bar{Y}_2 - \bar{Y}_1 = (\bar{\mathrm{X}}_2 - \bar{\mathrm{X}}_1)\beta_1 + \bar{\mathrm{X}}_1(\beta_2 - \beta_1) + (\bar{\mathrm{X}}_2 - \bar{\mathrm{X}}_1)(\beta_2 - \beta_1)$$

where:

Endowment Effect $= (\bar{\mathrm{X}}_2 - \bar{\mathrm{X}}_1)\beta_1$: Portion of the gap due to differences in observable characteristics between groups (explained component).

Coefficient Effect $= \bar{\mathrm{X}}_1(\beta_2 - \beta_1)$: Portion of the gap due to differences in returns to those characteristics (unexplained component), often interpreted as reflecting discrimination or structural advantages.

Interaction Effect $= (\bar{\mathrm{X}}_2 - \bar{\mathrm{X}}_1)(\beta_2 - \beta_1)$: Portion due to simultaneous differences in endowments and coefficients.

Variables included in $\mathrm{X}_{ij}$.

**Table 3.2:** The Vector of Observable Characteristics

| Variable Category | Specific Variables (Dummy Coded) | Base Category |
|---|---|---|
| Age | 26-35 years, 36-45 years, 46-55 years, 56 years and above | 18-25 years |
| Marital status | Married (monogamous), Married (polygamous), Widowed, Divorced/separated | Single |
| Education | Primary school, Secondary/high school, Vocational/technical training, University degree (bachelors+) | No formal education |
| Occupation | Livestock rearing, Petty trading/business, Civil servant/public sector, Others (tailoring/hairdressing) | Crop farming |
| Income | 25,001-50,000 FCFA, 50,001-100,000 FCFA, 100,001-200,000 FCFA | <25,000 FCFA |

***Source:*** Computed by Researcher (2026)

### 3.3.2 Model Specification for Objective Two

The study's second objective is to examine how customary land-ownership systems contribute to the 'invisible tiller' paradox concerning women's ability to obtain land in the Bamenda area. Following the methodology, a Probit Regression Model is used because the dependent variable—a woman's access to land under the customary system—is a binary one (1= women access to land and 0= no access to land). This model estimates the probability of a woman in the Bamenda area gaining land access through traditional channels, based on her perceptions of customary land rights, population characteristics, marital status, education, occupation, income, household size and years of agricultural experience.

Latent Variable Specification: Let $Y_i^*$ represent the unobserved latent propensity of woman $i$ to access land under the customary tenure system. This propensity is modelled as a linear function of observed characteristics:

$$Y_i^* = \beta_0 + \sum_{k=1}^{K} \beta_k X_{ki} + \varepsilon_i$$

where:
$Y_i^*$ = Latent propensity for land access
$\beta_0$ = Constant term
$\beta_k$ = Logistic regression coefficients for predictor variables
$X_{ki}$ = Vector of independent variables for woman $i$
$\varepsilon_i$ = Random error term following a standard logistic distribution
The observed binary outcome $Y_i$ (actual land access) is determined by:

$$Y_i = \begin{cases} 1 & \text{if } Y_i^* > 0 \text{ (woman accesses land under customary system)} \\ 0 & \text{otherwise (woman does not access land under customary system)} \end{cases}$$

Probability Model
The probability that woman $i$ accesses land is given by the logistic cumulative distribution function:

$$P(Y_i = 1 \mid \mathrm{X}_i) = \frac{\exp(\beta_0 + \beta \mathrm{X}_i)}{1 + \exp(\beta_0 + \beta \mathrm{X}_i)} = \Lambda(\beta_0 + \beta \mathrm{X}_i)$$

where $\Lambda(\cdot)$ denotes the logistic function.
Marginal Effects:

To facilitate interpretation, marginal effects are computed as the partial derivative of the probability with respect to each continuous predictor or the discrete change for dummy variables:

$$\frac{\partial P(Y_i = 1 \mid \mathrm{X}_i)}{\partial X_{ki}} = \Lambda(\beta_0 + \beta \mathrm{X}_i) \times [1 - \Lambda(\beta_0 + \beta \mathrm{X}_i)] \times \beta_k$$

Marginal effects represent the percentage point change in the probability of land access associated with a one-unit change in the predictor variable, holding all other variables at their means.
Full Model Equation

The full logistic regression model for Objective Two is specified as:

$$\ln\left(\frac{P(\text{LandAccess}_i = 1)}{1 - P(\text{LandAccess}_i = 1)}\right) = \beta_0 + \beta_1(\text{SecureNoTitle}_i) + \beta_2(\text{WomenLackRights}_i) + \beta_3(\text{EasyCustomCert}_i) + \beta_4(\text{Age26-35}_i) + \beta_5(\text{Age36-45}_i) + \beta_6(\text{Age46-55}_i) + \beta_7(\text{Age56}plus_i) + \beta_8(\text{MarriedMono}_i) + \beta_9(\text{MarriedPoly}_i) + \beta_{10}(\text{Widowed}_i) + \beta_{11}(\text{Divorced}_i) + \beta_{12}(\text{PrimaryEd}_i) + \beta_{13}(\text{SecondaryEd}_i) + \beta_{14}(\text{VocationalEd}_i) + \beta_{15}(\text{UniversityEd}_i) + \beta_{16}(\text{Livestock}_i) + \beta_{17}(\text{PettyTrade}_i) + \beta_{18}(\text{CivilServant}_i) + \beta_{19}(\text{Tailoring}_i) + \beta_{20}(\text{Income25-50}_i) + \beta_{21}(\text{Income50-100}_i) + \beta_{22}(\text{Income100-200}_i) + \beta_{23}(\text{Income200}plus_i) + \beta_{24}(\text{HHSize4-6}_i) + \beta_{25}(\text{HHSize7-9}_i) + \beta_{26}(\text{HHSize10}plus_i) + \beta_{27}(\text{Exp5-10}_i) + \beta_{28}(\text{Exp11-20}_i) + \beta_{29}(\text{Exp20}plus_i) + \varepsilon_i$$

### 3.3.3 Model Specification for Objective Three

The third objective of this study evaluates the effect of the statutory landownership system on the socio-economic empowerment of women residing in Bamenda Municipality. The methodology employed here is the probit regression model since the dependent variable — women's socio-economic empowerment — is dichotomous (empowered=1 and 0= not empowered). This model aims to estimate the probability that a woman in Bamenda Municipality attains socio-economic empowerment, considering her views on formal land legislation, demographic attributes, marital condition, educational background, occupation, income level, household size, method of land acquisition, and involvement in economic groups.

Latent Variable Specification: Let $E_i^*$ represent the unobserved latent propensity of woman $i$ to achieve socio-economic empowerment. This propensity is modelled as a linear function of observed characteristics:

$$E_i^* = \beta_0 + \sum_{k=1}^{K} \beta_k X_{ki} + \varepsilon_i$$

where:
$E_i^*$ = Latent propensity for socio-economic empowerment
$\beta_0$ = Constant term
$\beta_k$ = Logistic regression coefficients for predictor variables
$X_{ki}$ = Vector of independent variables for woman $i$
$\varepsilon_i$ = Random error term following a standard logistic distribution
The observed binary outcome $E_i$ (actual empowerment status) is determined by:

$$E_i = \begin{cases} 1 & \text{if } E_i^* > 0 \text{ (woman is socio-economically empowered)} \\ 0 & \text{otherwise (woman is not socio-economically empowered)} \end{cases}$$

Probability Model
The probability that woman $i$ is socio-economically empowered is given by the logistic cumulative distribution function:

$$P(E_i = 1 \mid \mathrm{X}_i) = \frac{\exp(\beta_0 + \beta \mathrm{X}_i)}{1 + \exp(\beta_0 + \beta \mathrm{X}_i)} = \Lambda(\beta_0 + \beta \mathrm{X}_i)$$

where $\Lambda(\cdot)$ denotes the logistic function.

Marginal Effects
To facilitate interpretation, marginal effects are computed as the partial derivative of the probability with respect to each predictor variable:

$$\frac{\partial P(E_i = 1 \mid \mathrm{X}_i)}{\partial X_{ki}} = \Lambda(\beta_0 + \beta \mathrm{X}_i) \times [1 - \Lambda(\beta_0 + \beta \mathrm{X}_i)] \times \beta_k$$

Marginal effects represent the percentage point change in the probability of socio-economic empowerment associated with a one-unit change in the predictor variable, holding all other variables at their means.

Full Model Equation

The full logistic regression model for Objective Three is specified as:

$$\ln\left(\frac{P(\text{Empowerment}_i = 1)}{1 - P(\text{Empowerment}_i = 1)}\right) = \beta_0 + \beta_1(\text{Ord74EqualRights}_i) + \beta_2(\text{StatutoryProtects}_i) + \beta_3(\text{PenalCodePunishable}_i) + \beta_4(\text{CustomStronger}_i) + \beta_5(\text{Age18-25}_i) + \beta_6(\text{Age26-35}_i) + \beta_7(\text{Age36-45}_i) + \beta_8(\text{Age46-55}_i) + \beta_9(\text{Single}_i) + \beta_{10}(\text{MarriedMono}_i) + \beta_{11}(\text{Widowed}_i) + \beta_{12}(\text{NoFormalEd}_i) + \beta_{13}(\text{PrimaryEd}_i) + \beta_{14}(\text{SecondaryEd}_i) + \beta_{15}(\text{VocationalEd}_i) + \beta_{16}(\text{CropFarming}_i) + \beta_{17}(\text{Livestock}_i) + \beta_{18}(\text{PettyTrade}_i) + \beta_{19}(\text{CivilServant}_i) + \beta_{20}(\text{IncomeLess25k}_i) + \beta_{21}(\text{Income25-50k}_i) + \beta_{22}(\text{Income50-100k}_i) + \beta_{23}(\text{Income100-200k}_i) + \beta_{24}(\text{HHSize1-3}_i) + \beta_{25}(\text{HHSize4-6}_i) + \beta_{26}(\text{HHSize7-9}_i) + \beta_{27}(\text{InheritedLand}_i) + \beta_{28}(\text{PurchasedLand}_i) + \beta_{29}(\text{RentedLand}_i) + \beta_{30}(\text{CIGmember}_i) + \beta_{31}(\text{NjangiMember}_i) + \beta_{32}(\text{CoopMember}_i) + \varepsilon_i$$

### 3.3.4 Variable Definition and Measurement for Objectives One and Two

The following table presents the definition and measurement of all variables used in the models for Objective One and Objective Two.

**Table 3.3:** The definition and measurement of all variables used in the models for Objectives One and Two

| Objective | Variable | Type | Definition | Measurement / Coding |
|---|---|---|---|---|
| Objective One | | | | |
| | Women's socio-economic empowerment (Dependent) | Binary | Whether a woman is considered socio-economically empowered based on decision-making autonomy, economic independence, control over resources, and perceived agency | 1 = empowered; 0 = not empowered (Mean = 0.856 from Table 4.1) |
| | Land-tenure status (Primary independent) | Binary | Comparison between women with formal land titles and those without (relying on customary user rights only) | 1 = holds formal land title; 0 = does not hold formal land title (relies on customary user rights only) (Mean = 0.223 from Table 4.1) |
| Objective Two | | | | |
| | Women's access to land (Dependent) | Binary | Whether a woman holds a formal land title, representing statutory/formal land access | 1 = owns formal land title; 0 = does not own formal land title |
| | Customary Land Laws Index (Primary independent) | Continuous (0-1) | Composite index measuring women's perceptions and experiences regarding customary land-tenure systems, based on four elements: (1) security without formal title; (2) marginalization of women's roles in land management; (3) ease of obtaining customary documents; (4) long-term investment security under customary tenure | Higher values indicate stronger adherence to or favourable perception of customary land arrangements (Mean = 0.497, SD = 0.187 from Table 4.1) |

| | | | | |
|---|---|---|---|---|
| Control Variables (Both Objectives) | | | | |
| | Age | Categorical | Age group of the respondent | Base: 18-25 years; Categories: 26-35 years, 36-45 years, 46-55 years, 56 years and above |
| | Marital status | Categorical | Marital status of the respondent | Base: Single; Categories: Married (monogamous), Married (polygamous), Widowed, Divorced |
| | Education level | Categorical | Highest level of formal education completed | Base: No formal education; Categories: Primary school, Secondary/high school, Vocational/technical training, University degree |
| | Occupation | Categorical | Primary occupation of the respondent | Base: Crop farming; Categories: Livestock rearing, Petty trading/business, Civil servant/public sector, Tailoring/hairdressing |
| | Monthly income | Categorical | Monthly income in Central African CFA francs (FCFA) | Base: Less than 25,000 FCFA; Categories: 25,001-50,000 FCFA, 50,001-100,000 FCFA, 100,000-200,000 FCFA, Above 200,000 FCFA |
| | Household size | Categorical | Number of persons living in the household | Base: 1-3 persons; Categories: 4-6 persons, 7-9 persons, 10 persons and above |
| | Years of experience in farming (Objective Two only) | Categorical | Number of years the respondent has engaged in farming activities | Base: Less than 5 years; Categories: 5-10 years, 11-20 years, above 20 years |

***Source:*** Computed by researcher (2026)

### 3.4 Ethical Considerations

Conducted in Bamenda, this study adhered to stringent ethical protocols. Preparatory steps involved obtaining authorization from both official authorities and community representatives. Informed consent was subsequently secured from 400 participants, who were clearly apprised of their option to discontinue participation at any time. Privacy was safeguarded through the anonymization of all individual data, with findings presented solely at a collective level.

Further protective measures encompassed conducting one-on-one interviews, utilizing female interviewers, and equipping staff with training to address potential emotional distress. No undue influence or pressure was exerted on participants as they received unbiased questioning, access to emotional support and, referrals for pertinent services, as well as minor non-monetary incentives. Crucially, individual consent was a prerequisite, even when community-level endorsements had been secured.

The research design also incorporated valuable cultural insights from local populations. Throughout

all stages, principles of accuracy and transparency were paramount. This impartial investigation ultimately aimed to benefit vulnerable populations, such as widows, women residing in polygamous households, and elderly agriculturalists.

## 4.0 Research Findings

### 4.1 Presentation of Descriptive Results

#### 4.1.1. Demographic and Socio-economic Profile of Respondents

**Table 4.1:** Descriptive Statistics of Socio-demographic Variables

| Variable | Observations | Mean | Std. Dev. | Minimum | Maximum |
|---|---|---|---|---|---|
| Age of the respondents | 400 | 2.625 | 1.148 | 1 | 5 |
| Marital status | 400 | 2.72 | 1.351 | 1 | 5 |
| Educational level | 400 | 3.215 | 1.244 | 1 | 5 |
| Occupation | 400 | 2.5 | 1.247 | 1 | 5 |
| Monthly income | 400 | 2.252 | 1.016 | 1 | 5 |
| Household size | 400 | 2.32 | .959 | 1 | 4 |
| Years of experience in farming | 400 | 2.587 | .927 | 1 | 4 |
| Women empowerment (1= empowerment and 0= not empowered) | 400 | 0.856 | .161 | 0 | 1 |
| Customary laws index | 400 | 0.497 | .187 | 0 | 1 |
| Statutory laws index | 400 | 0.633 | .28 | 0 | 1 |
| Women with land title (1=ownership of land title and 0=no land title) | 400 | 0.223 | .416 | 0 | 1 |

***Source:*** Researcher (2026)

Table 4.1 provides a comprehensive overview of the summary statistics pertaining to the socio-demographic attributes of participants in this research, encompassing their mean values and standard deviations, as well as both minimum and maximum observations. The study delineates descriptive statistical findings derived from Table 4.1, encompassing a sample of 400 women residing in Bamenda Municipality, thereby contributing to the characterization of the "typical," respondent within the framework of the study entitled "The Paradox of the 'Invisible Tiller". The average respondent is situated within the age range of late 20s to mid-30s (mean age 2.625), is married (mean marital status 2.72), has completed secondary education (mean educational attainment 3.215), and possesses approximately 2.6 years of experience in agricultural activities. Economically, she is engaged in small-scale agriculture or informal trading, yielding a modest income, while managing a household of average size (mean household size 2.32, with a variance extending to 14), within a context characterized by economic constraints.

The indicator "Women with land title" is similarly dichotomous, represented by '1' for possessing official land deeds and '0' for not having them. In terms of core variables, the study reveals that 85.6% of the women self-identify as empowered (mean empowerment score 0.856, with a small standard deviation of 0.161), which suggests uniformity in the perception of empowerment throughout the sample. Nevertheless, only 22.3% possess formal land titles (mean land title ownership 0.223, with a larger standard deviation of 0.416), thus exposing a pronounced discrepancy between the perceived empowerment and the actual legal ownership of land. This juxtaposition substantiates the central paradox of the study: Women may experience a sense of empowerment while concurrently being systematically deprived of formal land rights. The Customary Laws Index yields an average of 0.497 (midpoint), indicating ambivalent lived experiences wherein traditional systems concurrently provide support (e.g., access to familial land) and impose exclusions (e.g., denial of inheritance rights). Conversely, the Statutory Laws Index demonstrates a higher average of 0.633, suggesting that women

perceive formal legal statutes as more equitable, even though this recognition does not correlate with an increase in actual land ownership.

## 4.2 Presentation of Empirical Results

### 4.2.1 Objective One: *To identify and study the disparities in women socio-economic empowerment by land title ownership.*

The results derived from the Oaxaca-Blinder decomposition (Table 4.2) indicate a substantial and statistically significant disparity in empowerment between women possessing land titles and those lacking them. While the former post a mean empowerment score of 41.91, the latter post a starkly contrasting score of 27.40, culminating in a net deficit of -14.51 points ($p<0.01$). This finding underscores the strong correlation between land title ownership and elevated socio-economic empowerment.

The decomposition delineates this disparity into three distinct components. The endowment effect (-6.434, $p<0.1$) illustrates that variances in observable characteristics (such as age, marital status, and education) account for a moderate segment of the gap: Should non-titleholders possess the same attributes as titleholders, their empowerment would be augmented by 6.43 points. The coefficients effect (-13.51, $p<0.01$) constitutes the most substantial component, reflecting discrepancies in the returns associated with those characteristics. Even when women lacking titles exhibit identical traits to titleholders, they continue to experience lower levels of empowerment due to discrimination, structural impediments, or unobserved factors associated with land ownership. The interaction effect (5.435, $p<0.1$) encapsulates simultaneous differences in both endowments and coefficients.

An exhaustive analysis of the variables indicates that the significant constant term in the coefficients model (22.53) implies that unobserved factors—interpreted as the "pure" advantage of title ownership—are largely responsible for the observed gap. Concerning age, older women (56 years and above) without titles incur a noteworthy penalty (-2.624, $p<0.1$), suggesting that traditional systems may render aging women “invisible” in the absence of formal ownership. Marital status and education did not exhibit statistically significant contributions in elucidating the gap.

**Table 4.2:** Oaxaca-Blinder decomposition of women empowerment difference following land title ownership (Overall and individual differences)

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Variables | Overall | Endowments | Coefficients | Interaction |
| Women without land title (group 1) | 27.40*** | | | |
| | (0.826) | | | |
| Women with land title (group 2) | 41.91*** | | | |
| | (2.936) | | | |
| Difference | -14.51*** | | | |
| | (3.050) | | | |
| Endowments | -6.434* | | | |
| | (3.475) | | | |
| Coefficients | -13.51*** | | | |
| | (2.874) | | | |
| Interaction | 5.435* | | | |
| | (3.291) | | | |
| Age (base group):18-25 years | | | | |
| 26-35 years | | 0.0917 | -0.794 | -0.0865 |
| | | (0.259) | (1.923) | (0.263) |
| 36-45 years | | 1.458 | -2.103 | -1.579 |
| | | (1.212) | (1.603) | (1.276) |
| 46-55 years | | 0.0648 | 0.205 | 0.0346 |
| | | (0.229) | (1.228) | (0.216) |
| 56 years and above | | -1.308 | -2.624* | 1.686 |
| | | (1.023) | (1.591) | (1.181) |

| | | | | |
|---|---|---|---|---|
| Marital status (base group: single) | | | | |
| Married (monogamous) | | -0.187 | 0.429 | 0.128 |
| | | (0.624) | (2.169) | (0.653) |
| Married (polygamous) | | -1.451 | 0.550 | 1.181 |
| | | (1.208) | (0.607) | (1.194) |
| Widowed | | -0.359 | 0.216 | 0.266 |
| | | (1.274) | (1.075) | (1.324) |
| Divorced/ separated | | -1.421 | -1.883 | 1.301 |
| Education (base: no formal education) | | | | |
| | | (1.633) | (2.501) | (1.747) |
| Primary school | | 0.133 | 0.328 | -0.0613 |
| | | (0.402) | (2.091) | (0.397) |
| Secondary/high school | | -0.201 | 1.427 | 0.222 |
| | | (0.452) | (2.643) | (0.486) |
| Vocational/technical training | | -1.489 | 0.892 | 1.703 |
| | | (1.581) | (0.906) | (1.659) |
| University degree (bachelors+) | | -0.542 | -0.847 | 0.231 |
| | | (0.714) | (2.392) | (0.671) |
| Occupation (base: crop farming) | | | | |
| Livestock rearing | | 0.174 | -0.565 | -0.172 |
| | | (0.338) | (0.923) | (0.346) |
| Petty trading/business | | 0.321 | -1.873 | -0.410 |
| | | (0.506) | (2.072) | (0.567) |
| Civil servant/public sector | | -0.553 | -2.366 | 0.432 |
| | | (0.876) | (1.648) | (0.708) |
| Others (Tailoring/hairdressing) | | -1.687 | -2.205 | 1.469 |
| | | (1.029) | (1.368) | (1.032) |
| Income (base group: <25,000FCFA) | | | | |
| 25,001-50,000 FCFA | | -0.471 | 2.621 | 0.379 |
| | | (0.634) | (2.584) | (0.563) |
| 50,001-100,000 FCFA | | -0.727 | 0.532 | 0.635 |
| | | (1.425) | (1.239) | (1.479) |
| 100,001-200,000 FCFA | | 0.541 | 1.945 | -1.337 |
| | | (0.821) | (1.388) | (1.049) |
| Above 200,000 FCFA | | -0.363 | -0.552 | 0.289 |
| | | (0.484) | (0.832) | (0.481) |
| Household size (base:1-3 persons) | | | | |
| 4-6 persons | | -0.0627 | -0.295 | 0.0227 |
| | | (0.238) | (2.922) | (0.229) |
| 7-9 persons | | 1.141 | -1.109 | -0.636 |
| | | (0.940) | (1.382) | (0.842) |
| 10 persons and above | | 0.199 | -1.104 | -0.133 |
| Form of land access (base: inherited from father/husband) | | | | |
| | | (0.529) | (1.222) | (0.370) |
| Allocated by Fon/Traditional Council | | -0.00655 | -0.0555 | 0.00331 |
| | | (0.0648) | (0.825) | (0.0543) |
| Purchased (with/without land tittle) | | 0.0102 | -0.537 | -0.0521 |
| | | (0.161) | (1.729) | (0.212) |
| Rented/leased | | -0.00209 | 0.252 | -0.00171 |
| | | (0.0770) | (1.566) | (0.0634) |
| Borrowed from a male relative | | 0.321 | -0.992 | -0.193 |
| | | (0.496) | (1.949) | (0.430) |
| Membership status (base: belong to no | | | | |

| | | | | |
|---|---|---|---|---|
| group) | | | | |
| Common initiative group (CIG) | | 0.423 | -4.994 | -0.687 |
| | | (1.137) | (8.017) | (1.287) |
| Cooperative society | | -0.521 | -2.793 | 0.771 |
| | | (0.988) | (3.376) | (1.140) |
| Njangi (village savings & loans) | | 0.0393 | -0.662 | 0.0305 |
| | | (0.317) | (6.344) | (0.313) |
| Constant | | | 5.450 | |
| | | | (22.53) | |
| Observations | 400 | 400 | 400 | 400 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
***Source:*** Researcher's fieldwork (2026)

### 4.2.2 Objective Two: *The Effect of the Customary Land-tenure System on Women's Access to Land in Bamenda Municipality.*

Regarding the second objective, findings are presented from the probit regression (Table 4.3), which explores how customary land-tenure systems affect women's access to land in Bamenda Municipality, based on data from 400 women. The outcome variable is formal land title ownership (coded as '1' for possession, '0' for non-possession). The key explanatory variable is the Customary Land Laws Index, which quantified women's perspectives on the stability of traditional land systems, their restricted involvement in land management, the simplicity of obtaining customary records, and the suitability of these systems for long-term financial commitments.

The findings indicate a statistically notable inverse relationship between the Customary Land Laws Index and formal land ownership. The logit coefficient was -0.07 (p=0.05), suggesting that as women's favourable perception of traditional land systems increases by one unit, the log-odds of possessing an official land deed diminish. This corroborates the study's initial hypothesis that traditional land-tenure frameworks hinder or replace formal land ownership for women. The marginal effect was -0.01 (also statistically significant at p=0.05), meaning a one-unit rise in the Customary Laws Index decreases the probability of holding a land title by approximately one percentage point.

Despite its statistical significance, the practical magnitude of this effect is modest, indicating that traditional land rules by themselves exert only a confined direct impact on the chances of formal ownership. Nevertheless, the study concludes that within the traditional landholding framework in Bamenda Municipality, some demographic and socio-economic factors consistently hinder women's ability to acquire land in Bamenda, particularly under traditional landownership systems.

It was also found that age progressively diminishes land access: Women aged 26–35 are 10% less likely and those aged 46–55 are 17% less likely to gain land compared to the 18–25 age group. Marital status also acts as a barrier: Being in a monogamous marriage decreases the likelihood by 5%, a polygamous marriage by 15% and widowhood by 11%, when contrasted with single women.

Surprisingly, education can reduce access—secondary schooling lowers it by 14%, and vocational training by 19%, possibly due to opposition from established community leaders. Income shows a complex, non-linear effect: Women earning a moderate amount (25,001–50,000 FCFA) are 2% less prone to obtain land, but those with higher incomes (100,000–200,000 FCFA) are 23% more likely, suggesting that a specific financial level is required to overcome obstacles. Most notably, extensive farming experience presents an "invisible tiller" paradox: Women with over 20 years in agriculture are 19% less likely to secure land than those with under five years of experience.

**Table 4.3:** Probit regression results on the effect of customary land laws on women's access to land in the municipality under study

| | Probit coefficients | | | | Marginal effects | | | |
|---|---|---|---|---|---|---|---|---|
| Variables | Coef | aster | se | pval | Coef | aster | se | pval |
| | | | | | | | | |
| Women socio-economic empowerment | . | | . | . | | | | |
| Customary Land Laws index | -0.07 | ** | 0.34 | 0.05 | 0.01 | ** | 0.05 | 0.05 |
| Age (base:18-25 years) | | | | | | | | |
| 26-35 years | -0.69 | * | 0.38 | 0.07 | -0.10 | * | 0.06 | 0.07 |
| 36-45 years | -0.56 | | 0.42 | 0.18 | -0.09 | | 0.06 | 0.19 |
| 46-55 years | -1.23 | ** | 0.51 | 0.02 | -0.17 | *** | 0.06 | 0.01 |
| 56 years and above | -0.03 | | 0.58 | 0.96 | -0.00 | | 0.10 | 0.96 |
| Marital status (base: single) | | | | | | | | |
| Married (monogamous) | -0.35 | ** | 0.04 | 0.39 | -0.05 | ** | 0.06 | 0.04 |
| Married (polygamous) | -1.22 | ** | 0.05 | 0.10 | -0.15 | ** | 0.08 | 0.05 |
| Widowed | -0.82 | * | 0.48 | 0.09 | -0.11 | * | 0.07 | 0.08 |
| divorced | 0.74 | | 0.45 | 0.10 | 0.14 | | 0.09 | 0.11 |
| Education (base: no formal education) | | | | | | | | |
| Primary school | -0.74 | | 0.51 | 0.15 | -0.12 | | 0.08 | 0.15 |
| Secondary/high school | -0.91 | * | 0.47 | 0.05 | -0.14 | * | 0.08 | 0.07 |
| Vocational/technical training | -1.35 | ** | 0.67 | 0.04 | -0.19 | ** | 0.09 | 0.04 |
| University degree | -0.48 | | 0.54 | 0.37 | -0.08 | | 0.09 | 0.38 |
| Occupation (base: crop farming) | | | | | | | | |
| Livestock rearing | -0.20 | | 0.50 | 0.70 | -0.02 | | 0.06 | 0.69 |
| Petty trading/business | 0.51 | | 0.38 | 0.18 | 0.07 | | 0.05 | 0.17 |
| Civil servant/public sector | 0.19 | | 0.51 | 0.72 | 0.02 | | 0.07 | 0.72 |
| Tailoring/ hairdressing | 0.53 | | 0.53 | 0.33 | 0.07 | | 0.08 | 0.36 |
| Monthly income (base: <25,000 FCFA) | | | | | | | | |
| 25,001-50,000 FCFA | -0.11 | * | 0.37 | 0.07 | -0.02 | * | 0.05 | 0.08 |
| 50,001-100,000 FCFA | -0.73 | | 0.45 | 0.11 | -0.09 | | 0.06 | 0.10 |
| 100,000-200,000 FCFA | 1.28 | ** | 0.61 | 0.04 | 0.23 | ** | 0.12 | 0.05 |
| Above 200,000 FCFA | 0.47 | | 0.69 | 0.50 | 0.08 | ** | 0.12 | 0.02 |
| Household size (base:1-3 persons) | | | | | | | | |
| 4-6 persons | -0.03 | | 0.36 | 0.93 | -0.00 | | 0.05 | 0.93 |
| 7-9 persons | -0.07 | | 0.49 | 0.89 | -0.01 | | 0.07 | 0.89 |
| 10 persons and above | -0.37 | | 0.48 | 0.44 | -0.05 | | 0.06 | 0.43 |
| Years of experience in farming (base: <5years) | | | | | | | | |
| 5-10 years | -0.49 | | 0.42 | 0.23 | -0.08 | | 0.07 | 0.25 |
| 11-20 years | -0.53 | | 0.43 | 0.21 | -0.08 | | 0.07 | 0.23 |
| Above 20 years | -1.44 | *** | 0.54 | 0.01 | -0.19 | *** | 0.07 | 0.01 |
| Constant | 0.95 | | 0.67 | 0.16 | | | | |
| | | | | | | | | |
| Observations | 400 | | | | 400 | | | |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
***Source:*** Researcher's fieldwork (2026)

### 4.2.3 Objective Three: *The effect of statutory land-tenure system on the socio-economic empowerment of women in Bamenda Municipality.*

Table 4.4 presents the results of the logistic regression analysis, shows how the statutory laws for landownership influence women's socio-economic empowerment. The statutory land-tenure index registers a logit coefficient of 0.44 (p = 0.00), indicating that increased legal awareness and positive perceptions of official regulations do improve the likelihood of empowerment. Women who comprehend the 1974 Land Ordinance tend to, favour statutory law over customary law. Women who, are informed about the legal repercussions of land deprivation are also more likely to report being empowered. However, the marginal effect is minimal, at only 0.02 (p = 0.00). A one-unit increase in legal understanding boosts the probability of empowerment by merely two percentage points. The relationship between official legal frameworks and actual empowerment is statistically verifiable but very modest in its practical application.

Far more influential factors shaping women's empowerment are demographic and socio-economic variables, which are the primary obstacles. Marital status plays a significant role: Monogamous marriage reduces empowerment (coefficient -3.76), and widowhood is even more detrimental (-4.47), negatively affecting both access to land and social standing compared to single women. Conversely, vocational training offers a substantial advantage (coefficient 2.46), demonstrating that practical skills directly enhance financial and social position. Occupation also has a profound effect: Women engaged in livestock farming exhibit considerably lower empowerment (coefficient -6.11) than those cultivating crops, likely due to lower income or social prestige.

The method of acquiring land also yields important insights. Compared to land allocated by customary leaders, both inheritance and purchase actively reduce empowerment—inheritance by -1.77, and purchase by a notable -4.53. Purchasing land appears to be the least favourable option, suggesting that women who acquire land this way may face unofficial legal challenges, severe financial burdens or obtain low-value, marginal plots. A positive observation is that participation in "Njang" village savings groups significantly boosts empowerment (coefficient 3.32), indicating that informal financial cooperation is much more effective than formal land rights in practice.

**Table 4.4:** Probit regression results on the effect of statutory land-tenure system on the socio-economic empowerment of women in Bamenda Municipality.

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | Logistic coefficients | | | | Marginal effects | | | |
| | empowerment | | | | empowerment | | | |
| Variables | coef | aster | se | pval | coef | aster | se | pval |
| | | | | | | | | |
| Women's socio-economic empowerment (1=women empowered and 0= women not empowered) | . | | . | . | . | | . | . |
| Statutory Land-Tenure System Index | 0.44 | *** | 2.40 | 0.00 | 0.02 | *** | 1.20 | 0.00 |
| Age: (base:18-25 years) | | | | | | | | |
| 26-35 years | 0.76 | | 1.36 | 0.58 | 0.76 | | 1.36 | 0.58 |
| 36-45 years | 0.39 | | 1.62 | 0.81 | 0.39 | | 1.62 | 0.81 |
| 46-55 years | -1.15 | | 1.17 | 0.33 | -1.15 | | 1.17 | 0.33 |
| Marital status: (base: single) | | | | | | | | |
| Married (monogamous) | -3.76 | ** | 1.61 | 0.02 | -3.76 | ** | 1.61 | 0.02 |
| Married (polygamous) | - | | - | - | - | | - | - |
| widowed | -4.47 | *** | 1.51 | 0.00 | -4.47 | *** | 1.51 | 0.00 |
| Education: (base: no formal education) | | | | | | | | |
| Primary school | -1.11 | | 1.42 | 0.44 | -1.11 | | 1.42 | 0.44 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Secondary/high school | 1.52 | | 1.28 | 0.24 | 1.52 | | 1.28 | 0.24 |
| Vocational/technical training | 2.46 | * | 1.26 | 0.05 | 2.46 | * | 1.26 | 0.05 |
| Occupation: (base: crop farming) | | | | | | | | |
| Livestock rearing | -6.11 | ** | 3.06 | 0.05 | -6.11 | ** | 3.06 | 0.05 |
| Petty trading/business | 0.59 | | 1.13 | 0.60 | 0.59 | | 1.13 | 0.60 |
| Civil servant/public sector | -1.15 | | 1.11 | 0.30 | -1.15 | | 1.11 | 0.30 |
| Income: (base: <25,000 FCFA) | | | | | | | | |
| 25,001-50,000 FCFA | -2.21 | | 1.96 | 0.26 | -2.21 | | 1.96 | 0.26 |
| 50,001-100,000 FCFA | -0.67 | | 1.84 | 0.71 | -0.67 | | 1.84 | 0.71 |
| 100,001-200,000 FCFA | 1.52 | | 1.68 | 0.36 | 1.52 | | 1.68 | 0.36 |
| Household size: 1-3 persons | -0.82 | | 1.15 | 0.48 | -0.82 | | 1.15 | 0.48 |
| 4-6 persons | -1.43 | | 1.19 | 0.23 | -1.43 | | 1.19 | 0.23 |
| 7-9 persons | -0.49 | | 1.05 | 0.64 | -0.49 | | 1.05 | 0.64 |
| Land access | | | | | | | | |
| (base: Allocated by Fon/traditional council) | | | | | | | | |
| Inherited from father/husband | -1.77 | * | 0.98 | 0.07 | -1.77 | * | 0.98 | 0.07 |
| Purchased (with/without land title) | -4.53 | ** | 2.05 | 0.03 | -4.53 | ** | 2.05 | 0.03 |
| Rented/leased | -0.04 | | 1.20 | 0.97 | -0.04 | | 1.20 | 0.97 |
| Membership in economic groups | | | | | | | | |
| (base: Common initiative group (CIG) | 0.39 | | 2.39 | 0.87 | 0.39 | | 2.39 | 0.87 |
| Njangi (village savings and loans) | 3.32 | ** | 1.53 | 0.03 | 3.32 | ** | 1.53 | 0.03 |
| Cooperative society | 1.17 | | 1.34 | 0.38 | 1.17 | | 1.34 | 0.38 |
| Constant | 3.82 | *** | 3.01 | 0.01 | 3.82 | *** | 3.01 | 0.01 |
| Observations | 400 | | | | 400 | | | |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
***Source:*** Researcher's fieldwork (2026)

### 4.3 Discussion of Results by Objectives

#### 4.3.1 Objective One: Disparities in Women's Empowerment by Land Title Ownership

Statistical analysis, using the Oaxaca-Blinder decomposition, reveals a significant difference of 14.51 points ($p<0.01$) in empowerment levels between women who possess formal land titles and those who do not. This disparity is primarily due to systemic influences (coefficients effect: -13.51 points, $p<0.01$) rather than inherent differences in personal attributes or resources (endowment differences), indicating that underlying structural issues are the main cause.

This finding is consistent with studies by Ndamsa and Njong (2023) in Cameroon, which found that policies enhancing land access more effectively reduce food scarcity than gender equality policies alone. Similarly, Kearney et al. (2022) in North Carolina noted that structural discrimination contributes to gender disparities in land ownership. The observation that older women without land titles experience considerable disadvantages (-2.624, $p<0.10$) corroborates Diiro et al. (2022), who reported that older women are particularly vulnerable across Tanzania, Guinea, Malawi, and the DRC due to traditional practices and limited legal awareness.

#### 4.3.2 Objective Two: Customary Land Tenure and Women's Access to Land

Results from probit regression demonstrate that traditional customary laws consistently impede women's ability to acquire land. Women in polygamous marriages, for instance, face a 15% lower chance of accessing land ($p<0.05$), aligning with Turay's (2025) research in Sierra Leone. Women aged 46–55 have a 17% reduced likelihood of land access ($p<0.05$), consistent with Bartolomei (2025) in Zambia, who highlighted how customary practices continuously threaten women's rights throughout their lives.

Furthermore, having secondary education is linked to a 14% decrease in land access ($p<0.05$) and

vocational training to a 19% decrease ($p<0.05$), supporting Bartolomei's (2025) conclusion that formal education alone cannot overcome the barriers imposed by customary law. Women with over two decades of farming experience also face a 19% reduction in land access ($p<0.01$), reinforcing Ndamsa and Njong's (2023) assertion that women's agricultural contributions are frequently undervalued in land distribution.

### 4.3.3 Objective Three: Statutory Land Tenure and Women's Empowerment

Paradoxically, knowledge of the 1974 Land Ordinance is associated with lower empowerment (coefficient = -2.12, $p<0.05$). This aligns with Massawe and Mmbando (2022) in Tanzania, where legal recognition often fails due to the coexistence of multiple legal systems and sociocultural norms that hinder enforcement. Conversely, the belief that denying land rights is a criminally punishable offense has a strong positive effect on empowerment (coefficient = 7.44, $p<0.01$), supporting Mvula and Chirwa (2021) in Malawi.

Membership in 'Njangi' savings and loan groups significantly boosts empowerment (coefficient = 3.32, $p<0.05$), consistent with Tawah's (2015) ethnographic study in Bamenda showing that 81% of market traders belong to Njangis. Women who purchase land are considerably less likely to be empowered (coefficient = -4.53, $p<0.05$), supporting Diiro et al. (2022) regarding common obstacles. Bereaved women, particularly, experience disempowerment (coefficient = -4.47, $p<0.01$), consistent with Turay's (2025) findings on the vulnerability of widows to disinheritance, especially those from polygamous unions.

## 5 Practical Implications of the Study

The study makes six primary recommendations on addressing the issue of women's unrecognized agricultural labour in Bamenda. One, it proposes integrating customary and official land administration systems. This would mean establishing community legal assistance centres and mobile conflict resolution units, as mere legal awareness is insufficient without proper enforcement. Two, it would be necessary to publicly prosecute significant violations of land rights while obligating traditional leaders to communicate penalties for infringing on women's rights in local dialects

Three, government should collaborate with forward-thinking traditional leaders to formalize inheritance protections and provide customary documents confirming women's rights to use land.

Four, there is need to target specific population segments: accelerating land registration for women aged 46-55 (who experience 17% lower access) and for widows (who have 11% lower access). Additionally, there should be compulsory joint registration of marital assets and revising marriage laws to ensure shared ownership. Five, to counteract the negative impact of education (where secondary schooling reduces access by 14% and vocational training by 19%), the study recommends incorporating land rights education into school curricula. Six, the study proposes implementing a “Long-Serving Female Farmer Land Recognition Programme for those with over two decades of experience (who currently have 19% less access), formally granting ownership titles to the plots they have cultivated for many years.

## 5.2 Conclusion

Conducted in Cameroon’s Bamenda Municipality, this study affirms that women form the primary agricultural workforce but seldom hold legal land-ownership. Among 400 participants, 85.6% reported a sense of empowerment even though, only 22% held formal land documentation. Statistical analysis indicates that the differences in empowerment between women with and without land titles result from broader systemic issues rather than individual characteristics such as age or education.

Traditional legal systems actively perpetuate exclusion: Marriage reduces women's independent access to land by 5–15%, while women aged 46-55 are 17% less likely to acquire land, and farmers with over two decades of experience face a 19% reduction in land access compared to those new to farming. Moreover, formal legislation exhibits contradictions. While awareness of the equal rights provision of the 1974 Land Law is linked to reduced empowerment, confidence in legal penalties for

land deprivation correlates with increased empowerment.

Given these findings, this study concludes that the core problem is not individual shortcomings but rather structural barriers rooted in long-standing customs and the gap between legal provisions and their actual enforcement. Effective solutions require strengthening legal safeguards, creating economic avenues for land acquisition, updating traditional systems and directing support towards vulnerable populations, including older women, widows and experienced farmers.

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