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Harnessing Microcredit for Sustainable Poverty Alleviation in the Arid Regions of Kitui County, Kenya

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Abstract

Arid and semi-arid lands (ASALs) face low access to formal financial services, food insecurity and low rainfall which collectively hinder economic resilience and development. These has continued over the years irrespective of policy frameworks such as Bottom-Up Economic Transformation Agenda and Vision 2030. This study explores the role of microcredit as an enabler for sustainable livelihoods in the arid regions of Kitui County, Kenya. Grounded on the theory of Sustainable Livelihoods and Financial Inclusion, the study examines how access to microcredit enhances Income Growth Rate, Livelihood Diversification Score, Savings and Financial Resilience Index, Social Empowerment Score and Household Welfare Improvement Ratio. Using a mixed-methods approach and convergent parallel design the study combines quantitative data collected from 3500 microcredit beneficiaries and qualitative interviews with key stakeholders, including microfinance institutions, local leaders and community-based organizations. The sample size was 357 obtained via Yamane (1967) formula and purposive sampling technique was used to collect views from stakeholders. Findings reveal that access to microcredit significantly enhances asset acquisition, boosts microenterprise development and strengthens food security at the household level. Furthermore, microcredit was found to promote social inclusion by empowering marginalized groups who are often excluded from conventional banking systems. The research concludes that when effectively structured and accompanied by enabling policies, microcredit can be a vital instrument in achieving inclusive and sustainable development in arid regions.

Keywords: *Microcredit and Sustainable Poverty Alleviation*

1.1 Background of the study

Arid and semi-arid regions (ASALs) in Kenya face unique set of challenges that distinguish them from the rest of the country in terms of development priorities and interventions. Kitui County, has long been characterized by food insecurity and high levels of poverty which is normally catalyzed by erratic rainfall and recurring droughts (KNBS, 2023). The system of livelihood in this region is predominantly based on livestock rearing, informal micro-enterprises and smallholder farming which are highly susceptible to economic and climatic shockwaves. In light of this, microcredit has emerged as a potential transformative tool that can enable communities in arid areas to enhance resilience and improve the socio-economic status.

Several studies across Africa have confirmed that access to microcredit can lead to increased household incomes and women empowerment (Kariuki & Mugo, 2023). In many arid regions, women and youth are largely excluded from formal financial systems due to cultural constraints and lack of collateral (Otieno & Mwikali, 2021). Besides, rise of mobile lending platforms and other digital financial technologies have transformed the landscape of microcredit access in Kenya. However, the relevance and uptake of the digital platforms in ASALs remains uncertain due to technological gaps and limited digital literacy (Aden & Kirimi, 2023).

Microcredit is effective when complemented by non-financial services such as group-based lending models to foster social cohesion and accountability (Aden & Kirimi, 2023). However, high interest rates and over-indebtedness often undermine sustainability of microcredit in ASAL areas (Otieno & Mwikali, 2021). Moreover, lending microfinance institutions frequently overlook unique dynamics of ASAL communities, where repayment structure is pegged on seasonality and climatic conditions (Barasa & Gichuki, 2022).

In Kenya, microfinance sector has expanded considerably as a result of policy frameworks such as Bottom-Up Economic Transformation Agenda and Vision 2030 (Republic of Kenya, 2023). Nonetheless, most of the evidence on effectiveness of microcredit is drawn from agricultural zones and urban areas. Thus, there is insufficient localized knowledge on how microcredit functions under different constraints and opportunities such as ASAL regions. Besides, though microcredit has been extensively upheld as a tool for poverty alleviation, there is limited understanding of its long-term sustainability in ASAL regions. Considerably, a number of the existing literature on sustainability focus on short-lived indicators such as repayment rates and loan disbursement, while overlooking broader dimensions such as climate adaptation, asset accumulation, business survival and social empowerment (Njeru & Kamau, 2024).

1.2 Statement of the Problem

Arid and semi-arid lands regions have limited economic opportunities as a result of poverty and food insecurity. Kitui County mainly depends on rain-fed agriculture and livestock-based livelihoods making it highly vulnerable to climate unpredictability and recurring droughts (Omollo & Wamalwa, 2022). In efforts to address these challenges, microcredit has emerged as a promising intervention for promoting financial inclusion by enabling low-income families to capitalize on income-generating projects. Notwithstanding the growing admiration of microcredit structures across Kenya, their effectiveness in building viable livelihoods in fragile socio-economic environments like Kitui remains unclear and under-investigated.

While studies indicate that microcredit can promote resilience and enhanced household incomes (Ahmed & Ouma, 2021; Kariuki & Mugo, 2023), these findings often stem from research in urban and agriculturally endowed counties. Thus, there is limited empirical evidence tailored to ASALs, where economic activities are seasonal and socio-cultural dynamics complicate financial behavior. In addition, many government supported credit programs as well as microfinance institutions (MFIs) apply similar and uniform credit management models across counties and tends to overlook unique needs and challenges in arid regions. This mis-match habitually leads to low uptake of credit, high default rate and minimal impact to livelihood. Equally, there is a notable gap on the contribution of gender, age and education levels on microcredit utilization in arid regions. Although women and youth are common targets of credit agendas, there is limited empirical studies on the diverse

challenges they face in building sustainable businesses in arid zones. Moreover, the rapid increase in digital microcredit platforms such as M-Shwari has increased access to credits in Kenya towns, but their applicability in inaccessible ASAL areas remains poorly documented. Mistrust in cybernetic lending systems, digital illiteracy and poor internet connectivity hinder microcredit uptake in ASAL areas of Kitui County, yet these issues are scarcely explored (Aden & Kirimi, 2023). Given these gaps, there is a critical need to analytically examine how microcredit can be effectively harnessed to promote sustainable livelihoods in Kitui County ASAL regions.

1.3 The purpose of the study.

The objective of this study was to examine the role of Microcredit on Sustainable Poverty Alleviation in the Arid Regions of Kitui County.

1.4 Hypothesis

This study strived to respond to the following hypothesis:

Ho_1: Microcredit had no significant influence on sustainable poverty alleviation in arid areas of Kitui County

LITERATURE REVIEW

2.1 Theoretical Framework

2.1.1 Theory of Sustainable Livelihoods and Financial Inclusion

The proponents of theory of Sustainable Livelihoods and financial inclusion were Chambers and Conway in the year 1992. Sustainable Livelihoods and financial inclusion theory was later developed by the UK Department for International Development (DFID) in the year 1999**.**The theory recommends that sustainable livelihoods must be people-centered, receptive to local circumstances and support community empowerment. Later enrichments of the theory were integrated by organizations such as CARE, DFID and United Nations Development Programme (UNDP) to incorporate financial services such microcredit to enhance diversification of family income and household's resilience.

Over the years, the theory has progressed to include other components of financial inclusion such as access to microcredit in marginalized communities. Bateman and Chang (2012) and Zeller & Sharma (2013**)** expanded Sustainable Livelihoods and financial inclusion theory by incorporating concepts of gender dynamics, economic transformation and responsible microcredit in fragile ecologies like arid lands. This theory is critical as it provides a multi-dimensional approach for evaluating how microcredit can enhance asset ownership and economic resilience in Kitui's arid areas. Therefore, this theory acts as the link between financial access and sustainable livelihood in ASAL areas.

Sustainable Livelihoods and financial inclusion theory assumes that households are capable and willing to engage in income-generating activities when they have necessary resources. In addition, the theory assumes that access to credit directly enhances use of other capitals such as human being. Equally, the theory assumes that local institutional policies play a critical role in easing or restraining access to credit opportunities. Lastly, the theory assumes that vulnerability can be mitigated through diversified livelihood strategies and improved financial services.

Despite its strengths, Sustainable Livelihoods and financial inclusion theory has certain confines. For instance, it does not satisfactorily address structural disparities such as gender biasness in credit access or other macroeconomic restrictions affecting microcredit performance. The theory also tends to overemphasize poor households on sustainable poverty alleviation which often overlooks political and cultural dynamics that influence access to credit. Moreover, the theory may undermine the ability of microfinance to offer credit resulting to over-indebtedness when improperly managed. Sustainable Livelihoods and financial inclusion theory is relevant to this study as it helps in unlocking the question on how can microcredit contributes to economic resilience and poverty reduction in Kitui's arid regions.

2.2 Empirical Review

2.2.1 Microcredit and Sustainable Poverty Alleviation

Jaw Awoke, Tefera and Ayinewa (2024) did a study on Micro-loans and its macro-impacts in Habru Woreda, Ethiopia. The study's target population was Small-scale agrarian households and used a sample size of 200 households. The findings indicated that credit borrowers had significantly higher asset values and expenditures levels. The study concluded that microcredit supports asset accumulation in households, though findings on poverty reduction appeared mixed and varied. It was recommended that borrowers should balance their investment to consumption to enable them acquire right benefits.

The study by Nazrul (2022) on impact of micro-credit on the livelihoods of clients in Sunamganj District, Bangladesh targeted borrowers and non-borrowers and used a sample size of 200 persons. The findings indicated that income and investment increased significantly with reduced debt when food consumption went up. The study concluded that microcredit boosts income and investment, but marginally affects savings. It was recommended that extending loan terms to at least 5 years would increase loan size and lower interest.

Makara et al. (2024) in Lesotho did a study on microfinance and poverty alleviation by targeting SILC group members with a sample size of 27. The study found that microfinancing helped in improving household income and enhanced social relations. The study concluded that Savings-led microfinance improved social welfare. It was recommended that microfinancing would enhance capacity building initiatives in the community.

The study by Gichuki and Kamau (2022) on financing agribusiness in Kenya targeted smallholder farmers with a sample size of 300 farmers. The study found that credit Access was greatly influenced by farm size. It was concluded that inability to afford credit was a great barrier to financial inclusion. The study recommended that credit needs to be tailored to the needs of the people to enhance access.

Kawira (2020) did a study on micro-Credit and Living Standards of people in Tharaka Nithi using a target population of Tharaka-Nithi residents and a sample of 150 households. The study found that micro-Credit improved community's living standards although it was constrained by its affordability. The study concluded and recommended that microfinance institutions should subsidize interest rates to make credit attractive.

The study by Kariuki and Mugo (2023**)** concentrated on microcredit in Semi-Arid Kenyan Counties using a sample size of 350 mixed rural households. The study found that microcredit enhanced food security, increased family income as well as literacy level of the community. It was concluded that microcredit would be beneficial to the community if households were supported to acquire it. The study recommended that communities should be trained on how to acquire credit.

Jephitha et al. (2025) did a study on Microfinancing and poverty alleviation in arid areas of Kitui County. The target population was 5669 members of the six microfinance institutions and a sample size of 460 members was selected through stratified random sampling method. The study found out that microcredit had a statistically significant influence on poverty alleviation. It was concluded that microfinancing influenced poverty alleviation when the credit acquired was used for the intended purpose. The study recommended that credit lending institutions should lower their interest rate by mobilizing savings in the informal sectors to improve access to finance.

2.2.2 Summary and Research Gaps

Across contexts, microcredit supports income growth, resilience and financial inclusion but its success majorly depends on whether financing structures are formal or informal. In addition, microcredit alone is not enough in enhancing sustainable livelihoods, it needs to be paired with other complementary services such as education, training, ICT and market support. Equally, affordability to credit requires gender-sensitive approaches to increase women's engagement.as well as incorporating environmental and climate resilience financial products to circumvent climate variability in arid regions. On the other hand, digital innovation can improve access to credit, but lending institutions needs to address infrastructural barriers and the interplay between digital microcredit and traditional finance.

Research Methodology

The study adopted mixed-methods approach and specifically used convergent parallel design. The target population of the study was 3500 microcredit recipients and 30 stakeholders comprising of microfinance institutions, local leaders and community-based organizations. A sample of 357 microcredit beneficiaries was selected using stratified random sampling based on location and type of lending institution via Yamane’s formula (1967). Qualitative data from 30 stakeholders was collected through purposive sampling technique. Data was collected by use of a pre-tested structured questionnaire. Data was then analyzed by use of Stata. The study performed diagnostic tests on the data. In addition, inferential statistics was done to determine the relationship between predictors and the response variable.

The following logistic regression model was estimated. A value of 1 indicated that household’s poverty level was likely to decrease, while a values of 0 indicate that a household’s poverty level was likely to increase or remain constant.

$$\text{Ln (odds ratio of P)} = ß_0 + ß_1L + ß_2U + ß_3S + ß_4H + ß_5A + u$$

Where P is Sustainable poverty alleviation, L is Income Growth Rate, U is Livelihood Diversification Score, S is Savings and Financial Resilience Index, H is Social Empowerment Score, A is Household Welfare Improvement Ratio.

β_0 is the constant, βis are coefficients of independent variables where i is from 1 to 5, and μ is a stochastic error term measuring the effect of other variables that affect household poverty alleviation

Research Findings

4.1 Multicollinearity Test

Variable	VIF	1/VIF
Income Growth Rate	0.72	1.39
Livelihood Diversification Score	0.68	1.47
Savings and Financial Resilience Index	0.61	1.64
Social Empowerment Score	0.58	1.72
Household Welfare Improvement Ratio	0.75	1.33

The study tested for multicollinearity using Variance Inflation Factor. From table above, the obtained mean VIF was 0.668 and the study concluded that multicollinearity was not a problem because the variables used were statistically independent.

4.2 Breusch-Pagan test for heteroscedasticity

Ho: Constant variance

Variables: fitted values of P

chi2(1) = 8.79
Prob>chi2 = 0.0030

The study tested whether the residuals from the logistic estimator were normally distributed at a 5% level of significance to control for heteroscedasticity. The -value obtained was p=0.003, indicating that heteroscedasticity was not a problem in the data**.**

4.3 Logistic Regression

Logistic regression Number of obs = 357
LR chi2(5) = 75.61
Prob> chi2 = 0.0000

Log likelihood = -170.37738 Pseudo R2 = 0.8403

Logistic regression	**Number of obs = 357**		
	LR chi2(5) = 75.61		
Prob >chi2 = 0.0000			
Log likelihood = -170.37738	Pseudo R2 = 0.8403		
Variables	Odds Ratio	P>|z|	95% Confidence Interval
i. Income Growth Rate	1.000004	0.002	1.000002-1.000005
ii. Livelihood Diversification Score	1.000001	0.106	.9999999-1.000002
iii. Savings and Financial Resilience Index	1.030477	0.564	0.9305743-1.141104
iv. Social Empowerment Score	1.642924	0.024	.9714399-2.778554
v. Household Welfare Improvement Ratio	0.9999996	0.093	0.9999992-1.0

The results in the table show that Income Growth Rate and Social Empowerment Score were statistically significant because when the borrowed amount was used prudently it would enhance growth of household income and also foster group participation and gender empowerment especially the youth and women. The coefficient of Livelihood Diversification Score and the Savings and Financial Resilience Index and Household Welfare Improvement ratio were not statically significant in sustainable poverty alleviation.

4.4 Discussions of Research Findings

The results indicated that Income Growth Rate and Social Empowerment Score were statistically significant predictors of sustainable poverty alleviation. The assertions supports the study by Kariuki and Mugo (2023**)** who found that microcredit enhanced food security, increased family income as well as literacy level of the community. This therefore emphasizes the critical role microcredit plays in augmenting household income when loaned amount is managed efficiently. Households that used borrowed resources reasonably reported tangible income growth, signifying that microcredit can serve as a catalyst for economic empowerment in ASAL areas.

Equally important was the Social Empowerment Score which underscores advancement in social dimensions such as gender inclusivity and group participation. These supports the study by Makara et al. (2024) who argued that microfinancing helped in improving household income and enhanced

social relations. Therefore, access to microcredit in ASAL areas could foster greater inclusion of youth and women in financial and community decision-making processes, thereby stimulating social capital and resilience.

In contrast, Livelihood Diversification Score, Savings and Financial Resilience Index and Household Welfare Improvement Ratio were not statistically significant. The assertions were in agreement with the study by Kawira (2020) who argued that micro-Credit improved community's living standards though it was constrained by its sustainability and affordability. This suggests that although credit beneficiaries may receive microcredit, the shift from old-fashioned income sources such as subsistence farming to diverse livelihood streams remains inadequate. This could be attributed to structural barriers such as inadequate market access and weak value chains that impede diversification. Similarly, the non-significance of Savings and Financial Resilience Index and Household Welfare Improvement Ratio postulate that while microcredit may generate temporary gains, it may not be sufficient on its own to build long-standing household resilience or considerably improve overall welfare metrics.

4.5 Contributions of Research findings to the Society

The research will provide realistic data on the usefulness of microcredit as a strategy for poverty reduction and sustainability in marginalized regions of Kitui County. These results will assist microfinance institutions and policymakers to design and implement strategies tailored to the economic practicality and socio-cultural fabric of ASAL regions. By exploring on the particular challenges and opportunities of microcredit implementation in ASAL regions, the study will offer not only accurate but empirically driven recommendations to the lending institutions. The study will also enable residents to identify microcredit schemes that promote diversification of livelihoods and supports entrepreneurship. Finally, the study will add to scholarly literature on microcredit in arid regions by filling the critical knowledge gaps and offering a framework for future research.

5.1 Conclusion

The statistically significant influence of Income Growth Rate and Social Empowerment Score underscores the transformative ability of microcredit to create huge impact when it is effectively utilized. Thus, microcredit can be a powerful tool for advancing social inclusion, predominantly by empowering youth and women through increased participation in economic and community development activities. However, the findings also postulates that Livelihood Diversification, Savings and Financial Resilience, and Household Welfare Improvement, although theoretically linked to poverty alleviation, did not validate statistically significant outcomes in this context. This therefore suggests that application of microcredit alone without other complementary such access to market, financial literacy as well as capacity-building, may be inadequate in addressing the broader and long-term dimensions of poverty. Therefore, for microcredit to serve as a sustainable poverty alleviation approach in Kitui's arid regions, policy interventions must go beyond credit provision. Thus, there is a need for an integrated support systems that facilitate skill development, nurturing of saving culture, advocate for prudent utilization of loan and diversification of livelihoods. With such comprehensive approach, microcredit can be transformed from an instant financial relief into a sustainable pathway towards economic resilience and improved welfare in marginalized areas.

5.2 Recommendations

Microfinance institutions need to implement strong financial literacy programs before and after loan disbursement to ensure that borrowers can transform credit into useful ventures that can raise household income. Equally, they can develop specific loan products and mentorship programs tailored to youth and women to enhance inclusive economic growth and social cohesion. Microfinance institutions should encourage microcredit schemes that incorporate group dynamics such as peer monitoring, joint liability and shared business goals to enhance accountability especially in marginalized arid communities. Lastly, Although Livelihood Diversification Score and Savings and Financial Resilience Index were not statistically significant, further assessment needs to be done in order understand barriers that hinder their effectiveness by integrating complementary services such as savings mobilization strategies, market linkages and climate-smart agriculture to make these components more impactful.

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