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## EFFECTIVENESS OF MICROCREDITS PROVISION BY WOMEN DEVELOPMENT FUND ON ENHANCING HOUSEHOLD WELLBEING IN TANGA CITY, TANZANIA

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### ABSTRACT

The Women Development Fund, like other microcredit models, aims to uplift women who lack adequate access to financial services for the enhancement of their well-being. Its objective is to break the vicious cycle of poverty by facilitating income-generating activities, thereby increasing household income and expenditure. However, the actual effectiveness of WDF microcredits on enhancing well-being remains inadequately analysed. This study aimed at evaluating the effectiveness of the Women Development Fund microcredits on household well-being in Tanga City. The analysis was guided by the null operational hypothesis that the microcredits provided by WDF have no significant positive effect on household well-being in the City. A cross-sectional design was employed, and 100 female beneficiaries were selected as the sample size. Questionnaires, interviews, and focus group discussions were utilised as data collection tools. Results indicate that the percentage of Women Development Fund microcredits explains 56% of the variation in income and 61% in expenditure. It is concluded that Women Development Fund microcredits have a significant positive impact on household well-being, particularly with respect to settlement and children's education. However, the impact on medication and health was found to be insignificant (Wald Chi2 (09) = 11.0 for medication/health, Wald Chi2 (09) = 10.03 for settlement, and Wald Chi2 (09) = 10.03 for children's education). Therefore, it is recommended that the government and other stakeholders strengthen the WDF, increasing access to microcredits and implementing single-digit interest rates.

**Keywords:** Financial services, Microcredits, Microcredits provision, Women Development Fund, Household wellbeing.

**Paper type:** Research paper

**Type of Review:** Peer Review

### 1. Introduction

Microcredit programs is a vital facet of the global development landscape, emerged in the mid-1970s as a means to empower marginalised communities. Notably, the Grameen model in Bangladesh, devised by Dr. Mohamed Yunus in 1976, exemplifies this initiative. With its focus on providing loans to landless individuals, the Grameen model has proven successful, currently serving over 2.4 million clients, with 94% being women (Ledgerwood, 1999). Following its triumph in Bangladesh, this approach has been replicated in diverse developing nations, particularly in uplifting women. Furthermore, Banco Solidario (Bancosol) in Bolivia, a private bank established in 1992 from the NGO PRODEM, stands as another effective microcredit model (Robinson, 1996; Zeller et al., 2000).

However, despite such success stories, many African countries continue to witness women's marginalisation in terms of access to capital and credit facilities. Yet, exceptions exist, such as the Kenya Rural Enterprise Programme (K-Rep), which has witnessed remarkable achievements including decreased



loan cost per shilling, increased repayment rates, and substantial revenue generation. Tanzania too boasts a triumphant microfinance endeavours, PRIDE Tanzania, which has tripled loan volume and maintains a loan repayment performance of 99% (Paschal, 1988 cited in Makombe et al., 1999).

In Tanzania, government-backed initiatives like the Women's Development Fund (WDF) strive to foster women's economic empowerment. Established in 1993 through the Exchequer and Audit Ordinance of 1961, the WDF aims to provide low-interest loans to women, facilitated by the government and local authorities (URT, 2000). This initiative aligns with broader policies and strategies addressing gender equity and poverty eradication (Lumid, 2012; URT, 2013). While microcredit initiatives worldwide, including those from the WDF, aim to enhance household well-being, a comprehensive assessment of the WDF's effectiveness in this regard remains a significant research gap.

This study addressed this gap by analysing the effectiveness of credit provision by the Women's Development Fund in enhancing household well-being in Tanga City, Tanzania. Drawing on Sen's (1993) notion of "well-being freedom," the study investigated how microcredit influences household well-being through increased income, improved living conditions, better health, and enhanced education opportunities. Through an in-depth examination of the WDF's credit model, this research aims to contribute to the understanding of microcredit's impact on household well-being. The subsequent sections delve into the theoretical framework, methodology, results, and implications of this investigation.

## 2. Theoretical Framework

The theoretical framework underpinning this study is the Solidarity Circle Theory, conceptualised by Muhammad Yunus, a pioneering figure in microcredit, and epitomised by the Grameen Bank's success in the 1970s within Bangladesh. This theory is highly relevant to the investigation of the effectiveness of microcredit provision by the Women Development Fund (WDF) in enhancing household well-being in Tanga City, Tanzania. Yunus recognised the challenges faced by impoverished individuals in accessing credit, and in response, devised a credit program based on group lending, a departure from traditional financial institutions' collateral-based approach (Ledgerwood, 1999). The WDF too, adopted a group lending model, whereby women were organised into small entrepreneurial circles of 5 to 7 members, collectively accessing loans from the fund. The essence of this theory hinges on the idea that group lending fosters a sense of solidarity and mutual responsibility among borrowers, significantly curbing the likelihood of loan default.

In the context of this study, the Solidarity Circle Theory holds several implications, each bearing relevance to the investigation's objectives. Firstly, the theory emphasis on group dynamics and mutual support aligns with the WDF's aim to serve women who lack access to mainstream financial institutions. The collective nature of the model resonates with the WDF's focus on fostering empowerment through women's collaborative efforts, in contrast to profit-driven motives. Secondly, the theory's proposition of minimising loan delinquency underscores the potential impact on household well-being. By investigating the application of this theory within the WDF's microcredit approach, the study delves into whether this mechanism indeed leads to enhanced household well-being, as loans granted under a collective framework are postulated to have a lower risk of default. Furthermore, the Solidarity Circle Theory's premise of using social assets to cover defaults instead of physical collateral is pertinent to the context of marginalised women beneficiaries in Tanga City. It provides a lens through which to explore how social support networks within these circles influence loan repayment behaviours and subsequently contribute to the well-being of not just individual households but the collective unit as well.

Therefore, the Solidarity Circle Theory constitutes an essential foundation for understanding the mechanisms at play in the WDF's microcredit provision. Its emphasis on collective responsibility, mutual support, and risk-sharing aligns with the study's objectives of assessing the effectiveness of microcredits in enhancing household well-being. Through the lens of this theory, the study examines how the WDF's approach resonates with Yunus's pioneering concepts and whether its application leads to positive outcomes for marginalised women in Tanga City.

### 3. Methodology

This study was conducted in Tanga City, which is one of the 11 councils in Tanga Region. It is located along the Indian Ocean approximately 350 km by road to the north of the commercial capital city of Dar es Salaam. The city was selected because it has economically active women involved in income-generating activities and the city is involved in microcredits provision. Furthermore, the choice is due to the cultural, customary, and religious factors in the coastal areas where societies do not readily support women's efforts to be involved in microcredit services. The study adopted a cross-sectional research design. This design allowed the researcher to collect data at one point in time from different places (Kothari, 2009). Data were collected from 10 randomly selected wards in Tanga City Council. From each ward, 10 respondents were involved, resulting in a total of 100 respondents as the sample size selected from 6775 borrowers of WDF in the city. The sample size was computed using Yamane's formula of 1967.

Sample size of respondents from WDF borrowers.

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

$$\text{Thus, } S = \frac{6775}{1 + 6775(0.1)^2} = 98.7 \quad S=99$$

Where S=Sample size, N=women population receiving loans from WDF and e= level of precision or error.

The survey method using a questionnaire was employed as the data collection tool. A quasi-experiment control group approach with a pretest-posttest design was selected to evaluate the effectiveness of WDF microcredits on socioeconomic indicators reflecting household wellbeing. The data collected through questionnaire were organised, coded, and analysed using SPSS. Descriptive statistics such as percentages and frequencies, as well as inferential statistics such as ordinary least regression (specified in equation (1)) and binary logistic regression (given in equation (2)), were used for analysis.

Regarding ordinary least square (OLS) regression the model was as written in equation 1.

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_9 X_9 \dots\dots\dots (1)$$

Where:  $\hat{Y}$  = Income (TZS) (dependent variables).

Where:  $\hat{Y}$  = Expenditure (TZS) (dependent variables).

$\beta_0$  = Constant;  $\beta_1$  to  $\beta_9$  = regression coefficients of the predictor variables (independent variable)

$X_1, X_2, X_3 \dots\dots\dots X_n$  = Factors affecting effectiveness of microcredit to enhance income or expenditure women beneficiary of microcredits (independent variables).

n = numbers (any factors/all factors).

The factors are  $X_1$ = loan holder,  $X_2$ =Age,  $X_3$  = Marital status,  $X_4$  = Women education,  $X_5$  = Household size,  $X_6$  = Other sources of income,  $X_7$  =Times received loan,  $X_8$ =Amount of loan received,  $X_9$  =Years since loan received.

Regarding binary logistic regression the model was as written in equation 2. In practice, both the logit and probit models yield estimated choice probabilities that differ by less than 0.02, making them statistically indistinguishable with small sample sizes (Aldrich and Nelson, 1990). Consequently, there is little to guide the choice between the two (logit model and probit model). Therefore, the selection of the model specification remains fairly arbitrary, taking into consideration practical concerns such as the availability and flexibility of computer programs and personal preference and experience (Aldrich and Nelson, 1990). According to Madalla (1983, 1989) the choice between probit and logit models often comes down to convenience. As a result, both models have been widely used in various studies, but for this study, the logit regression was employed as we found it convenient.

The null operational hypothesis, which was that each of hypothesised determinants of the credit provided by WDF has no significant effectiveness for enhancing positively or negatively the household wellbeing in the Tanga city, was tested using binary logistic regression model since such a model is ideal for such

variables. According to Hosmer and Lamesow (2000); Powers and Xie (2000) the model was specified as follows:

$$\text{Logit}(\pi) = \log(P/1-P) = b_0 + b_1 X_1 + b_2 X_2 + \dots + b_k X_k \quad (2)$$

Where:

Logit ( $\pi$ ) = In (odds/event), that is the natural log of the odds of an event occurring.

$\pi$  = Prob (event), that is the probability that the event will occur

$1-\pi$  = Prob (event), that is the probability that the event will not occur

$b_0$  = constant of the equation

$b_1$  to  $b_k$  = Coefficients of independent/predictor/response variables

$k$  = Number of independent variables

$X_1$  to  $X_k$  = independent variables entered in the model are as shown in Table 1

The dependent variable in this study was a dummy variable representing the effectiveness of enhancing household wellbeing in terms of settlement, children's education, and health/medical aspects. A value of 1 was assigned if the household wellbeing was positively enhanced, and a value of 0 was assigned if the household wellbeing was not enhanced or had a negative impact. The regression analysis aimed to examine the contribution of nine independent variables on the dependent variable. The dependent variable encompassed three wellbeing aspects: settlement, health/medical, and education. These aspects were considered as key indicators of household wellbeing.

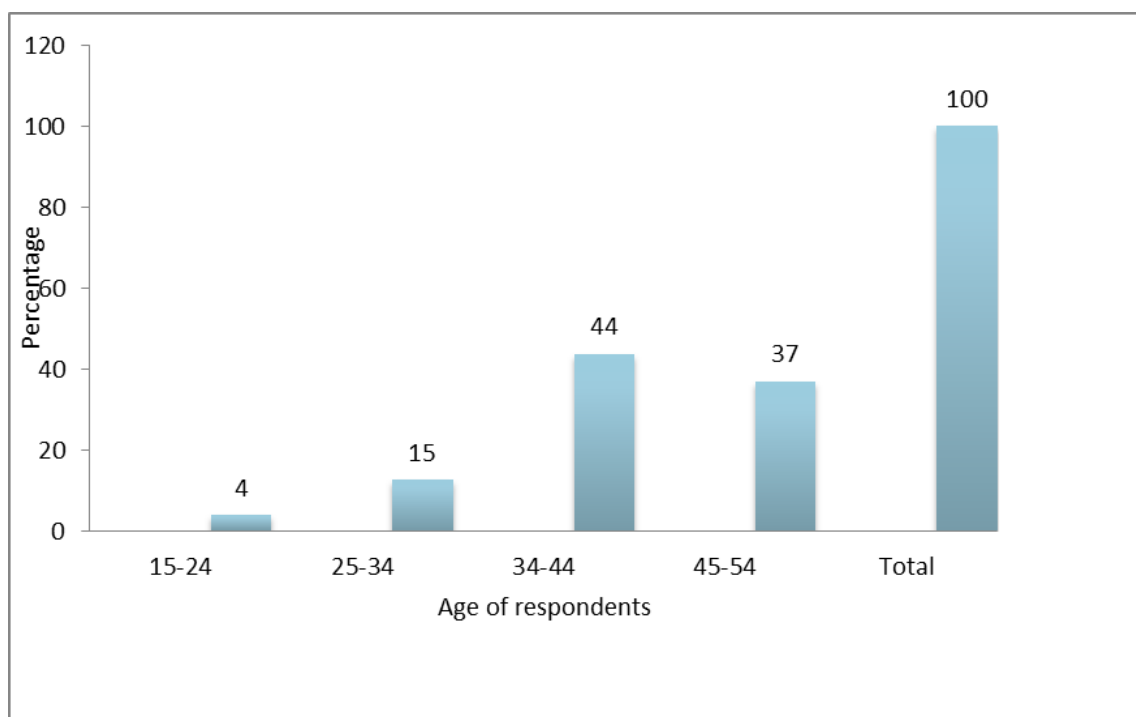
**Table 1: Independent variables entered in Binary Logistic regression model**

Independent variable	Types of variable	Explanation of variables
$X_1$ loan holder	Dummy	Experienced (old) = 1, New = 0
$X_2$ Age	Continuous	Active 31 -44 years= 1, Other ages = 0
$X_3$ Marital status	Dummy	Married =1, Other status= 0
$X_4$ Women Education	Dummy	Formal education = 1, No formal education= 0
$X_5$ Household size	Continuous	$\geq 9 = 1$ , Less than 9 = 0
$X_6$ Other sources of income	Dummy	Possess = 1, Not possess = 0
$X_7$ Times received loan	Dummy	Times $\geq 3 = 1$ , $3 >$ Times = 0
$X_8$ Amount of loan received	Dummy	Three or more offered =1, Less than three offered = 0
$X_9$ Years since loan received	Dummy	More than 1= 1, 1 or less = 0

## 4. Results and Discussion

### 4.1 Socio-Demographic Characteristics of the Respondents

The majority of the respondents had an average borrowing history of four years from WDF, with 46% borrowing for less than one year, 19% borrowing for two to three years, and 35% borrowing for four to five years. This finding indicates that women frequently take loans from WDF multiple times, suggesting their active participation in various socioeconomic activities in the study area. In terms of age, the majority of the respondents fell into the age category of 34–44 years old, accounting for 44% of the total respondents. This suggests that women within this age group are more likely to borrow funds for socioeconomic production activities, as they are in the energetic and active phase of life. This observation is consistent with the findings of Anne (2012), who noted that women actively involved in socioeconomic activities are typically between the ages of 31 to 44. The details of the findings are presented in Figure 1.



**Figure 1: The age of respondent**

Regarding the respondents' education level, literacy has always been seen as a door opening for undertaking business ventures, especially through the supply and application of loans. In this study, four categories of education levels were established and assessed. Approximately 8% of the respondents had no formal education, 37% had primary school education, 47% had secondary school education, and the remaining 6% had post-secondary education. In some cases, illiteracy has been identified as an obstacle to accessing loans, primarily due to the perception of illiteracy toward loans. However, in the case of WDF beneficiaries in Tanga, the prevalence of illiteracy is very unlikely to hinder loan access, as there are sufficient literate people. This finding is supported by other studies that suggest more educated individuals have a better ability to reduce risks in business ventures, and it is in line with Mohammad et al.'s (2016) findings that households with a more educated labour force generate more income. In this study, the researcher established that WDF borrowers can be categorised into two groups. The findings indicate that among the older borrowers, only 8% had informal education, while 37% had primary education, 47% had secondary education, and 6% had education beyond the secondary level. This suggests that those with up to secondary education have a greater chance to access loans provided by WDF. Another reason for this pattern is their higher understanding and awareness regarding loans compared to informal and primary loan beneficiaries.

Regarding the marital status of respondents, the study findings revealed significant differences between marital status and borrowing from WDF. The majority of borrowers, 35.9%, were married women, followed closely by separated respondents at 23.3%. Divorced respondents comprised 19.4% of the borrowers, while single individuals made up 18.4%. The research could not establish any reason for why widows were not part of this trend. This implies that the married group is driven by push and pull factors to involve in WDF loans to meet their financial requirements. Furthermore, regarding household size, the findings revealed its role in improving the income status of the household, depending on the structure and size of the household, particularly the size and age of its members. Most of the borrowers' households (41%) had between 9-10 members, and 31% had household membership ranging from 5 to 8 members. Households with one to four members comprised 28% of the respondents. One may speculate that in order to support larger households and achieve their wellbeing, external support through borrowing becomes essential.

## 4.2 Effectiveness of WDF Microcredits on Enhancing Household Wellbeing

The effectiveness of WDF microcredits on the wellbeing of women beneficiaries and their households was initially analysed using descriptive statistics and subsequently through inferential analysis.

### 4.2.1 Effects of WDF microcredits on medication expenditure

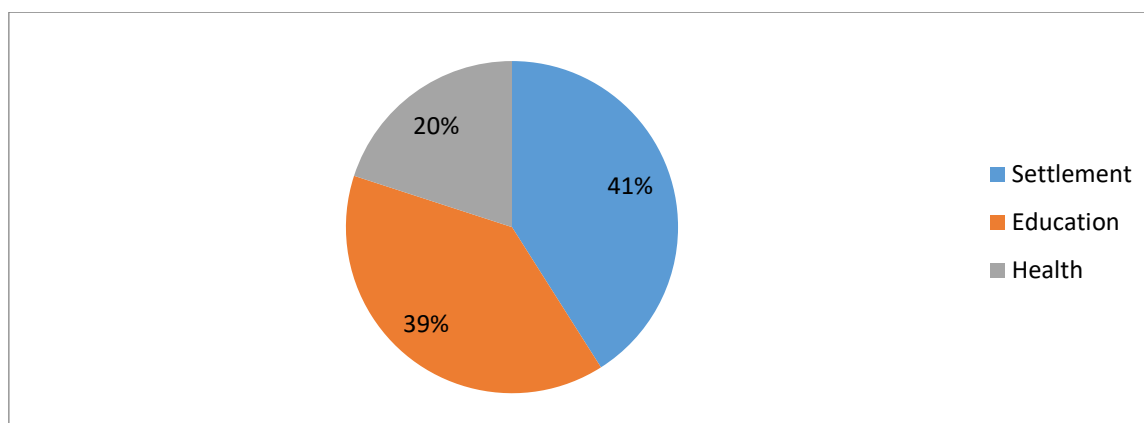
Figure 2 shows that 20% of the women who benefited from WDF have improved their access to health services. Providing microcredit financial services to the active poor has been recognised as a means of changing their status through improved access to financial services and one of the indicators of its benefits is improved healthcare, as observed by Danang (2016). On the other side of the coin, some studies reject the idea of providing credit to poor women, as Khatun (2013) does, based on the assumption of increased burden on women.

### 4.2.2 Effects of WDF microcredits on paying for children's education at the household level

The findings revealed that 39% of the respondents agreed that they have benefited in terms of education as a result of the loans. The main focus of this study was on the contribution of WDF to the wellbeing of households in Tanga City. From the foregoing, it has been revealed that WDF has uplifted the standards of living in the study area. This result is similar to the findings from Paulo (2014), whose study revealed that microcredit facilitated children's education, attendance at school, and enrolment. Loans provided by WDF made important needs for children affordable and available, reducing insufficient resources for women. However, the study's findings contradict those of Brannen (2010), conducted in Zanzibar, where no relationship was found between microcredit and household education expenditure.

### 4.2.3 Effects of WDF microcredits on the improvement of better housing:

The findings observed that 39% of the respondents revealed that WDF assisted them in improving their housing conditions. This finding is similar to the findings by Tshuma and Selome (2014) in a study of microfinance and women empowerment through WDF in Umguza district, Zimbabwe. The findings depicted that WDF, as a strategy, made a difference in the livelihoods of the recipients by enabling ownership of assets. However, in Tanzania and other countries, ownership of assets by women is still a problem, possibly due to cultural factors, low income, and other constraints. These findings contradict those of Koech (2011), whose study indicated that the loans failed to improve settlement conditions and instead increased burdens on people. A study conducted by Anne (2012) revealed that the utilisation of microfinance loans resulted in improved education standards, enhanced healthcare, improved sanitation, enhanced consumption and living standards, increased income, as well as a reduction in unemployment by providing an avenue for self-employment. In that study, the research aimed to find out from rural households in Bungoma County whether access to microfinance loans enabled them to access improved healthcare.



**Figure 2: WDF microcredit enhancement to household level**

It is evident that the findings in Tanga city align with Figure 2, where 41% of the households reported that WDF loans have contributed to improving their housing conditions. Additionally, 39% of the respondents

stated that they used the loans for their children's education, while 20% utilised the funds for health-related expenses. Health expenses seem to be more unpredictable and sudden, which might explain the relatively smaller proportion allocated to this category compared to other needs. The effect of each independent variable on the dependent variable (effectiveness of WDF microcredits on household wellbeing) can be either positive or negative, as indicated by the sign (positive or negative) of the individual logistic regression coefficients (B values) and their corresponding Wald statistics. A negative sign associated with a B coefficient indicates that the particular variable decreases the probability of the dependent variable (enhanced household wellbeing) being realized, while a positive sign indicates an increase in the probability of the event. For instance, in Table 2 variables such as marital status and household size both have negative values. This implies that these variables decrease the likelihood of WDF microcredits leading to enhanced household wellbeing. On the other hand, variables with positive B values increase the probability of successful household wellbeing due to WDF microcredits.

If there were any variables with B values equal to 0, it would indicate that those variables have no effect on the characteristics of successful WDF microcredits. However, in this study, all fourteen hypothesized variables were found to contribute as success characteristics of WDF microcredits leading to enhanced household wellbeing. Therefore, the second null hypothesis of this study was rejected, indicating that all independent variables in the model have a significant contribution to the success of WDF microcredits in improving household wellbeing.

#### **4.3 Inferential Analysis and Presentation of Income and Expenditure Findings**

The effectiveness of WDF microcredits in enhancing women households' wellbeing was also assessed through inferential statistics. The regression model shown in equation (1) was employed using Ordinary Least Square (OLS) regression to test the impact of microcredits on income and expenditure of women beneficiaries of WDF. Logistic Regression models were used to determine the effectiveness of microcredits in enhancing household expenditure, with the dependent variables being settlement enhancement, health/ability to pay for medicine, and children's education payment, as shown in equation (2). Heteroskedasticity-robust standard errors were applied to obtain more efficient estimation results for all regression models.

The findings indicate that the Adjusted R<sup>2</sup> for income is 0.56, meaning that 56% of the variation in income is explained by WDF microcredit, as shown in Table 2. Similarly, the Adjusted R<sup>2</sup> for expenditure per capita is 0.61, indicating that 61% of the variation in expenditures per capita is explained by WDF microcredit, as shown in Table 3. Notably, WDF loans have a significantly positive effect on expenditure per capita compared to income per capita, as reflected in the results of the model. However, despite the impact of WDF on income and expenditure, respondents do not perceive any enhancement in their ability to spend on medication and health improvement. The findings reveal that the variable "amount of loan received" positively influences income in household wellbeing. Specifically, as the WDF loan amount received increases by 1.12 units, the household's expenditure increases by 0.037 Tanzanian shillings, assuming other predictor variables remain constant. This implies that an increase in the loan size influences expenditure positively.

Furthermore, the frequency of receiving loans significantly impacts the income and expenditure of loan holders, with predicted income being about 15% higher and the predicted expenditure being 25% higher due to regression results, as shown in Table 3. These findings are consistent with previous studies by Tshuma and Selome (2014), Banzi (2012), and Mgalula (2012), which found that loan services provided by microcredit institutions contribute to sustainable consumption expenditure at the household level and improve households' wellbeing. The Ordinary Least Square (OLS) regression models used in this study demonstrated that the amount of loans has a positive significance in the expenditure of loan holders for production. The results of the first set of OLS regression models, after correcting for heteroskedasticity, are presented in Table 2 and Table 3.



**Table 2: Effectiveness of WDF microcredits to income increase enhancement**

OLS Regression Results		
	B	Significance
loan holder	0.15	0.01***
Age	0.12	0.01***
Marital status	-0.10	0.05**
Women Education	0.06	0.00***
Household size	-0.16	0.001***
Other sources of income	0.14	0.01***
Times received loan	0.23	0.09*
Amount of loan received	0.48	0.321
Years since loan received	0.024	0.97
Constant		0.001***
Adjusted R2	0.56	
F Probability	0.001	

Note: \*\*\*p<0.001, \*\*p<0.05, \*p<0.1; p-values in parenthesis

**Table 3: Effectiveness of WDF microcredits to expenditure increase enhancement**

OLS Regression results		
	B	Significance
loan holder	0.25	0.01***
Age	0.07	0.07*
Marital status	0.01	0.88
Women Education	0.02	0.35
Household size	-0.15	0.001***
Other sources of income	0.25	0.01***
Times received loan	0.88	0.383*
Amount of loan received	1.12	0.037**
Years since loan received	0.84	0.83
Constant	2.13	0.001***
Adjusted R2	0.61	
F Probability	0.004	

Note: \*\*\*p<0.001, \*\*p<0.05, \*p<0.1; p-values in parenthesis

#### 4.4 Effectiveness of microcredit expenditure on settlement, children education and health (wellbeing) of WDF microcredits beneficiaries

The effectiveness of microcredit expenditure on settlement, children's education, and health (wellbeing) of WDF microcredit beneficiaries was assessed using a logistic regression model as specified in equation (2). The regression was conducted to test the null operational hypothesis that the microcredits provided by WDF have no significant effect on improving household wellbeing in Tanga city. Logistic regression models were employed to test the effectiveness of microcredits on respondent's household wellbeing, specifically in terms of settlement enhancement, health improvement, and education for children enhancement through the ability to meet expenses, as shown in Tables 4, 5, and 6.

**Table 4: Effectiveness of microcredit utilisation on settlement enhancement**

Logistic Regression results			
	B	Df	Significance
loan holder	1.00	1	0.01***
Age	-0.09	1	0.761
Marital status	0.07	1	0.05**
Women Education	-0.12	1	0.73
Household size	0.22	1	0.004***
Other sources of income	0.41	1	0.09*
Times received loan	0.64	1	0.09*
Amount of loan received	0.63	1	0.0***
Years since loan received	0.04	1	0.35*
Constant	4.20		0.019**
Wald Chi2 (09)	10.34		
Pseudo R2	0.0919		
Chi2 Probability			0.026**

NOTE: \*\*\*p<0.001, \*\*p<0.05, \*p<0.1; p-values in parenthesis

**Table 5: Effectiveness of microcredit use on Spending on medication and Health**

Logistic Regression results			
	B	Df	Significance
loan holder	0.35	1	0.12
Age	-0.73	1	0.15
Marital status	-0.28	1	0.09*
Women Education	-0.38	1	0.27
Household size	0.15	1	0.02**
Other sources of income	0.18	1	0.46
Times received loan	-0.75	1	0.16
Amount of loan received	0.01	1	0.97
Years since loan received	0.01	1	0.90
Constant	5.89		0.009***
Wald Chi2 (09)	11.00		
Pseudo R2	0.0955		
Chi2 Probability	0.068*		0.068*

NOTE: \*\*\*p<0.001, \*\*p<0.05, \*p<0.1; p-values in parenthesis

**Table 6: Effectiveness of microcredit use on Children’s Education enhancement**

Logistic Regression results			
	B	Df	Significance
loan holder	0.63	1	0.02**
Age	-0.19	1	0.03**
Marital status	-0.04	1	0.85
Women Education	-0.11	1	0.001***
Household size	0.06	1	0.001***
Other sources of income	0.48	1	0.48
Times received loan	0.12	1	0.83*
Amount of loan received	0.17	1	0.04**
Years since loan received	0.01	1	0.83
Constant	2.81	1	0.08*
Wald Chi2 (09)	10.03		
Pseudo R2	0.0830		
Chi2 Probability			0.023**

NOTE: \*\*\*p<0.001, \*\*p<0.05, \*p<0.1; p-values in parenthesis

#### 4.5 Explanatory variables, B coefficients and correlations

The significance of explanatory variables in affecting the variance of the response variable was assessed by examining both the B coefficients and correlations. This approach helps avoid the problem of logistic regression coefficients being found insignificant when corresponding correlations are significant, and vice versa. The analysis revealed that medication/health had the highest significance (Wald Chi2 (09) = 11.0), followed by settlement (Wald Chi2 (09) = 10.03) and children education (Wald Chi2 (09) = 10.03) as shown in Tables 4, 5, and 6. Additionally, the correlations between these variables and the dependent variable were also significant ( $p \leq 0.05$ ) for settlement and children education, and ( $p \leq 0.1$ ) for medical/health, confirming the importance of the explanatory variables. If the decision to determine the importance of the predictor variables was based only on correlation results, the following variables were found to be important for each case:

- (i) For settlement: amount of loan received, loan holder, household size, marital status, other sources of income, times received loans, and years since loan received.
- (ii) For medication/health: household size and marital status.
- (iii) For children’s education: women education, household size, loan holder, age, amount of loan received, and times received loans.

If we consider the entire household wellbeing, marital status was important for all three cases, and the following variables were important for at least two cases: amount of loan received, loan holder, household size, and times received loans. Other variables, such as years since loan received, education, age, and other sources of income, were important for at least one case.

The analysis also revealed that being a microcredit holder significantly increased the probability of perceiving improvement in settlement by 100%, and the probability of perceiving improvement in children’s education level by 63%, as shown in Tables 4 and 6. However, microcredit had an insignificant effect on the probability of improvement in spending on medication and health by 35%, as shown in Table 5. This indicates that the likelihood of loan holders using loans to improve settlement in the study area is greater than using loans for education and health. The frequency and amount of loans received also had a positive and significant impact on settlement and education. Other studies have also found that participation in microcredit schemes positively influences household expenditure on children’s education, enrolment, and attendance. In summary nutshell, based on these findings, the null hypothesis was rejected, indicating significant effectiveness of WDF microcredits in enhancing household wellbeing. The Wald test showed that all model variables contributed significantly. Given a large sample of 100, and the fact that

there is no variable in question that cannot be removed without harming the model fit, the Wald Chi-Squared Test supported the rejection of the null hypothesis.

## 5. Conclusion

The objective of this study was to analyse the effectiveness of microcredits provided by WDF in enhancing household wellbeing. The findings revealed that WDF microcredits were effective in increasing the income of female beneficiaries, and the expenditure was higher than the income. Notably, the expenditure showed significant effectiveness in settlement development, children's education, and medical expenses. All of the independent variables were found to contribute significantly to the effectiveness of enhancing household wellbeing (Wald  $\chi^2$  (09)  $\geq 10.03$ ), leading to the rejection of the null hypothesis. Furthermore, the study concluded that WDF microcredits had a positive impact on various aspects of household wellbeing for women beneficiaries. This included paying school fees for their children, improving housing conditions, and covering medical expenses for their families. It was observed that WDF loans had a relatively greater significance on expenditure per capita compared to income per capita. Based on the effectiveness concluded by this study, it is recommended that the government and other stakeholders take measures to reduce interest rates to single-digit percentages, encouraging more women to participate in the WDF program and access loans for their businesses, thereby improving their household wellbeing. It is crucial to address any conditions or barriers in the program that hinder women's access to microcredit and mainstream the programs to be accessible to all women. In addition, the paper suggests conducting further research to identify and understand the challenges faced by women involved in income-generating activities in Tanga city. This would provide valuable insights for designing targeted interventions to support and empower women in their economic endeavors.

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