The Nigerian Journal of Energy & Environmental Economics
Department of Economics,
Nnamdi Azikiwe University, Awka,
Anambra State, Nigeria.

Web:www.aeeeng.org *ISSN 2006-8395*

MICROCREDIT AND INCOME GENERATION FOR POVERTY REDUCTION AMONG RURAL WOMEN ENTREPRENEURS IN SOUTH-EAST NIGERIA

By

Ogochukwu Edith Nkamnebe, Uchechukwu Collins Nwogwugwu
Uju Regina Ezenekwe[1] https://orcid.org/0000-0003-2751-4602
Geraldine Ejiaka Nzeribe[1] https://orcid.org/0000-0003-1257-7504
[1]Department of Economics, Nnamdi Azikiwe University, Awka Nigeria
[1] **Corresponding Author:** oe.nkamnebe@unizik.edu.ng

Abstract
This study investigates the impact of microcredit on income generation among rural women micro-entrepreneurs in South-East Nigeria, with the aim to understand its role in poverty reduction. Despite contributing significantly to the economy, micro-entrepreneurs often face barriers like limited access to financial resources. This study is premised on the Microfinance Policy Framework introduced by the Nigerian government, to enhance financial inclusion. Employing a cross-sectional research design, data were collected from 340 respondents using structured questionnaires and analysed using descriptive statistics, while the t-tests was employed to assess the significant effect of microcredit on income generation. The findings indicate that while microcredit had a positive impact on income generation, the effect is modest. The results highlight significant challenges such as high interest rates, inadequate loan sizes, and poor loan management skills, which impede the full potential of microcredit. The study underscores the need for complementary measures, including reduced interest rates and enhanced business support, to maximise the benefits of microcredit in poverty alleviation. Although microcredit holds promise for enhancing income generation among rural women, its impact is constrained by structural and operational challenges. Addressing these issues is crucial for maximising microcredit's role in poverty reduction and the economic empowerment of rural women micro-entrepreneurs. This research contributes to the existing body of knowledge by providing empirical evidence from South-East Nigeria, reinforcing the argument that microcredit can be a valuable tool for economic empowerment, particularly among low-income populations.

Keywords: Keywords: : Microcredit, microentrepreneurs, poverty reduction, South-East Nigeria.

JEL Codes: D14, G21, H81, I32.

1. Introduction

Poverty and its reduction remain an enduring and pervasive challenge affecting millions across the globe to the extent that the United Nations categorized it as the first Sustainable Development Goal (United Nations, 2024). Despite their significant contributions to the economy through micro-entrepreneurial activities, rural women face considerable challenges, including limited access to education, healthcare, and financial resources (Mukaila, 2022). Microenterprises, as a powerful strategy for economic empowerment and poverty

alleviation, have the potential to be transformative for the lives of rural women. These small-scale businesses not only support households but also play a significant role in community development and financial independence (Ukanwa, 2021). However, the high incidence of poverty hampers their productivity and access to essential services, making the study of microcredit's impact all the more crucial.

The Nigerian government's introduction of the Microfinance Policy Framework in 2005, revised in 2011, was a significant step towards enhancing financial inclusion and providing easier access to microcredit (Central Bank of Nigeria, 2020). Microcredit has shown promise in providing productive capital, starting businesses, managing resources, mitigating economic shocks, and increasing assets and income (Magugui et al., 2014; Islam et al., 2018; Levine, 2021). However, the impact of microcredit on poverty reduction has yielded mixed results, underscoring the need for further research, such as this study in order to fully understand its potential (Awojobi, 2019; Dada, Yusuf, Yusuf, Olusegun, Olatunji & James, 2023). This study aims to examine the impact of microcredit on income generation among rural women microentrepreneurs in South-East Nigeria. By focusing on this region, the study seeks to fill the gap existing in research and provide insights into how microcredit can effectively contribute to poverty reduction and economic empowerment for rural women.

2. Literature Review

This literature review examines the relationship between microcredit and income generation among rural women microentrepreneurs in South-East Nigeria. It explores the existing body of research on microcredit, poverty alleviation, and women's economic empowerment, incorporating Ragnar Nurkse's vicious cycle of poverty theory to provide a theoretical framework.

Microcredit and Women's Economic Empowerment

Microcredit has been recognized as a significant tool for breaking the Vicious Cycle of Poverty by providing the poor with access to financial resources. Microcredit involves small loans provided to individuals who lack collateral and have limited access to traditional banking services. These loans are intended to help start or expand small businesses, thereby increasing income, savings, and investment. Yunus and Yusus (2007), the pioneer of microcredit through the Grameen Bank in Bangladesh, demonstrated that access to credit could enable poor individuals, especially women, to engage in productive economic activities, leading to improved living standards and economic development. Studies have shown that microcredit can positively impact poverty alleviation by enhancing income generation and economic stability. For instance, Karlan and Valdivia (2011) observed that business training combined with microcredit improved business

outcomes and financial well-being among microfinance clients in Peru.

Women, particularly in rural areas, often face significant barriers to accessing financial resources, which hinders their ability to escape poverty. Microcredit has been seen as a tool for women's economic empowerment, enabling them to become active economic agents. According to a study by Pitt, Khandker and Cartwright (2006), access to microcredit positively impacts women's empowerment by increasing their contribution to household income and improving their decision-making power within the family. In the context of Nigeria, several studies have explored the role of microcredit in empowering rural women. Awojobi (2019) highlighted that microcredit schemes in Nigeria have facilitated women's entry into microenterprises, contributing to poverty reduction and economic development. However, the effectiveness of these schemes varies, with some studies indicating limited impact due to factors such as inadequate loan sizes, high interest rates, and poor loan management skills among borrowers (Dada et al., 2023).

Despite the positive impacts of microcredit, several challenges and criticisms persist. Some scholars argue that microcredit can lead to over-indebtedness, with borrowers taking on multiple loans they cannot repay (Bateman, 2010). Additionally, high-interest rates charged by some microfinance institutions (MFIs) can undermine the potential benefits of microcredit, leaving borrowers in a worse financial situation (Sinclair, 2012). In South-East Nigeria, challenges such as inadequate loan sizes, poor loan management skills, and cultural barriers limit the effectiveness of microcredit programs. For instance, studies have found that many rural women lack the necessary financial literacy to manage loans effectively, leading to high default rates and limited business success (Agbaeze & Onwuka, 2014).

Impact of Microcredit on Income Generation

Numerous studies have examined the impact of microcredit on poverty reduction, often using income generation as a primary metric. This review explores the relationship between microcredit and its effectiveness in poverty alleviation through income generation. By identifying trends, gaps, and methodological considerations, this review aims to establish an empirical foundation to support current research on the income-centric outcomes of microcredit interventions.

To begin with, Fasoranti (2010) investigated the influence of microcredit on poverty alleviation among rural dwellers in Akoko North West, Ondo State, Nigeria. The study utilised both primary and secondary data,

collecting primary data through structured questionnaires administered to 120 randomly selected respondents. Variables such as income, savings, consumption expenditures, and asset acquisition were analysed using descriptive statistics. Findings indicated a high incidence of poverty among economically active respondents, with microcredit positively influencing major macroeconomic variables like income, savings, and asset acquisition. Similarly, Ferdoushi, Chamhuri, Nor Aini and Rawshan (2011) examined the impact of microcredit on poverty alleviation among rural women in Panchagar District, Bangladesh. The study compared 200 Grameen Bank members with microcredit and 100 without. Data were analysed using descriptive statistics and SPSS software. Results showed that women with microcredit had significantly lower poverty incidence, intensity, and severity compared to those without credit. Additionally, the study highlighted the positive role of educational attainment and multiple income earners in reducing household poverty. Moreover, Choudhury, Das and Rahman (2017) evaluated the effectiveness of microcredit programmes on household income, expenditure, and savings in Bangladesh. The study surveyed 3000 ASA borrowers using multiple regression analysis. Results demonstrated significant positive impacts on economic indicators, with education playing a crucial role in enhancing these outcomes. The study suggested that microcredit initiatives contribute to poverty reduction and improved living standards.

On the other hand, El-Hadidi (2020) examined the role of Egyptian microfinance on household income through a cross-sectional survey of 780 clients. The analysis revealed that long-term microfinance users experienced higher household income compared to new borrowers, suggesting positive impacts on poverty reduction and women's income, especially in rural areas. Additionally, Yu et al. (2020) studied microcredit policy for poverty alleviation in China, using data from 4198 poor households. The study employed logit and propensity score matching methods, finding that microcredit positively influenced production income. The study recommended ongoing implementation of microcredit policies with supportive measures like capital subsidies and agricultural insurance. Furthermore, Wanigasuriya and Ramanayake (2023) explored microfinance indicators' relationship with income generation in Kurunegala District, Sri Lanka. Using a

survey of 159 microfinance users, the study found positive correlations between microfinance services and income generation, suggesting the need for similar studies in other regions to enhance generalisability.

Similarly, Yin, Chen, Zhou, Chen and Liu (2023) assessed microcredit's impact on income and stability among farmers in Hebei Province, China. The study used OLS and Logit models to analyse data from 458 households, finding significant positive effects on income and income growth stability. The study recommended addressing geographical limitations in future research to improve understanding of microcredit's impact. Lastly, Kabir, Shakil and Rashid (2024), evaluated the psychosocial and economic impacts of microcredit on rural women in Bangladesh. Using data from 200 women, the study found positive economic changes, including increased household income and savings. The study highlighted the potential for joint interventions by government and NGOs to further enhance the well-being of rural women.

The Vicious Cycle of Poverty Theory, Microcredit and Poverty Reduction

Ragnar Nurkse's Vicious Cycle of Poverty theory posits that poverty perpetuates itself in an endless cycle due to various interconnected factors. According to Nurkse (1953), low-income levels lead to low savings, which in turn result in low investment levels, leading to low productivity and, consequently, maintaining low-income levels. This cycle is particularly prevalent in developing countries, where lack of capital, inadequate infrastructure, and limited access to financial services contribute to persistent poverty. Integrating Ragnar Nurkse's Vicious Cycle of Poverty theory with the concept of microcredit provides a comprehensive framework for understanding the potential and limitations of microcredit in poverty alleviation. By providing access to financial resources, microcredit can break the cycle of low savings and low investment, leading to increased productivity and income. However, for microcredit to be effective, it must address the underlying factors that perpetuate poverty, such as inadequate infrastructure, lack of business training, and cultural barriers.

3. **Methodology**

This study employs a cross-sectional research design, facilitating the collection of data at a single point in time to evaluate the immediate impact of microcredit on economic and poverty-related indicators among rural women microentrepreneurs in Southeast Nigeria. The study area includes the states of Anambra, Abia, Enugu, and Imo, chosen for their logistical proximity and cultural

homogeneity. The population under investigation comprises rural women microentrepreneurs aged 18years and above, engaged in sectors such as trading, agriculture, handicrafts, and retail. The sample size determined using Krejcie and Morgan's (1970) formula, is 400 respondents, with stratified random sampling ensuring proportional representation across the states. Data collection involves administering a structured questionnaire through face-to-face interviews, conducted in local languages to ensure clarity. The questionnaire consists of two sections: personal data of respondents and questions addressing the research objectives, with responses measured on a five-point Likert scale. Out of 400 distributed copies of questionnaire, 340 were returned, representing an 85% response rate.

Quantitative data from the questionnaire were coded and analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics summarize the socio-economic characteristics of the respondents, while inferential statistics, was used to test the hypothesis regarding the impact of microcredit on income generation. Cohen's d provides additional analysis to gain deeper practical insights into the effect size. The reliability and validity of the research instrument are ensured through expert judgment, pilot testing, and factor analysis, yielding a Cronbach's alpha of 0.78, indicating acceptable reliability. Ethical considerations include obtaining approval from the relevant institutional review board, informing participants about the study's purpose, and securing written informed consent. Limitations of the study include potential recall bias and challenges in generalizing findings to other regions. By focusing on rural women microentrepreneurs, the study aims to provide context-specific insights and policy recommendations to enhance the effectiveness of microcredit programs in Southeast Nigeria, contributing to poverty alleviation and economic empowerment in rural settings.

The hypothesis is stated as follows:

Ho: Microcredit has no significant impact on the income generation of rural women microentrepreneurs in South-East, Nigeria.

Hi: Microcredit has significant impact on the income generation of rural women microentrepreneurs in South-East, Nigeria.

4. Result Presentation and Discussion

Profile of Respondents

The locations of the 111 respondents, which is equivalent to 32.7% of the population were from Anambra State, 86 of the respondents, representing 25.3% were from Imo State, 70(20.6%) respondents from Abia State and 73(21.5%) of the respondents from Enugu State. The choice of the numbers of respondents was based on the total population of the states.

The summary result of age distribution shows that 27 of the respondents, equivalent to 8% of the total population, fall within the age bracket of 18-25

years, 51 of the respondents, which represent 15% of the total respondents, falls within the age bracket of 26-35 years, 93 of the respondents, equivalent to 27.4% of the sampled population fall within the age bracket of 36-45 years, 119 of the respondents falls within the age bracket of 46-55 representing the highest number of respondents, and it is about 35% of the total population of respondents. Similarly, the remaining 50 respondents, which represent 14.6% of the sampled population, are 56 years old and above. Hence, the findings indicated that the majority of the respondents are still in their energetic stage, as most of them fall within the age bracket of 46-55 years.

The breakdown of the marital status of the respondents shows that 222 of the respondents, equivalent to 73.4% of the sampled population are married, 65 of the respondents, equivalent to 19.1% of the total population are single, 53 of the respondents, equivalent to 23.7% of the sampled population are either divorced, separated or widows. This result clearly shows that most of the rural women micro-entrepreneurs in Abia, Imo, Enugu and Anambra are married. The educational information about the respondents indicates that the respondents have no formal education which represents 6.2% of the total population of respondents. Those that have primary education are about 68 of the respondents which show 20% of the total respondents. Furthermore, 141 of the respondents have secondary education while 110 respondents have tertiary education. From these results, those with secondary education responded mostly to the questionnaire. The objective of this study was to identify the impact of microcredit on income generation among rural women microentrepreneurs in Southeast Nigeria. Five statements are used as indicators of income generation, and the results of the responses of the respondents are presented in Table 1.

Table 1: Microcredit and Income Generation

S/N	Statement	SA %	A %	N %	D %	SD %	Mean	S.D
1	Steady income growth since inception	11.2	3.6	11.8	49.4	24.0	2.21	1.04
2	Assets have increased over time	6.8	11.8	14.5	40.5	26.3	2.32	1.18
3	Increase in bank savings	2.7	8.0	11.2	56.8	21.3	2.14	.93
4	Debt repayment increased	1.8	6.5	13.1	51.3	27.3	2.04	.91
5	Increase in household income	3.0	5.6	10.9	48.2	32.2	1.99	.96
Overall Mean and Standard Deviation							**10.60**	**5.02**

Authors' Computation

The descriptive table of income generation of the respondents as presented in Table 1 shows that larger percentage of the respondents disagreed (49.4%) that their income grows steadily since inception of their businesses, while 24% of the respondents strongly disagreed. Again,11.2% of the respondents strongly agreed to the statement while 3.6% agreed that their income grow steadily since inception. The second statement that "assets have increased overtime" was disagreed by 40.5% of the respondents, meaning that larger proportion of the respondents do not agree that their assets increased overtime. Similarly, 26.3% of the respondents strongly disagreed that assets increased, 14.5% neither agreed nor disagreed, while 11.8% agreed and 6.8% strongly agreed. Going further, 56.8% of the respondents disagreed that there is increase in bank savings, 21.3% strongly disagreed, 11.2% were neutral, that is, neither agreed nor disagreed, 8.0% agreed, while 2.7% strongly agreed. On whether debt repayment increased, 27.3% of the respondents strongly disagreed, 51.3% agreed, 13.1 were neutral, 6.8% respondents agreed, and 1.8% strongly agreed. The statement on the increase in household income was strongly agreed by 3.0% of the respondents while about 5.6% of them agreed. Also, 10.9% were neutral, while a larger percentage of the respondents, which is 48.2%, disagreed that there is an increase in household income. More so, about 32.2% of the respondents strongly disagreed. Judging from the mean value, none of the mean values of income generation indicators is above the acceptable mean of mean of 2.5. The overall mean value of 10.60 is also lower than the acceptable overall mean criterion of 15. Similarly, most of the respondents strongly disagreed and disagreed that microcredit has an impact on income generation based on their responses. It can, therefore, be concluded that most of the respondents do not agree with the statement that microcredit has helped them in income generation.

Testing of Hypothesis

In testing the working hypotheses, which partly satisfies the objectives of this study, the study employs a 0.05 level of significance. In so doing, the study is to reject the null hypothesis if the t-value is significant at the chosen level of significance; otherwise, the null hypothesis will be accepted.

.

	Income generation
Chi-Square	370.122[a]
Df	17
Asymp. Sig.	.000

Source: SPSS

The test statistics results indicate significant chi-square values for income generation among rural women microentrepreneurs in Southeast Nigeria. The chi-square value of 370.122 with 17 degrees of freedom (df) yields a p-value of .000, indicating a highly significant relationship between microcredit and income generation among rural women microentrepreneurs in Southeast Nigeria. Therefore, we reject the null hypothesis (H_0) and conclude that microcredit significantly impacts income generation for this demographic group.

Discussion of Findings

In discussing the objective of this study, it was observed that microcredit had a positive, though small impact on income generation. This was evident from the disagreement and strong disagreement expressed by the respondents. This observation is consistent with the anticipated effect of microcredit, which is to increase income generation, particularly among rural women who have access to microcredit. This finding is in line with the perspectives presented by Fasoranti (2010), Yu et al. (2020), and Yin et al. (2023). This validates the a priori expectations that access to microcredit should help rural women generate more income than when they have no access to microcredit. The positive correlation between microcredit and income generation has been established by several studies, including Fasoranti (2010), Yu et al. (2020), Tauqeer and Huma (2011), and Yin et al. (2023). The present study builds upon this body of research by providing further evidence of the impact of microcredit programs on income levels, particularly among low-income populations. By validating earlier findings, this study contributes to a growing understanding of the role of microcredit in poverty reduction. In addition, the small effect suggests the presence of other challenges that limit the capacity of microcredit to fully contribute to reducing poverty.

The policy implications of microcredit's limited impact on income generation, employment, business expansion, and access to basic services are significant. Rural women are particularly affected by the high interest rates charged on microcredit, which reduces the amount of credit they are able to access. Furthermore, the lack of

infrastructure and access to diverse and trustworthy sources of credit makes it difficult for rural women to secure loans for their businesses, resulting in little progress in their income generation, employment, business expansion, and ability to access basic services. As such, poverty rates among rural women have not been significantly reduced. Addressing these issues is crucial if microcredit is to effectively alleviate poverty among rural women.

5. Conclusion and Recommendation

The primary objective of this study was to assess the impact of microcredit on income generation among rural women micro-entrepreneurs in South-East Nigeria. The findings demonstrate that while microcredit has a positive impact on income generation, the effect is relatively small. This modest increase in income is aligned with the anticipated outcomes of microcredit, which aims to enhance the economic capabilities of rural women who have access to such financial resources. The positive correlation between microcredit and income generation observed in this study corroborates the findings of previous research conducted by Fasoranti (2010), Yu et al. (2020), Tauqeer and Huma (2011), and Yin et al. (2023). Despite the positive impact, the small effect size suggests that other significant challenges are impeding microcredit's full potential in poverty alleviation. As indicated by the respondents, these challenges might include high interest rates, limited loan availability, stringent loan requirements, and a lack of business training or support. Addressing these barriers could enhance the effectiveness of microcredit programs, leading to a more substantial impact on income generation and poverty reduction.

This study contributes to the existing body of knowledge by providing empirical evidence from South-East Nigeria, thereby enriching the understanding of microcredit's role in poverty reduction. The validation of previous findings reinforces the argument that microcredit can be a valuable tool for economic empowerment, particularly among low-income populations. However, for microcredit to be more effective, complementary measures such as reduced interest rates, increased loan accessibility, simplified loan procedures, and enhanced business support and training are essential.

In conclusion, while microcredit demonstrates potential as a means to improve income generation among rural women, its impact is currently limited by various structural and operational challenges. Future

interventions should focus on addressing these challenges to fully harness the benefits of microcredit, thereby contributing more significantly to poverty reduction and economic empowerment of rural women micro-entrepreneurs.

References

Agbaeze, E. K., & Onwuka, I. O. (2014). Impact of micro-credit on poverty alleviation in Nigeria: The case of Enugu East Local Council. *European Centre for Research Training and Development UK*, 2(1), 27-51. Retrieved from http://www.ea-journals.org

Awojobi, O. N. (2019). Microcredit as a strategy for poverty reduction in Nigeria: A systematic review of literature. *Global Journal of Social Sciences, 18*, 53-64.

Bateman, M., & Chang, H. (2012). *Microfinance and the illusion of development: From hubris to nemesis in thirty years*. Zed Books.

Central Bank of Nigeria. (2020). Guidelines for the regulation and supervision of microfinance banks in Nigeria. Retrieved May 5, 2024, from https://www.cbn.gov.ng/out/2020/fprd/mfb%20regulation%20draft%20merged.pdf

Choudhury, A. H., Das, A., & Rahman, A. (2017). The effectiveness of micro-credit programmes focusing on household income, expenditure, and savings: Evidence from Bangladesh. *Journal of Competitiveness*, *9*(2), 34-44.

Dada, O. O., Yusuf, S. A., Yusuf, W. A., Olusegun, O. O., Olatunji, O. O., & James, F. I. (2023). Effect of microcredit on welfare of rural households in Oyo State, Nigeria. *Journal of Global Economics, Management and Business Research, 15*(2), 37-48.

El Hadidi, H. (2020). The impact of microfinance on poverty reduction in Egypt: An empirical study. *Arab Journal of Management*, *40*(2), 303-310.

Fasoranti, M. M. (2010). The influence of micro-credit on poverty alleviation among rural dwellers: A case study of Akoko North West Local Government Area of Ondo State.

African Journal of Business Management, 4(8), 1439.

Ferdoushi, A., Chamhuri, S., Nor Aini, H., & Rawshan, A. (2011). Impact of microcredit on poverty alleviation among rural women: A case study of Panchagarh District in Bangladesh. *African Journal of Business Management, 5*(16), 7111-7119. https://doi.org/10.5897/AJBM10.1319

Islam, N., Hossain, T., & Afrin, S. (2018). Impact of micro-credit to reduce poverty: A case study of Mymensingh. *Research Gate Publication*, 1-17.

Kabir, M. R., Shakil, S. R., & Rashid, M. (2024). Does rural women's involvement with one more microcredit organization change any psycho-social and economic conditions in their lives? A study on Northern Bangladesh. *SN Social Sciences, 4*(1), 10.

Karlan, D., & Valdivia, M. (2011). Teaching entrepreneurship: Impact of business training on microfinance clients and institutions. *Review of Economics and Statistics, 93*(2), 510-527.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*, 607-610.

Levine, M. R. (2021). Finance, growth, and inequality. *International Monetary Fund*. Retrieved May 6, 2024, from file:///C:/Users/nkamn/Downloads/001-article-A001-en.pdf

Magnani, R., Sabin, K., Saidel, T., & Heckathorn, D. (2005). Review of sampling hard-to-reach and hidden populations for HIV surveillance. *AIDS, 19*, S67-S72.

Mukaila, R., Falola, A., Akanbi, S. O., Aboaba, K. O., & Obetta, A. E. (2022). Drivers of poverty among rural women in Nigeria: Implications for poverty alleviation and rural development. *Journal of Rural and Community Development, 17*(1), 32-48.

Nurske, R. (1953). *Problems of capital formation in underdeveloped countries*. Oxford University Press.

Pitt, M. M., Khandker, S. R., & Cartwright, J. (2006). Empowering women with microfinance: Evidence from Bangladesh. *Economic Development and Cultural Change, 54*(4), 791-831.

Sinclair, H. (2012). *Confessions of a microfinance heretic: How microlending lost its way and betrayed the poor*. Berrett-Koehler Publishers.

Ukanwa, I. (2021). An investigation of poor women's micropreneurship and their experiences of microfinance in rural south-east Nigeria. *Robert Gordon University, PhD thesis*. Hosted on OpenAIR. https://doi.org/10.48526/rgu-wt-1447375

United Nations. (2024). The 17 goals. Retrieved from https://sdgs.un.org/goals

Wanigasuriya, W. M. T. J., & Ramanayake, R. M. A. (2023). Impact of microfinance on income generation in Kurunegala District. *Journal of Accountancy and Finance, 10*(1). Retrieved from https://doi.org/10.57075/jaf1012303

Yin, S., Chen, X., Zhou, X., Chen, C., & Liu, J. (2023). Effect of micro-credit for poverty alleviation on income growth and poverty alleviation: Empirical evidence from rural areas in Hebei, China. *Agriculture, 13*(5), 1018.

Yu, J., Han, X., Chen, B., & Ren, J. (2020). Estimating the impact of poverty alleviation microcredit on the income of poor households using the propensity score matching method: Evidence from China. *Agriculture, 10*(7), 293.

Yunus, M., & Yusus, A. J. M. (2007). *Banker to the poor*. Penguin Books India.