

Micro-Credit Schemes and Socio-Economic Empowerment: Assessing the Impact of NRSP in District Kotli, AJK

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<https://doi.org/10.62345/jads.2025.14.1.62>

Abstract

This study examines the impact of micro-credit through loans on poverty reduction among women entrepreneurs in Azad Jammu and Kashmir (AJ&K). AJ&K faces challenges in the uplift of its economy through a decline in poverty. To resolve acute micro-finance, organizations provide micro-finance to the public in third-world countries. The National Rural Support Program (NRSP), a public sector micro-credit program of the government that operates in four provinces of Pakistan, including Azad Jammu and Kashmir, plays a vital role in distributing microfinance, especially to the female community. This study explored the multidimensional impact of micro-credit on the socioeconomic condition of the targeted study area (AJK). Primary data was collected through a structured survey questionnaire for empirical analysis, and a total of 400 females were selected by using a purposive sampling technique. Different quantitative and qualitative analysis techniques were used to interpret data and results. About 82% of respondents reported taking credit from NRSP twice, 17.3% once, and 1% thrice. NRSP's micro-credit scheme has significantly contributed to the socio-economic improvement of the female community in District Kotli. Positive results are observed in various dimensions, including income generation, financial inclusion, women's empowerment, and overall well-being. The study concludes that NRSP micro-credit helps increase the quality of the Ale community living standards in the district Kotli AJ&K.

Keywords: Socio-economic Conditions, NRSP, Micro-credit, Empowerment, Sustainability.

Introduction

Microfinance programs like the National Rural Support Program (NRSP) are pivotal in lifting impoverished individuals, particularly women, out of poverty by providing them with financial resources to develop self-employment opportunities (Roodman & Morduch, 2014). The effectiveness of these programs is highlighted by their ability to foster economic participation and enhance living standards. Studies and reports, such as those by the United Nations (1995) and various scholars like Latifee (2003), Modi et al. (2014), and Kapila et al (2016), underscore that microcredit not only facilitates self-employment and income generation but also promotes broader economic and political engagement. By scrutinizing financial practices and maintaining

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transparency, microfinance institutions ensure the efficient use of funds, amplifying their positive impact on poverty alleviation (Copestake et al. 2001).

District Kotli, despite being a developing area, copes with insufficient facilities, obstructing women's income activities. The limited opportunities intensify the issue, requiring research to evaluate the impact of the NRSP micro-credit scheme in this unique context. This innovative study in the region aims to explore how NRSP enterprises directly outline the socioeconomic development of women in Kotli. By addressing the scarcity of facilities, the research contributes valuable insights to inform the organization about the scheme's efficiency in promoting women's socioeconomic development.

This study embarks on a journey to uncover the transformative power of the NRSP micro-credit scheme on the socioeconomic conditions of women in District Kotli, Azad Jammu and Kashmir. At its core, the research aims to evaluate how access to micro-credit empowers women, enabling them to break free from financial constraints and societal limitations. By describing the demographic profile of the women benefiting from the scheme, the study seeks to provide a deeper understanding of their backgrounds and circumstances. Furthermore, it delves into the economic implications of the program, analyzing its impact on income levels, savings, and entrepreneurial opportunities. Beyond economics, the study also explores the broader social impact, examining how the scheme influences women's decision-making authority, spending patterns, living conditions, and overall quality of life. Through this comprehensive evaluation, the research aspires to shed light on the role of micro-credit in fostering gender equality and socioeconomic development, offering valuable insights for policymakers and stakeholders alike.

Guided by these objectives, the study seeks to answer a series of compelling questions at the heart of this exploration. What are the demographic characteristics of the women who benefit from the NRSP micro-credit scheme, and how do their unique backgrounds shape their experiences? How does access to micro-credit transform their economic realities—does it elevate their income levels, enhance their savings, or open doors to new business opportunities? Beyond the economic sphere, the research also aims to uncover the social ripple effects of the scheme: How does it empower women within their households and communities? Does it amplify their decision-making authority, improve their living conditions, and elevate their overall quality of life? These questions not only guide the research but also highlight the profound potential of micro-credit to reshape lives and communities. The current study seeks to answer these questions, offering a nuanced understanding of the scheme's impact and significance in driving socioeconomic change for women in District Kotli.

The significance of this study lies in its pioneering nature, which is the first research attempt examining the National Rural Support Program (NRSP) within the confines of Kotli District, Azad Jammu and Kashmir. This research fills a critical knowledge gap and serves as a foundation for future investigations in the region. Moreover, the findings of this study hold the potential to inform and shape policymaking processes, thereby enhancing the effectiveness and relevance of NRSP's future endeavors in District Kotli. Additionally, through a comprehensive analysis of existing studies in sustainable development, this research aims to identify crucial gaps and avenues for further exploration, contributing to the evolution of sustainable development discourse (McKernan, 2002).

Furthermore, this study examines the intricate dynamics of community contributions within developmental programs, shedding light on their roles and significance (Rahman, 2009). By synthesizing empirical evidence, this research provides valuable insights into the hypothesized impacts of microcredit interventions, particularly on women's socioeconomic status and income

levels. Establishing a gender-disaggregated database is a cornerstone for future research initiatives, facilitating more nuanced analyses and targeted interventions (Li et al., 2011). Ultimately, the culmination of these efforts not only advances our understanding of the multifaceted interactions between microcredit, women's empowerment, and community development but also paves the way for informed decision-making processes aimed at improving the lives of women in Kotli District, aligning with the broader objectives of sustainable development goals (SDGs). This distribution aligns with findings by Khurshid et al. (2016), suggesting a consistent theme of women actively participating in household responsibilities and income-generating activities. The findings emphasize the diverse economic activities supported by micro-credit, ranging from traditional livelihoods to entrepreneurial ventures (Crépon et al., 2011). The combination of Tehulu (2013) insights into household income sources and the current study's focus on specific loan utilization provides a comprehensive understanding of the multifaceted impact of micro-credit on diverse economic activities (Augsburg et al., 2015).

The consistent improvement in income levels across both studies supports the conclusion that micro-credit positively influences the economic conditions of the beneficiaries. Additionally, findings from Syed Hussain Shah's 2020 study, where the paired samples t-test showed a significant increase in mean income after linking to the Microfinance Credit Program (MCP), further bolsters the evidence of the positive impact of micro-credit on economic well-being (Basto, Manuel Pereira, et al. 2020). The results collectively underscore the effectiveness of micro-credit in contributing to enhanced income (Crépon et al., 2015). Wright (1999), where 70% of participants in a study conducted during the same year reported an increase in savings. Despite variations in specific percentages, the consistent theme across both studies underscores the positive impact of microcredit on fostering improved saving habits within a relatively short time frame (Chowdhury et al., 2005).

Literature Review

In modern development theory, financial services play a crucial role in alleviating poverty and enhancing the social well-being of individuals. This connection highlights the potential impact of microcredit on improving the socioeconomic condition of households, emphasizing their role in fostering economic well-being and reducing poverty levels. Nurkse (1967, 1971) posits the vicious circle of poverty theory, suggesting that poverty self-perpetuates through mutually reinforcing cycles on both the demand and supply sides. On the supply side, a low level of real income leads to limited saving ability, driven by low productivity and a lack of capital. Conversely, on the demand side, the incentive to invest is hampered by insufficient purchasing capacity, low real income, and low productivity. Microcredit is proposed as a tool to disrupt this cycle, fostering the initiation or expansion of enterprises. By providing credit for income-generating activities, microcredit can stimulate job creation, alleviate unemployment, and reduce poverty (Osmani, 2007). The positive impact on socioeconomic conditions arises from microcredit facilitating economic activities and promoting job growth. Microcredit institutions serve to broaden the array of choices accessible to women thereby facilitating better access to financial opportunities. This connection between microcredit and expanded economic opportunities directly influences the socio-economic condition of women. By providing financial resources and opportunities for income generation, microcredit becomes a facilitator in the household policymaking process.

The global impact of microfinance institutions has been widely studied, revealing varied outcomes. For instance, in India, Shankar (2013) found that microfinance institutions have an irregular presence, leaving many regions underserved by traditional banking. In China, Chen et al. (2014)

observed that the NRSP approach impacts employment through income-driven effects due to the absence of means-testing and exit conditions from the labor force. Lensink et al. (2018) highlighted the benefits of integrating financial and non-financial services, noting improved loan quality and expanded outreach depth. Xitian (2013) emphasized the role of micro-credit in the growth of small and medium enterprises (SMEs) in Taizhou, China, where firm-specific attributes influence accessibility. Saad et al. (2018) identified key indicators for the financial sustainability and broader outreach of microfinance institutions, yet noted that existing research rarely combines these indicators for comprehensive evaluations. Lastly, a review from 2015 spanning from 1997 to 2011 indicated diverse outcomes regarding global microfinance impacts and failed to establish a definitive link between sustainability and outreach. However, it confirmed that microfinance institutions effectively serve the lower segments of society often overlooked by conventional financial institutions (Develtere & Huybrechts, 2005).

The efficiency and impact of microfinance institutions (MFIs) in developing countries have been extensively studied, with varied findings across different regions. Hassan and Sanchez (2009) found that formal micro-credit exhibits superior technical efficiency compared to non-formal organizations, with South Asian MFIs demonstrating higher efficiency than those in Latin America, the Middle East, and North Africa. In Bangladesh, Chowdhury et al. (2021) observed that micro-credit correlates with reduced poverty levels, with the most significant impact occurring within six years. Terano et al. (2015) highlighted positive perceptions of microcredit effectiveness in Malaysia, increasing household income and savings. Ahiabor (2013) noted that Ethiopian clients of MFIs experienced enhanced incomes and empowerment, establishing businesses and considering political positions. In rural Nigeria, Ediom-Ubong E. Nelson found that micro-credit schemes improved income and living standards, reducing poverty (Kapila, 2016). McKernan (2002) emphasized the importance of loan-assisted firms employing low-income individuals to reduce poverty. Basto (2020) identified key factors influencing the financial sustainability of Ethiopian MFIs, including outreach breadth and depth and cost per borrower. Olu et al., (2009) linked micro-credit to GDP growth in Nigeria, while Chowdhury et al. (2021) advocated for accelerated micro-credit programs to drive socioeconomic development in Bangladesh. Ahiabor (2013) found a positive relationship between microcredit schemes and SME development in Ghana. However, Sudan K. Oli (2018) observed a negative relationship between inflation and economic growth in Nepal. Finally, Rai and Rai (2012) highlighted key determinants of financial sustainability for MFIs in India and Bangladesh, such as capital ratios and operating loan portfolios.

The effectiveness and impact of microfinance institutions (MFIs) across different regions have been the subject of extensive research. Terano et al. (2015) highlighted positive outcomes from microcredit schemes in Malaysia, showing that participants effectively managed their loans, leading to increased income and improved coping strategies. Kossinets and Watts (2006) found that microfinance services significantly improved the productivity and sustainability of small and medium enterprises in rural Ghana. Khan et al. (2017) indicated that microcredit programs positively impact children's nutrition and school enrollment rates. In East Africa, Tehulu (2013) noted that management inefficiency and portfolio risk negatively impact the financial sustainability of MFIs. Wright (1999) emphasized that microcredit schemes effectively alleviate poverty. Amelie Brune (2009) observed that microfinance positively impacts development in low-income countries. Rao et al. (2013) concluded that sustainable MFIs must manage loan defaults, mobilize savings, and reduce operational costs. Idrees (2007) found that NRSP training programs enhanced skills and satisfaction among the farming community in Rawalpindi. Hafiz Saqib

Mehmood Najmi (2015) demonstrated a positive correlation between microcredit and improved socioeconomic conditions. Shankar (2013) underscored micro-credit's positive influence on agricultural development in Balochistan. Markus Frölich et al. (2014) found that micro-insurance reduces child labor and hospital costs in Pakistan. Malik and Nagmaan (2005) concluded that microcredit schemes empower women and reduce poverty. Fersi and Boujelbène (2014) highlighted the viability of Islamic microfinance institutions in Pakistan, urging societal and governmental support. Zaidi (2017) demonstrated that Akhuwat's lending approach fosters mutual support and social improvement. Roodman and Morduch (2015) advocated adopting Islamic micro-financing models in Malaysia to promote overall well-being. Muhammad Naveed Aslam (2022) identified funding arrangements as a key challenge for Islamic MFIs, suggesting solutions like deposits.

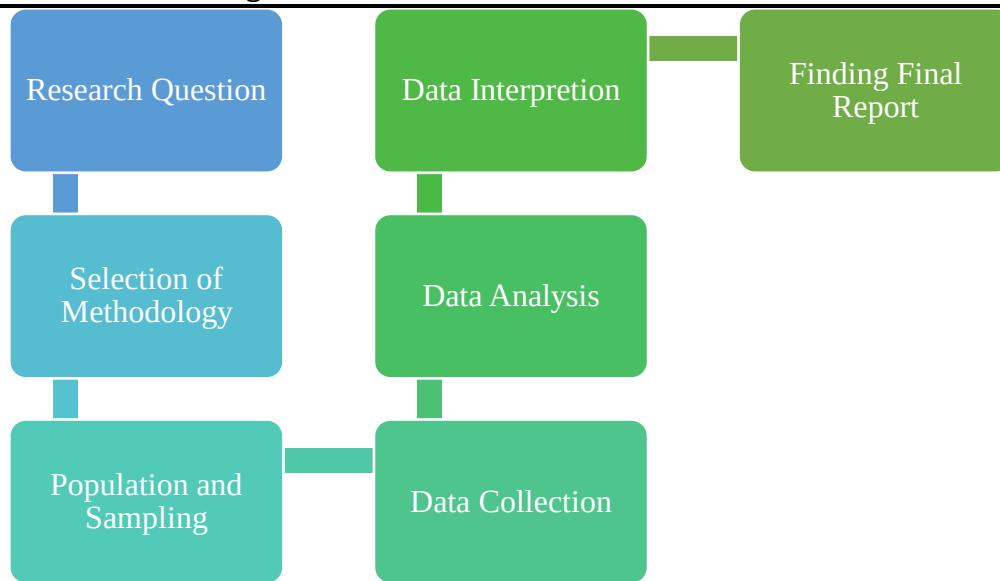
Research Methodology

Research Design

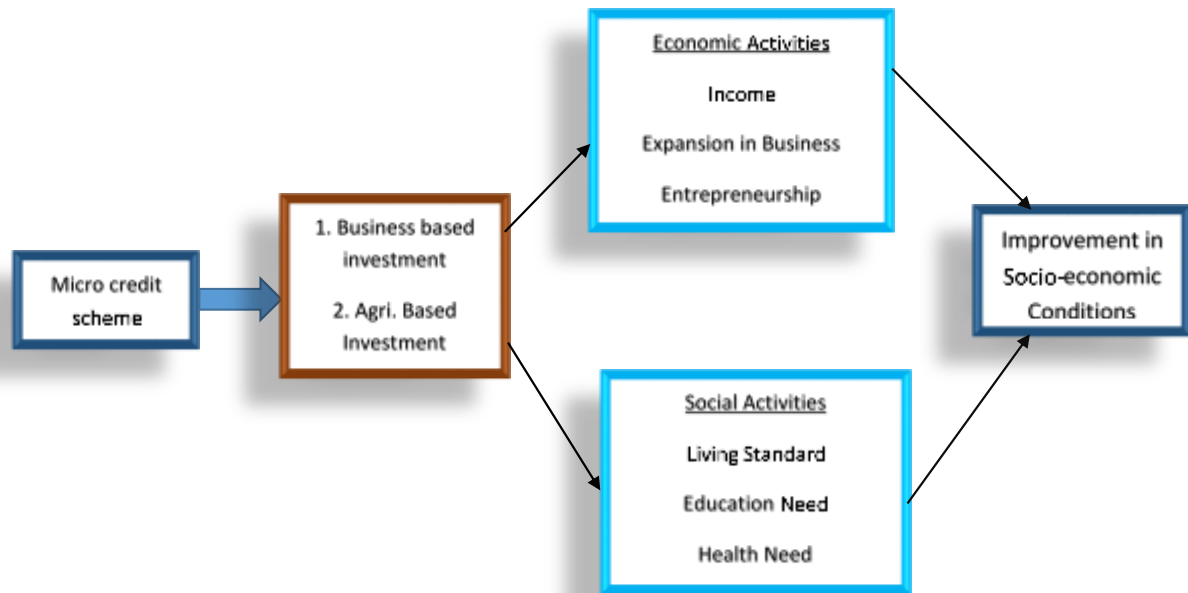
Research design provides a logical plan to integrate research components, ensuring clarity and structure. As Myers (2013) states, it helps address the research problem effectively, guiding data collection, analysis, and interpretation. This study examines the impact of the micro-credit scheme on beneficiaries' socioeconomic conditions, enabling business and agricultural investments that enhance income, entrepreneurship, and financial stability. Social benefits include improved living standards, education, and healthcare, ultimately fostering financial independence and a better quality of life.

Over three months, data collection began after obtaining permission from the District Manager, NRSP. Social organizers assisted in fieldwork across district Kotli AJK. A Five-point Likert questionnaire was used, translated into Urdu for clarity. Purposive sampling was chosen for its ability to yield specific information, with 400 samples selected using the Cochran formula, 80 from each branch in Kotli City, Khoirata, Nakiyal, Sehnsa, and Chorai.

A survey method was employed due to the sample size and scope (Wu 2018). The study follows a quantitative approach, using specific-to-general analysis to explore research questions and validate hypotheses (Kairuz, 2007). It assesses NRSP's Micro-credit scheme's impact on the socioeconomic conditions of the female community.

Figure 1: Research Design**Conceptual Framework**

The conceptual framework demonstrates how the micro-credit scheme contributes to the improvement of socio-economic conditions by fostering both economic and social activities. The scheme provides financial support, enabling individuals to invest in business-based and agriculture-based ventures. These investments lead to various economic activities, including increased income, business expansion, and entrepreneurship, ultimately enhancing financial stability. Simultaneously, the scheme influences social activities by improving living standards, addressing educational needs, and fulfilling healthcare requirements. The combined effects of economic and social advancements result in overall socio-economic improvement, empowering individuals and communities through financial independence and an enhanced quality of life.

Figure 2: Conceptual Framework

Empirical Model

$$SEC_i = \beta_0 + \beta_1 Microcredit_i + \beta_2 age_i + \beta_3 Gender_i + \beta_4 MS + \beta_5 Education_i + \beta_6 Occupation_i + \beta_7 Income_i + \varepsilon_i$$

Where SEC_i is the socioeconomic status of individual. $Microcredit_i$ represents the micro-credit financing along with other variables including age, marital status, education, occupation and income of the individuals. ε_i is the error terms. $\beta_1, \beta_2, \dots, \beta_7$ are the coefficients representing the impact of each independent variable on SEC.

Dependent Variable Measurement

Socioeconomic Condition (SEC), refers the integrated impact of social and economic factors determining the well-being and status of individuals or communities (Oishi and Kesebir 2012). This study further divides SEC into two key components empowerment (EMP) and sustainability (S).

Socioeconomic Conditions (SEC) = EMP + S

The equation expresses this relationship as $SEC = EMP + S$, where EMP is measured through specific indicators denoted as EMP1 to EMP5, and Sustainability is captured through indicators S1 to S6. To analyze and measure the dependent variable, the study utilizes an index in SPSS, combining the scores obtained from the indicators of Empowerment and Sustainability. Specifically, the Empowerment index (EMP) is calculated by summing the scores from EMP1 to EMP5, while the Sustainability index (S) is derived by adding the scores from S1 to S6. The resultant SEC index is then obtained by combining the Empowerment and Sustainability indices. This analytical approach allows for a comprehensive evaluation of how the integrated impact of Empowerment and Sustainability contributes to the overall Socioeconomic Conditions, providing insights into the well-being and status of the individuals or communities under study.

Empowerment refers to the measure of individuals' or communities' enhanced capacity and control over their socio-economic circumstances, as assessed through specific indicators in the research, such as power of decision making, independence in mobility, social and political awareness. Sustainability, in this context, involves ensuring that the benefits of micro-credit endure over time, contributing to ongoing economic and social well-being. Key indicators, abbreviated as S1 to S6, include saving rates, access.

Independent Variables Measurement

The micro-credit scheme of NRSP (National Rural Support Program) is a financial initiative aimed at providing accessible and affordable credit to individuals in rural areas. The independent variable under examination is the Microcredit Scheme (MCS), comprising various facets denoted as MCS1 through MCS6. These components encompass critical elements of microcredit programs, such as the size of the loan (MCS1), the interest rate applied (MCS2), repayment frequency (MCS3), accessibility (MCS4), the existence of purpose-specific credit programs (MCS5), and community engagement initiatives (MCS6) (Mohsin, Abbas et al. 2019). Moreover, the study incorporates several other variables to comprehensively analyze the dynamics. These include individual characteristics such as AGE (measured in years), Marital Status (MS), Education Level (ED), Occupational Distribution, and the Income Group to which the individuals belong. These variables collectively form the framework for exploring the multifaceted relationship between the Microcredit Scheme and various socio-economic characteristics of the individuals involved in the study.

Population & Sample Size

The National Rural Support Program (NRSP) operates in the Kotli district through four key branches: Khuiratta, Charhoi, Nakiyal, and Sehnsa. With a population of 12,000 individuals in this area, the study focused on a sample size of 400 participants selected from these NRSP branches in Kotli, Azad Jammu and Kashmir (AJK). The research spanned across the four branches, targeting individuals who predominantly shared similar characteristics, such as a rural background, limited education, and diverse occupations. The majority of the population in this region faced challenging economic conditions, making the study's focus on micro-credit schemes particularly relevant. To ensure the sample was representative and findings could be generalized to the broader population, a purposive sampling technique was employed. According to Gay (2010), as the population size increases, the required sample size decreases, which guided the selection process. Given the constraints of time and budget, a total of 400 samples were chosen, with 80 participants selected from each of the five branches: Kotli city, Khuiratta, Nakiyal, Sehnsa, and Charhoi. This approach ensured a balanced representation across the region, providing a solid foundation for the study's insights into the impact of the NRSP micro-credit scheme.

Pre-Testing and Validity of the Questionnaire

Pre testing is a process used to assess the reliability and validity of the data collection tool in alignment with the research objectives. This process involves testing the instrument on a smaller item of the sample before conducting field work as well as data collection (Willis, 2016). By conducting pretesting, the accuracy and effectiveness of the data collection instrument are evaluated to ensure that it accurately measures the research objectives. The questionnaire was administered on 30 beneficiaries of NRSP for pilot testing. In order to validate items, it was requested to the panel of experts to refine the items. This panel was consisted of three teachers of

Economics. For determining the reliability of these instruments. The importance of validity and reliability in the study cannot be excessive, as they address whether accurate techniques are being adhered to in order to obtain accurate answers to specific questions within the research study. Validity is concerned with the scope of a measuring instrument accurately assessing its intended construct while minimizing the impact of unintended factors (Bryman & Bell, 2015).

In this study, validity was established through the incorporation of various sources of evidence. In the preliminary testing phase, general consultations were conducted with the beneficiaries to ensure the stability and appropriateness of the study in obtaining information aligned with the research objectives (Parasteh, 2020). Prior to incorporating the content into the survey, minor adjustments were made after consulting with the supervisor. The researcher reviewed an extensive number of literatures related to the study matter to develop a validated questionnaire. Additionally, adjustments and improvements to the survey arrangements were made based on the information gathered during the initial testing phase, which included aspects such as loan acquisition times, utilization of credit, and the methods employed in production and output. The district manager of NRSP also provided assistance in modifying the questionnaire, and these suggestions were integrated into determining the final questionnaire (Drennan, 2003).

Results and Discussion

Pre-estimation Test

Reliability Analysis

Analysis of measurement reliability is essential for ensuring consistent outcomes. Utilizing statistical approaches, such as Cronbach's alpha, proves instrumental in identifying and justifying data biases (Mohajan, 2017). Cronbach's alpha, widely allowed for evaluating measurement reliability, is particularly valuable for variables measured across multiple scales. The calculated Cronbach Alpha for the entire sampling frame is .811, greater the recommended minimum criterion of 0.7 by Owais Shafique et al. (2020). This elevated Cronbach Alpha value indicates extremely high reliability for the 31 elements assessed in the questionnaire.

Data Normality Analysis

The samples for normality involve examining skewness and kurtosis. Owais Shafique et al. (2020), data is considered normally distributed if skewness and kurtosis fall within ± 1.0 and ± 3.00 , respectively. These components are critical in conducting a normality test. Fatih Orcan (2020) emphasizes that when appraising distribution shape, considering skewness and kurtosis is vital. A zero value indicates ordinary dispersion, while positive values imply positive skewness and greater dispersion than normal. Conversely, negative values suggest negative skewness, indicating data concentration towards the right tail. To fulfill multivariate model requirements, absolute skewness and kurtosis values should exceed 1.

Inferential Analysis

This analysis serves as a primary tool for testing theories, involving research to explore the relationship between dependent and independent variables (Parasteh Ghombavani, Haghighi et al. 2020). Its purpose is to examine the influences and effects resulting from manipulating the independent variable(s) on the dependent variable(s), providing researchers with the means to inspect and certify theoretical propositions. In inferential analysis Pearson correlation, multicollinearity and linear regression techniques are usually used (Sartor, 2008).

Multicollinearity Detection

Multicollinearity in regression analysis occurs when two or more independent variables exhibit a strong correlation (Alin, 2010). To assess Multicollinearity, used VIF. An acceptance value approaching 1 signifies less Multicollinearity among variables, whereas a value closely 0 indicates significant Multicollinearity. Consequently, the analysis revealed that independent variables remained not affected by multicollinearity (Daoud, 2017). To make sure that the variables are free from Multicollinearity the current study has tested for Multicollinearity by using two methods, by Pearson correlational analysis and by Variance Inflation Factor (VIF).

Pearson Correlation

Pearson correlation is a statistical measure that quantifies the strength and direction of a linear relationship between two continuous variables (Sedgwick, 2012). It produces a correlation coefficient, often denoted as "r," which ranges from -1 to +1. A positive "r" indicates a positive correlation, meaning as one variable increases, the other tends to increase as well. Conversely, a negative "r" signifies a negative correlation, suggesting that as one variable increases, the other tends to decrease. A value of 0 suggests no linear correlation. The significance level, often represented by the p-value, helps determine whether the observed correlation is statistically significant. In the context of socioeconomic variables measured using an index of empowerment and sustainability, along with microcredit as a potential independent variable, Pearson correlation could be employed to assess the strength and direction of the linear relationships between these variables (Cohen, Huang et al. 2009). For instance, one might use Pearson correlation to examine how the level of microcredit is correlated with the index of empowerment and sustainability. A positive correlation might suggest that as microcredit increases, there is a tendency for empowerment and sustainability indices to increase as well, and vice versa. The significance level would help determine the statistical reliability of these observed correlations (Liu, 2017).

Model Estimation

The empirical model employed in this analysis aimed to examine the statistical significance of each independent variable on the observed variable (Kossinets and Watts 2006). The purpose of the empirical model used in this study was to evaluate the statistical importance of micro-credit scheme on the women empowerment. To check whether the average value of the same measurement made under two different conditions have a significant difference a sample t test applied. The analysis adheres to the fundamental assumptions of linear regression. Firstly, the relationships between the variables are confirmed to be linear, ensuring the appropriateness of the model for the data. Secondly, the independence assumption is met, indicating that the error terms are free from any systematic patterns or correlations. Thirdly, homoscedasticity is upheld, signifying that the variance of the error terms remains constant across all observations. Additionally, normality is observed in the distribution of the error terms, as evidenced by appropriate statistical tests and visual inspection. Lastly, the absence of perfect multicollinearity is verified, ensuring that the independent variables are not overly correlated (Van Seijen, Van Hasselt et al. 2009). Together, these findings validate the robustness and reliability of the linear regression model applied to the dataset.

Ordinary least square (OLS) regression model is a statistical tool used to investigate the relationship between a dependent and independent variables (Zdaniuk, 2024). In this research study, the significance was set at $p < 0.05$ for testing, representing statistical significance level was

achieved if p-value was below this level. The ANOVA test is used to conclude the overall implication of the regression model. The results of ANOVA are presented in table 1.

Table 1: ANOVA Table

Model	Sum of Square (SS)	Df	Mean Square	F	Sig.
Regression	25.817	1	25.817	118.816	.000
Residual (RSS)	86.48	398	0.217		
Total	112.297	399			

This table presents the results of an ANOVA (Analysis of Variance) test for a regression model, which evaluates how well the independent variable explains the variation in the dependent variable. The Sum of Squares (SS) column represents the amount of variation in the dependent variable. The regression sum of squares (25.817) indicates the portion of the variance explained by the model, while the residual sum of squares (86.48) represents the unexplained variance. Together, they sum up to the total sum of squares (112.297), which accounts for all the variation in the dataset.

The degrees of freedom (df) specify the number of independent values available for estimating parameters. For regression, the degree of freedom is 1, meaning one predictor variable is used. The residual degree of freedom is 398, calculated as the total sample size minus the number of predictors and one additional degree of freedom. The total degree of freedom is 399, representing the entire dataset.

The Mean Square (MS) is obtained by dividing the sum of squares by the respective degrees of freedom. The regression mean square (25.817) is significantly higher than the residual mean square (0.217), indicating that a substantial portion of the variance is explained by the model. The F-statistic (118.816) is computed as the ratio of the regression mean square to the residual mean square, testing the overall significance of the regression model. The associated p-value (0.000) is extremely low, suggesting strong statistical significance. This means that the independent variable has a significant impact on the dependent variable, and the likelihood of this result occurring by chance is virtually zero. However, the residual sum of squares still indicates unexplained variance, suggesting that additional factors may influence the dependent variable.

The regression results presented in the following table indicate that the micro-credit scheme has a significant positive impact on an individual's socioeconomic condition. The coefficient values suggest that as participation in the micro-credit scheme increases, an individual's socioeconomic condition improves, with strong statistical significance.

Table 1: Results of Regression Analysis

Variable	Unstandardized Coefficients		standardized Coefficients	t-value	Sig.
	B	St. Error	Beta		
(Constant)	1.016	.320		3.176	.002
Microcredit	.651	.068	.522	9.553	.000
Education	0.235	0.045	0.312	5.222	0.000
Occupational	0.187	0.072	0.198	2.597	0.010
Marital status	0.129	0.055	0.142	2.345	0.020
Age	0.097	0.058	0.118	1.672	0.095
Income	0.159	0.065	0.175	2.446	0.015

The table 2 provides detailed regression coefficients, including unstandardized and standardized coefficients, t-values, and significance levels. The results indicate that microcredit has the most significant influence, with an unstandardized coefficient of 0.651 and a standardized coefficient of 0.522. This suggests that greater access to microcredit leads to a notable improvement in socio-economic conditions. The strong t-value (9.553) and highly significant p-value (0.000) further confirm its crucial role. Similarly, education is another key determinant, with a coefficient of 0.235 and a standardized effect of 0.312, making it the second most influential factor. Its p-value (0.000) highlights the strong statistical significance, emphasizing the importance of education in enhancing socio-economic status. Occupational status also plays a meaningful role, with a coefficient of 0.187 and a standardized coefficient of 0.198. The t-value (2.597) and p-value (0.010) indicate a significant positive relationship, suggesting that individuals in better occupations tend to experience improved socio-economic conditions. Marital status, with a coefficient of 0.129 and a standardized impact of 0.142, also contributes to socio-economic status, though its effect is relatively smaller. However, its significance level ($p = 0.020$) confirms that marital status has a notable impact.

On the other hand, age has a coefficient of 0.097 with a standardized coefficient of 0.118. Despite showing a positive relationship, its p-value (0.095) suggests that it is not statistically significant at the 5% level, indicating that age alone may not strongly influence socio-economic status. Lastly, income demonstrates a moderate effect, with a coefficient of 0.159 and a standardized coefficient of 0.175. The p-value (0.015) confirms its significance, showing that higher income levels contribute to better socio-economic conditions.

The findings highlight that microcredit, education, and income are the most significant factors affecting socio-economic status, followed by occupation and marital status. While age shows a positive association, its effect is not statistically significant in this model. These results suggest that policies aimed at improving access to microcredit, enhancing education, and increasing income-generating opportunities could significantly uplift an individual's socio-economic status.

Diagnostic Tests

To ensure the reliability and validity of the regression model, several diagnostic tests were conducted. These tests assess key statistical properties, including the strength of relationships, model significance, data reliability, and the presence of autocorrelation. The R-value measures the correlation between variables, while the F-statistic and F-change evaluate the overall significance of the model. Cronbach's Alpha tests the internal consistency of the data collection instrument, ensuring reliability. Lastly, the Durbin-Watson statistic checks for autocorrelation in residuals, confirming the model's appropriateness for analysis.

Table 3: Results of Diagnostic Tests

Diagnostic Test	Values
R	0.479
F& F change	118.816
Corn Bach Alpha	0.769
Durbin-Watson	2

The table 3 indicates R (Pearson Correlation coefficient) is strong positive linear relationship between dependent and independent variables. The F-statistic value shows model fitness is statistically significant. The value of Cronbach's Alpha (0.769) recommends a rationally internal

consistency is very high among the measuring item as well as representative they are reliable and correlated in determining intended construct. Bell (2015) indicates that perceptions of validity and consistency not ever overemphasized in the study procedure as they reaction the query of whether correct techniques are existence to find out answers to definite questions in the research. Moreover, the Durban-waste (2) presents that there is insignificant autocorrelation in the regression analysis.

Conclusion and Recommendations

The study examined the impact of the NRSP micro-credit scheme on the socio-economic conditions of women in District Kotli, Azad Jammu and Kashmir. Despite being a developing region, Kotli faced inadequate facilities and limited income opportunities, which hindered women's financial independence and social empowerment. The NRSP micro-credit scheme aimed to address these challenges by providing small-scale financial assistance to women, enabling them to engage in income-generating activities, improve their living standards, and enhance their decision-making power within households. This research evaluated how the micro-credit scheme influenced women's economic conditions through increased income levels, savings, and business opportunities.

There is positive correlation between micro-credit and access to improve socio-economic indicators in the study area. As many times in developing countries conventional banking system was exclude many areas from its micro-credit outreach due to financial constraints and even government have their own priorities. Therefore, nonprofit microcredit organizations can play a pivotal role in this regard to fill the gap and for not only the self-sufficiency of general public but also increase micro-credit outreach depth and breadth. Grameen bank of Bangladesh is as one of the pioneer organizations in this regard and KASHIF in Pakistan but Akhuwat made its mark very quickly in this Regard. The analytical study and structured interviews of the persons attached to the organizations revealed that the organization works on five indicators.

The research conducted in the study area revealed a notable enhancement in people's income, accompanied by increase in their expenditure on various goods and services. Additionally, the finding underscore that the benefits of the loan extend beyond mere expenditure for the recipients, as a significant portion of the credit is directed towards diverse investment opportunities.

After analysis and discussions this study safety concludes that micro-credit is a key income source in the area under study and therefore the people of the sampled area prefer to take loan from NRSP in order to improve their social and economic conditions by providing access to much-needed financial resources, this initiative empowers individuals to engage in income-generating activities, gradually lifting them out of poverty's grip as well as enabling beneficiaries to create a safety net for future needs.

The utilization of micro-credit services has not only led to saving and improved consumption patterns among beneficiaries, but it has also facilitated an elevation in their o overall living standards. This economics progress, in turn, contributes although to a modest increase in employment opportunities within the Kotli district but there social status banking transport. The study indicates a positive impact of the credit scheme on the socio-economic conditions of the female community.

Furthermore, it is observed that the emerged that how they spend more on education of their children indicating beneficiaries in the study area have directed increased funds towards education, thereby an investment in human capital. In addition to this, the availability of better housing and improved health facilities has also been noted, attributed to a positive effect of the micro-credit scheme provided by NRSP.

Policy Recommendations

Diversifying Micro-Credit Programs entails expanding the range of available options to cater to diverse needs and economic activities. This approach allows participants the flexibility to engage in multiple transactions, adapting to changing economic dynamics and opportunities. By offering a variety of micro-credit options, the program can better meet the specific needs of different segments of the community in District Kotli.

To promote financial literacy, implementing initiatives to improve understanding of micro-credit terms, interest rates, and repayment schedules among participants is crucial. By introducing targeted financial education programs, participants can be empowered to make well-informed decisions and minimize misconceptions regarding micro-credit. Enhancing financial literacy encourages responsible borrowing and repayment practices, contributing to the sustainability and effectiveness of micro-credit programs.

Developing Tailored Loan Products involves designing specialized financial solutions aligned with the unique requirements of various economic sectors. By addressing the specific needs of participants engaged in micro-enterprises, self-employment, agricultural ventures, and other livelihood activities, tailored loan products can facilitate access to appropriate funding. These customized solutions ensure that participants have access to the financial resources necessary to support and grow their businesses effectively.

References

- Ahiabor, G. (2013). The Impact of Microfinance on the Development of Small-Scale Enterprises in the Ledzorkuku-Krowor Municipality in the Greater Accra Region of Ghana. *European Journal of Business and Management*, 5(7), 165- 172.
- Alin, A. (2010). "Multicollinearity." *Wiley interdisciplinary reviews: computational statistics* 2(3), 370-374.
- Anane, G. K., Cobbinah, P. B., & Manu, J. K. (2013). Sustainability of Small and Medium Scale Enterprises in Rural Ghana: The Role of Microfinance Institutions. *Asian Economic and Financial Review*, 3(8), 1003-1017.
- Augsburg, B., Haas, R. D., Harmgart, H., & Meghir, C. (2015). The impacts of microcredit: Evidence from Bosnia and Herzegovina. *American Economic Journal: Applied Economics*, 7(1), 183-203.
- Awan, A., & Molodyko, N. (2009). *The "Human Aspect" of Commercial Transformation*. Report, NRSP-Pakistan, ShoreBank International, Ltd., USAID AMPER Program.
- Basto, M., Pereira, J., Leite, E. & Ferreira-da-Silva, A., & Ferreira, . (2020). "Impact of microcredit on sustainable development of business. *Journal of Security & Sustainability Issues* 10(1).
- Bhatt, V., & Shastri, S. (2018). Measuring the Impact of Microfinance on Women Empowerment among Women of Rural Gujarat. *Int. J. Rev. and Res. Social Sci*, 6(3), 123-124.
- Brune, A. (2009). *An Empirical Study on the Impact of Microfinance Institutions on Development*. An Unpublished Bachelor of Arts Thesis of the Institute for Empirical Research in Economics (IEW) at the University of Zurich.
- Chen, Z., Helgertz, J., & Bengtsson, T. (2014). *Labor Force Participation Responses to New Rural Social Pension Insurance in China: A Regression Discontinuity Approach*.
- Chirkos, A. Y. (2014). The Impact of Microfinance on Living Standards, Empowerment and Poverty Alleviation of the Poor People in Ethiopia, a Case Study in ACSI. *Research Journal of Finance and Accounting*, 5(13), 43- 66.
- Chowdhury, M. A., Rahman, S. M. K., & Salman, M. A. G. (2021). Economic & Social Impact of Microfinance: An Empirical Evidence from Bangladesh. *Global Journal of Management and Business Research*.

- Chowdhury, M. J. A., Ghosh, D., & Wright, R. E. (2005). The impact of micro-credit on poverty: evidence from Bangladesh. *Progress in Development studies*, 5(4), 298-309.
- Cohen, I. (2009). Pearson correlation coefficient. Noise reduction in speech processing: 1-4.
- Copestake, J., Bhalotra, S., & Johnson, S. (2001). Assessing the impact of microcredit: A Zambian case study. *Journal of Development Studies*, 37(4), 81-100.
- Crépon, B., Devoto, F., Duflo, E., & Pariente, W. (2011). *Impact of microcredit in rural areas of Morocco: Evidence from a Randomized Evaluation*. Citeseer.
- Crépon, B., Devoto, F., Duflo, E., & Pariente, W. (2015). Estimating the impact of microcredit on those who take it up: Evidence from a randomized experiment in Morocco. *American Economic Journal: Applied Economics*, 7(1), 123-150.
- Dame, S., & Adisa, A. O. (2020). The Impact Of Microfinance Banks on the Income Level of Women Beneficiaries in Central and Northern Taraba after Joining the Microfinance Institutions. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 11(2), 17-24.
- Daoud, J. I. (2017). Multicollinearity and regression analysis. *Journal of Physics: Conference Series*, IOP Publishing.
- Develtere, P., & Huybrechts, A. (2005). The impact of microcredit on the poor in Bangladesh. *Alternatives*, 30(2), 165-189.
- Drennan, J. (2003). Cognitive interviewing: verbal data in the design and pretesting of questionnaires. *Journal of advanced nursing*, 42(1), 57-63.
- Elahi, K. Q., & Danopoulos, C. P. (2004). Microfinance and Third World Development: A Critical Analysis. *Journal of Political & Military Sociology*, 61-77.
- Fersi, M., & Boujelbéne, M. (2016). The Determinants of the Performance and the Sustainability of Conventional and Islamic Microfinance Institutions. *Economics World*, 4(5), 197-21.
- Gnawali, A. (2018). Impact of Microfinance Institutions in Women Economic Empowerment: With Reference To Butwal Sub-Municipality. *International Journal of Research in Humanities and Social Studies*, 5(5), 10-17.
- Goldberg, N. (2005). *Measuring the Impact of Microfinance: Taking Stock of What We Know*. Grameen Foundation USA publication series, 1-56.
- Hassan, M. K., & Sanchez, B. (2009). *Efficiency Analysis of Microfinance Institutions in Developing Countries*. Networks Financial Institute Working Paper.
- Hulme, D. (2000). Impact Assessment Methodologies for Microfinance: Theory, Experience and Better Practice. *World development*, 28(1), 79-98.
- Idrees, M., Ahmad, M., Yaseen, M., & Mahmood, Z. (2007). Satisfaction Level of the Trainees Regarding the Training Programmes Conducted By National Rural Support Programme (NRSP) For Farming Community in Rawalpindi. *Sarhad journal of agriculture*, 23(2), 533.
- Javed, A., Luqman, M., Khan, A. S., & Farah, A. A. (2006). Impact of Micro-Credit Scheme of NRSP on the Socio-Economic Conditions of Female Community in District Rawalakot, Azad Jamu and Kashmir, Pakistan. *Journal of Agriculture and Social Sciences (Pakistan)*.
- Kairuz, T., Crump, K., & O'Brien, A. (2007). Tools for data collection and analysis. *Pharmaceutical Journal*, 278.
- Kapila, M., Singla, A., & Gupta, M. L. (2016). *Impact of microcredit on women empowerment in India: An empirical study of Punjab state*. Proceedings of the World Congress on Engineering, Newswood Limited London, United Kingdom.
- Khan, M. F. Z. (2014). The Social and Financial Performance of Conventional and Islamic Microfinance Institutions in Pakistan. *Al-Idah*, 28(1), 17-34.
- Khan, S., & Sajid, M. R. (2011). Women's Empowerment through Microcredit: A Case Study of District Gujrat, Pakistan. *Academic Research International*, 1(2), 332.
- Khan, W., Shaorong, S., & Ullah, I. (2017). Doing Business with the Poor the Rules and Impact of the Microfinance Institutions. *Economic research-Ekonomska istraživanja*, 30(1), 951-963.

- Khurshid, N., Khurshid, J., Sadique, S., & Akhtar, S. (2016). Role of National Rural Support Program (Nrsp) In Income Enhancement of Rural Women: A Case Study of District Poonch, Azad Kashmir. *J. Agric. Res.*, 54(3), 555-565.
- Korth, P. (2017). *Innovative Finance for Social Justice the Social Dimensions of Development*.
- Kossinets, G., & Watts, D. J. (2006). Empirical analysis of an evolving social network. *Science* 311(5757), 88-90.
- Krishnappa, P., & Piddennavar, R., & Mohan, M. (2011). Art and Science of Questionnaire Development. *Journal Of Indian Association Of Public Health Dentistry*.
- Li, X., Gan, C., & Hu, B. (2011). The impact of microcredit on women's empowerment: evidence from China. *Journal of Chinese Economic and Business Studies*, 9(3), 239-261.
- Liu, A.-N., Wang, L. L., Li, H. P., Gong, J., & Liu, X. H. (2017). Correlation between posttraumatic growth and posttraumatic stress disorder symptoms based on Pearson correlation coefficient: A meta-analysis. *The Journal of nervous and mental disease*, 205(5), 380-389.
- Malik, N. H., & Luqman, M. (2005). Impact of Micro Credit on Women Empowerment: A Review Paper. *Pakistan Journal of Agriculture Science*, 42(3-4), 100-105.
- McKernan, S.-M. (2002). The impact of microcredit programs on self-employment profits: Do noncredit program aspects matter? *Review of economics and statistics*, 84(1), 93-115.
- Modi, A., Patel, K. J., & Patel, K. M. (2014). Impact of Microfinance Services on Rural Women Empowerment: An Empirical Study. *IOSR Journal of business and management*, 16(11), 1-8.
- Mohsin, M., Abbas, Q., Iqbal, N., & Iram, R. (2019). Assessing microfinance institutions efficiency by radial and non-radial DEA approach. *Pakistan Journal of Social Sciences* 39(3), 803-816.
- Najmi, H. S., Bashir, D., & Zia, M. (2015). Socioeconomic Impact of Microfinance on Borrowers: A Case Study of NRSP Bank Minchanabad. *Pakistan Journal of Humanities and Social Sciences*, 3(1).
- Naseer, M., & Haroon, S. (2018). The Extent of Disclosure in the Annual Reports of Banking Sector of Pakistan: An Empirical Investigation. *IUP Journal of Corporate Governance*, 17(3).
- Naveed Aslam, M., & Usman, A. K. (2022). Evaluation of Financial Sustainability of Islamic Microfinance Institutions in Pakistan. *Journal of Islamic & Religious Studies*, 6(1), 98-120.
- Nurmakhanova, M., Kretzschmar, G., & Fedhila, H. (2015). Trade-Off between Financial Sustainability and Outreach of Microfinance Institutions. *Eurasian Economic Review*, 5(2), 231-250.
- Oishi, S., & Kesebir, S. (2012). Optimal social-networking strategy is a function of socioeconomic conditions. *Psychological Science*, 23(12), 1542-1548.
- Oli, S. K. (2018). Impact of Microfinance Institutions on Economic Growth of Nepal. *Asian Journal of Economic Modelling*, 6(2), 98-109.
- Olu, O. J. O. (2009, November). *Impact of Microfinance on Entrepreneurial Development: The Case of Nigeria*. In the International Conference on Economics and Administration, Faculty of Administration and business (pp. 536-545).
- Omino, G. (2005). *Regulation and Supervision of Microfinance Institutions in Kenya*. Central bank of Kenya.
- Osmani, L. N. K. (2007). A breakthrough in women's bargaining power: The impact of microcredit. *Journal of International Development: The Journal of the Development Studies Association*, 19(5), 695-716.
- Parasteh, G. F. (2020). Descriptive-Inferential Analysis of the Content. *Environmental Education and Sustainable Development*, 8(2), 25-44.
- Rahman, M. W., Luo, J., Hafeez, A. S. M., & Sun, T. (2015). A Comprehensive Review of Microfinance Impacts, Sustainability and Outreach. *Asian Journal of Agricultural Extension, Economics & Sociology*, 6(2), 64-76.
- Rahman, R. A., Al Smady, A., & Kazemian, S. (2015). Sustainability of Islamic Microfinance Institutions through Community Development. *International Business Research*, 8(6), 196.

- Rahman, S. (2009). Impact of microcredit programs on higher income borrowers: Evidence from Bangladesh. *International Business & Economics Research Journal (IBER)* 8(2).
- Rai, A. K., & Rai, S. (2012). Factors Affecting Financial Sustainability of Microfinance Institutions. *Journal of Economics and Sustainable Development*, 3(6), 1-9.
- Rao, K. R. M., & Fitamo, T. L. (2015). Concepts and Measures of Outreach and Sustainability in Microfinance Institutions (A Comprehensive LiteraturReview). *International Journal of Science and Research (IJSR)*, 4(2).
- Roodman, D., & Morduch, J. (2014). The impact of microcredit on the poor in Bangladesh: Revisiting the evidence. *Journal of Development Studies*, 50(4), 583-604.
- Saad, M., Taib, H. M., Bhuiyan, A. B., & Sintok, U. U. M. (2018). Remodeling Index for the Microfinance Institutional Sustainability: A Theoretical Review. *International Journal of Business and Tehnopreneurship*, 8(2), 137-
- Sartor, G. (2008). Legal validity: An inferential analysis. *Ratio Juris* 21(2), 212-247.
- Sedgwick, P. (2012). Pearson's correlation coefficient. *Bmj* 345.
- Shankar, S. (2013). Financial Inclusion in India do Microfinance Institutions Address Access Barriers. *ACRN Journal of Entrepreneurship Perspectives*, 2(1), 60-74.
- Sharma, P. P., & Pati, A. P. (2015). Subsidized Microfinance and Sustainability of Self- Help Groups (Shgs): Observations from North East India. *Indian Journal of Finance*, 9(5), 7-19.
- Swapna, K. (2017). Impact of Microfinance on Women Entrepreneurship. *International journal of business administration and management*, 7(1), 229- 241.
- T. (2015). Impact of Microcredit on Agricultural Development in District Mastung Balochistan: A Case Study of Balochistan Rural Support Programme (BRSP). *Journal of Poverty. Investment and Development*, 9, 21- 36.
- Tehulu, T. A. (2013). Determinants of Financial Sustainability of Microfinance Institutions in East Africa. *European Journal of Business and Management*, 5(17), 152-158.
- Terano, R., Mohamed, Z., & Jusri, J. H. H. (2015). Effectiveness of Microcredit Program and Determinants of Income among Small Business Entrepreneurs in Malaysia. *Journal of Global Entrepreneurship Research*, 5(1), 1-14.
- Tucker, M. (2001). Financial Performance of Selected Microfinance Institutions: Benchmarking Progress to Sustainability. *Journal of Microfinance/ESR Review*, 3(2), 7.
- Van Seijen, H. (2009). *A theoretical and empirical analysis of expected sarsa. 2009 ieee symposium on adaptive dynamic programming and reinforcement learning*, IEEE.
- Vetrivel, S. C., & Kumarmangalam, S. C. (2010). Role of Microfinance Institutions in Rural Development. *International Journal of Information Technology and Knowledge Management*, 2(2), 435-441.
- Wang, X. (2013). *The Impact of Microfinance on the Development of Small and Medium Enterprises: The Case of Taizhou, China*. The Johns Hopkins University, Baltimore, MD, USA.
- Willis, G. B. (2016). Questionnaire pretesting. *The SAGE handbook of survey methodology* 24, 359-381.
- Wright, G. A. (1999). The Impact of Microfinance Services-Increasing Income or Reducing Poverty. *Small enterprise development*, 10, 38-47.
- Wu, S. S. (2018). A new data collection technique for preserving privacy. *The Journal of privacy and confidentiality*, 7(3), 99.
- Zaidi, H. H. (2017). Impact of Microfinance on Socio-Economic Conditions of the Borrowers: A Case Study of Akhuwat Foundation (Lahore). *European Journal of Multidisciplinary Studies*, 2(7), 239-248.
- Zdaniuk, B. (2024). *Ordinary least-squares (OLS) model*. Encyclopedia of quality of life and well-being research, Springer: 4867-4869.