

Economic Development and Breadth of Outreach as Contextual Conditions for Financial Self-Sufficiency: A Configurational Analysis of Microfinance Institutions

Rikza Sarosh¹ Safdar Husain Tahir² Rizwan Kamran³ Syed Ahmad Hassan Gillani^{4*}

¹ PhD Scholar, Lyallpur Business School, Government College University, Faisalabad, Punjab, Pakistan.

Email: rikzasarosh5@gmail.com

² Associate Professor, Lyallpur Business School, Government College University, Faisalabad, Punjab, Pakistan.

Email: drsafdar@gcuf.edu.pk

³ Assistant Professor, Lyallpur Business School, Government College University, Faisalabad, Punjab, Pakistan.

Email: rizwankamran@hotmail.com

⁴ Assistant Professor, Lyallpur Business School, Government College University, Faisalabad, Punjab, Pakistan.

Email: ahmadgillani@gcuf.edu.pk

ABSTRACT: This research uses an asymmetric configurational approach to analyse outreach breadth and economic development, considering contextual inputs that shape pathways to financial self-sufficiency among microfinance institutions. Panel data cover 1,295 microfinance institutions from 2009 to 2019 and are sourced from the World Bank (MIX Market) database. The study uses contextual conditions, including breadth of outreach, portfolio at risk, management inefficiency, active borrowers, capital structure, and economic development. The analysis of necessary conditions reveals that no individual condition is sufficient to produce a high level of financial self-sufficiency, indicating that financial self-sufficiency cannot be attributed solely to any single condition. However, sufficiency analysis suggests that outreach breadth is an important core condition for financial self-sufficiency, while economic development is not. None of the individual conditions—breadth of outreach, portfolio at risk, management inefficiency, active borrowers, capital structure, or economic development—met the threshold for a high Financial Sustainability Score (FSS), emphasising that sustainability cannot be sufficiently explained by a solitary factor. From 2009 to 2019, BOTR remained a core condition in the sufficiency analysis. In 2009, 2014, and 2019, active borrowers, outreach scope, and management inefficiency were among the most significant factors across most pathways, underscoring their vital role in underpinning MFI performance. Capital structure, portfolio at risk, and economic development were context- and time-dependent, with their effects being core conditions in some configurations and absent in others. In conclusion, the findings support equifinality and causal asymmetry, as different combinations of institutional and contextual factors can lead an MFI to achieve high financial self-sufficiency.

KEYWORDS: Economic Development, Fuzzy-Set Qualitative Comparative Analysis, Financial Self-Sufficiency

Pages: 70 – 81

Volume: 5

Issue: 8 (August 2026)

Corresponding Author

Syed Ahmad Hassan Gillani

✉ ahmadgillani@gcuf.edu.pk

Cite this Article: Sarosh, R., Tahir, S. H., Kamran, R., & Gillani, S. A. H. (2026). Economic Development and Breadth of Outreach as Contextual Conditions for Financial Self-Sufficiency: A Configurational Analysis of Microfinance Institutions. *The Regional Tribune*, 5(8), 70-81. <https://doi.org/10.55737/trt/v-viii.386>

Introduction

Microfinance institutions (MFIs) play a distinctive role in reducing poverty beyond the demographics that conventional banking institutions generally do not serve worldwide. (Imai et al., 2010; Mushtaq & Bruneau, 2019; Sarosh et al., 2026). They aim to achieve financial self-sufficiency (FSS) and focus on optimising costs and profitability (Ledgerwood, 1998; Rosenberg, 2009) to become independent of ongoing subsidies and donor funding. They balance social mission and commercial viability, or the trade-offs between outreach and sustainability, thoroughly in economic development around the globe. Results on the impact of portfolio quality, outreach, capital structure, and institutional efficiency are inconclusive across studies, samples, and time periods. (Awaworyi Churchill, 2019; Bogan, 2012; Haq et al., 2010; Harkat et al., 2023).

Our study addresses this gap by focusing on economic development and the breadth of outreach as contextual conditions for financial self-sufficiency, which asymmetric configurational analyses of MFIs have not examined. We examine the propositions that various combinations of institutional conditions and financial self-sufficiency result from interactions among two sets of variables: breadth of outreach, portfolio at risk, management inefficiency, active borrowers, and capital structure. First, rather than controlling for context, we treat the level of economic development of the country (where an MFI operates) as a contextual factor that likely influences the viability or effectiveness of various combinations of institutional conditions. This aligns with an emerging consensus in the international business and development finance literature that institutional and strategic "recipes" are not universally applicable, and that what works in low-income economies may be largely irrelevant in middle- or high-income economies. Second, we examine outreach and economic development as contextual factors, noting that the number and quality of clients an MFI serves are influenced not only by its policies but also by the level of economic development in its market. Considering both the breadth of outreach and economic development as contextual conditions, rather than solely internal factors, allows us to inquire not only, "which combinations of conditions lead to FSS?" but also, "how does the response to that question differ across various conditions of economic development and outreach?"

The economy's stage of development plays a critical role in MFI performance and influences FSS. Developed economies benefit from strong institutional frameworks and advanced technologies, which foster FSS (Ahmed et al., 2023; Singh & Singh, 2025). In contrast, developing economies face challenges like weak regulations, limited capital, and high poverty levels (Megersa, 2020). Additionally, high credit risk and operational expenses in geographically dispersed areas hinder MFI self-sufficiency. To address these challenges, MFIs must adopt context-specific strategies, such as flexible repayment models and lending structures tailored to societal needs (Singh, 2024). In developed countries, advanced data analysis technologies improve credit assessments and operational efficiency (Remer & Kattilakoski, 2021). Understanding MFI FSS requires integrating internal determinants (RBV theory) with external economic contexts (institutional theory).

Objectives of the study

1. To examine economic development contextual conditions for financial self-sufficiency in microfinance institutions.
2. To analyse breadth of outreach contextual conditions for financial self-sufficiency in microfinance institutions.
3. To evaluate the joint influence of portfolio at risk, management inefficiency, breadth of outreach, active borrowers, and capital structure on financial self-sufficiency in microfinance institutions.
4. Policy recommendations for the management of microfinance institutions.

Literature Review

A microfinance institution is considered financially self-sufficient if its revenues fully cover its costs. (Marwa & Aziakpono, 2015). Over the last two decades, MFIs have been compelled to engage in commercial activities, which has led them to drift from their vision and mission. This may consequently deviate MFIs from their core responsibility. (Armendáriz & Labie, 2011; Armendáriz & Szafarz, 2011). Although numerous empirical studies have produced diverse and context-dependent results (Nyamsogoro, 2010) some research suggests a trade-off between outreach and FSS, while others find no substantial relationship (Cull et al., 2007; Hermes et al., 2011). This motivates us to address the emergent debate, as the relationship between outreach and sustainability may depend on institutional and contextual factors. Therefore, we adopt a configurational approach-fuzzy-set qualitative comparative analysis (fsQCA)—rather than conventional regression-based methods.

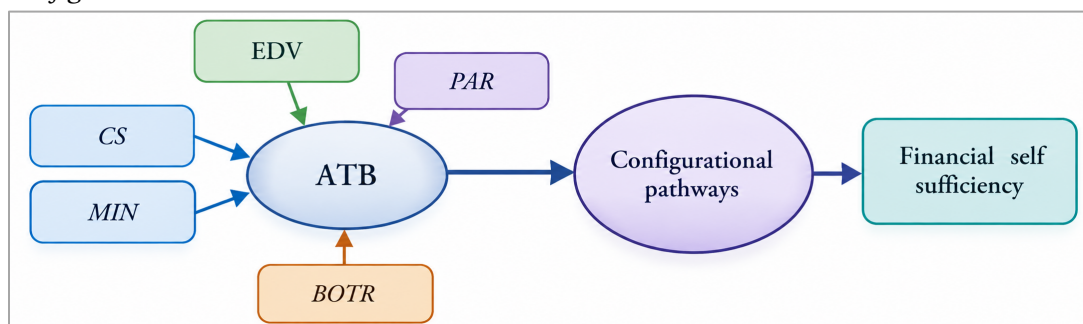
In addition, other characteristics closely related to FSS include outreach (BOTR), portfolio at risk (PAR), management inefficiency (MIN), capital structure (CS), and active borrowers (ATB). Empirical evidence on the link between these characteristics and FSS is inconclusive. (Abusharbeh, 2023; Rahman & Mazlan, 2014; Schäfer & Fukasawa, 2011). Empirical evidence supporting this association, however, is inconsistent across various types of institutions and geographical regions, indicating that it may be context-dependent rather than universally applicable. Thus, a configurational asymmetric study is needed, as these effects emerge only when multiple factors combine in specific ways, particularly outreach and economic development.

Recent configurational research further indicates that the relationship between active borrowers and FSS depends on interactions among institutional efficiency, portfolio quality, and country-level development conditions. The contextual conditions, including a stable market and robust infrastructure, enhance the participation of borrowers in microfinance institutions (MFIs) (Ahlin et al., 2011). Under such conditions, increasing borrower outreach may elevate repayment risks and weaken sustainability outcomes. (Hartarska et al., 2014).

The research scholars contend that the performance of Microfinance Institutions (MFIs) is affected by the macro-institutional environment, drawing upon institutional theory and international business operations (Cull et al., 2007; Hermes et al., 2011). Economic development creates a macro-institutional environment that fosters stable financial markets and healthy competition. Several regression-based research studies have employed economic development as a moderating factor in many cross-country and multi-level analyses of microfinance institution (MFI) performance (Hussain et al., 2025; Sainz-Fernandez et al., 2018). Our research is grounded in institutional theory, which may align even more closely with the configurational approaches of fsQCA, which we employ. This study contributes to microfinance and FSS literature and is the first, to the best of the authors' knowledge. Figure 1 shows the configuration model, which consists of active borrowers, portfolio at risk, capital structure, economic development, breadth of outreach, management inefficiency, and financial self-sufficiency.

Figure 1

Configuration Model



Data and Methodology

This study sample is formed from the Microfinance Information Exchange (MIX Market). Institutions were selected based on the availability and continuity of data on the variables during 2009-2019. This study is based purely on secondary panel data; the sample selection is based on the availability of complete variables and accurate data for all variables. The sample consists of 1,295 microfinance institutions.

Table 1

Measurement of Variables

Condition	Abb	Measurement	Condition Type
Financial self-sufficiency	FSS	Operating Revenue is divided by the sum of financial expenses, operating expenses, and loan loss provision.	Outcome
Breadth of Outreach	BOTR	Total number of clients served by the MFIs	Input condition
Economic Development	EDV	GDP growth (annual%).	Input condition
Portfolio at Risk	PAR	The share of loans that are overdue by up to 30 days within the total loan portfolio.	Input condition
Management Inefficiency	MIN	Operating expense ratio relative to total assets	Input condition
Capital Structure	CS	Total equity is divided by total debt.	Input condition
Active Borrower	ATB	The total number of accounts of individuals with an existing outstanding loan balance.	Input condition

Methods

We conducted the Fuzzy-Set Qualitative Comparative Analysis (fsQCA) using methodical procedures in accordance with accepted methodological standards. First, we used direct calibration thresholds (0.95, 0.50, 0.05), which are supported both theoretically and experimentally, to convert the raw data into fuzzy-set membership scores. The study uses 0.95 to indicate full membership, 0.50 as the crossover point, and 0.05 for non-membership (Ragin, 2008). Second, we determine the prerequisites for achieving high financial self-sufficiency; a necessary condition analysis was carried out. (Schneider & Wagemann, 2012). Third, all potential causal condition configurations were compiled into truth tables, and empirically relevant configurations were retained by applying frequency and consistency criteria. (Fiss, 2011). To identify the combinations of institutional and contextual factors leading to high financial self-sufficiency, we ultimately conducted a sufficiency-condition analysis. This configurational approach acknowledges causal asymmetry and equifinality, enabling several explanations for the same result. (Fiss, 2011; Misangyi et al., 2017). The study uses the same calibration table as in the previously published paper, except for DORT and economic development.

Calibration

Three qualitative anchors indicating full membership (0.95), the crossover point (0.50), and full non-membership (0.05) calibrate all variables into fuzzy sets in accordance with Charles C. Ragin's guidelines. The empirical distribution of the data, known microfinance benchmarks, and theoretical concerns inform the choice of calibration levels. Calibration was reversed to represent participation in the set of well-performing institutions for variables like portfolio at risk and managerial inefficiency, where lower values indicate greater performance.

Table 2*Calibration Anchors*

Condition	Full membership	Crossover	Non-membership	Reference
FSS	1.1	1	.9	(Mersland & Øystein Strøm, 2009)
BOTR	100000	10000	500	(Aslam et al., 2019; Awaworyi Churchill, 2019a; Ragin, 2009)
PAR	0.01	0.05	0.15	(Rosenberg, 2009)
MIN	0.05	0.15	0.35	(Cull et al., 2011)
ATB	15000	2000	100	(Cull et al., 2007)
CS	1.50	0.50	0.10	(Hartarska & Nadolnyak, 2007)
EDV	7.0	3.5	0.0	IMF WEO 2019

Analysis of Necessary Condition

The necessary condition analysis determines whether attaining high financial self-sufficiency (FSS) requires any condition. The analysis was carried out before the sufficiency analysis, in accordance with the suggestions of (Ragin, 2009; Schneider & Wagemann, 2012). When a condition's consistency value exceeded the suggested cutoff of 0.90, we deemed it required. To assess the empirical significance of the necessary conditions, we also examined coverage values. We did not consider conditions with consistency and coverage values below 0.90 necessary for achieving financial sustainability. None of the individual conditions met the suggested consistency and coverage level of 0.90, as shown in the requisite condition analysis results in Table 3. As a result, it is impossible to identify a single prerequisite for financial sustainability. This result supports the configurational logic of fsQCA by indicating that financial sustainability results from combinations of organisational and contextual factors rather than from a single antecedent situation (Ragin, 2009; Schneider & Wagemann, 2012; Ullah et al., 2023).

Table 3*Necessary Condition Analysis*

Condition	Consistency	Coverage
2009		
BOTR	0.506	0.704
PAR	0.621	0.661
MIN	0.450	0.570
ATB	0.534	0.675
CS	0.345	0.692
EDV	0.449	0.622
2014		
BOTR	0.543	0.735
PAR	0.647	0.685
MIN	0.468	0.607
ATB	0.559	0.699
CS	0.348	0.730
EDV	0.685	0.652
2019		
BOTR	0.561	0.616
PAR	0.086	0.670
MIN	0.451	0.617
ATB	0.459	0.942
CS	0.341	0.728
EDV	0.581	0.668

Truth Table Construction

We constructed a truth table using a frequency and consistency threshold after completing the requisite condition analysis. For logical minimisation and sufficiency analysis, only configurations that met these requirements were retained. This process enabled identification of empirically significant combinations of factors related to financial sustainability (Ragin, 2009; Schneider & Wagemann, 2012). After calibration and necessary condition analysis, truth tables were created to identify combinations of causal factors linked to high financial self-sufficiency (FSS) in microfinance institutions. The truth table in fsQCA gives empirical evidence for each configuration, including the number of cases, consistency, and proportional reduction in inconsistency (PRI), and summarizes all logically feasible combinations of causal conditions. Before carrying out the reduction process, this technique makes it possible to identify configurations sufficiently consistent with the result (Ragin, 2009; Schneider & Wagemann, 2012).

Table 4

Truth Table

BOTR	PAR	MIN	ATB	CS	EDV	number	FSS	Raw- con	PRI- con	SYM- con
1	1	0	1	0	0	18	1	0.851	0.772	0.773
1	1	0	1	0	1	106	1	0.843	0.784	0.789
1	0	0	1	0	0	49	1	0.830	0.739	0.741
1	1	1	1	0	0	22	0	0.808	0.697	0.698
0	1	0	1	0	1	31	0	0.805	0.707	0.708
0	1	0	0	1	0	11	0	0.803	0.682	0.682
0	1	0	0	1	1	17	0	0.803	0.698	0.699
1	0	0	1	0	1	52	0	0.798	0.698	0.700
1	1	1	1	0	1	50	0	0.796	0.700	0.702
0	0	0	1	0	0	11	0	0.784	0.654	0.654
1	1	1	0	0	0	10	0	0.784	0.642	0.642
1	0	1	1	0	0	24	0	0.782	0.654	0.654
0	1	0	0	0	0	10	0	0.779	0.658	0.659
0	0	0	0	1	0	9	0	0.778	0.641	0.642
0	0	0	0	1	1	13	0	0.774	0.642	0.642
1	1	0	0	0	1	64	0	0.767	0.660	0.673
1	0	0	0	0	1	17	0	0.766	0.620	0.623
0	1	1	1	0	0	15	0	0.763	0.614	0.617
0	0	0	1	0	1	31	0	0.763	0.637	0.639
1	0	1	1	0	1	20	0	0.763	0.631	0.632
0	1	1	0	1	0	17	0	0.752	0.601	0.601
0	0	1	1	0	0	10	0	0.745	0.587	0.588
0	1	0	0	0	1	58	0	0.742	0.645	0.651
1	1	1	0	0	1	22	0	0.739	0.594	0.596
0	1	1	0	1	1	19	0	0.738	0.596	0.597
0	1	1	1	0	1	15	0	0.738	0.590	0.591
1	0	1	0	0	1	11	0	0.736	0.573	0.576
0	0	0	0	0	0	12	0	0.729	0.586	0.586
0	0	1	0	1	0	21	0	0.727	0.568	0.570
0	0	1	1	0	1	14	0	0.720	0.556	0.556
0	0	1	0	1	1	19	0	0.718	0.564	0.565
0	1	1	0	0	0	24	0	0.716	0.562	0.565
0	0	0	0	0	1	26	0	0.703	0.571	0.572
0	0	1	0	0	0	12	0	0.693	0.529	0.529
0	1	1	0	0	1	31	0	0.667	0.520	0.521
0	0	1	0	0	1	36	0	0.663	0.513	0.514

Sufficient Condition Analysis

Fuzzy-Set Qualitative Comparative Analysis (fsQCA) was employed in the analysis of adequate conditions to identify the combinations of causal factors associated with high financial sustainability (FSS) among microfinance institutions (MFIs). Fuzzy-Set Qualitative Comparative Analysis (fsQCA) examines how several conditions interact and combine to produce a particular outcome, in contrast to traditional statistical methods that estimate the independent net effects of variables (Fiss, 2011; Ragin, 2008; Ullah et al., 2025). As it recognises that outcomes may result from various pathways, a concept referred to as equifinality, this approach is particularly well suited for examining causal complexity (Fiss, 2011; Schneider & Wagemann, 2012). Consequently, instead of being affected by a singular factor, financial sustainability is regarded as the outcome of numerous combinations of organizational and environmental elements (Fan et al., 2023). These elements collaborate to generate long-term financial success for Microfinance Institutions (MFIs).

Table 5 presents the configurations that result in high financial sustainability, along with their coverage and consistency values. The identified configurations illustrate the interaction between capital structure, economic development, active borrowers, portfolio risk, outreach scope, and management effectiveness in contributing to sustainable financial success among microfinance institutions (MFIs).

Table 5

Sufficiency Analysis BOTR–EDV 2009

Conditions	S1	S2
BOTR	●	●
PAR	⊗	●
MIN	⊗	⊗
ATB	●	●
CS		●
EDV	⊗	●
Raw Coverage	0.16	0.09
Unique Coverage	0.11	0.03
Consistency	0.79	0.81
Solution Coverage	0.20	
Solution Consistency	0.80	

Note: ● Core presence; ⊗ Core absence; ● Peripheral presence; ⊗ Peripheral absence.

Table 5 presents the 2009 analysis, in which the sufficiency analysis identified two configurations (S1 and S2) associated with high financial sustainability, as in S1. While the solution consistency of 0.81 indicates that the discovered configurations consistently yield the intended result, the solution coverage of 0.20 indicates that these configurations explain about 20% of financially sustainable MFIs (Tahir et al., 2026; Ullah et al., 2026; Xu et al., 2024). Breadth of outreach (BOTR), the absence of managerial inefficiency (MIN), and the presence of active borrowers (ATB) are features common to both arrangements. The results show that this combination of conditions provides a more comprehensive explanation of the financial sustainability of Microfinance Institutions (MFIs). S1 demonstrates that the presence of BORT and ATB, coupled with the absence of PAR, MIN, and EDV, is sufficient to produce a high FSS (Raza et al., 2023; Tahir et al., 2021; Ullah et al., 2023). By demonstrating that various combinations of internal organisational skills and external environmental variables can yield the same successful outcome, these findings further support the configurational nature of financial sustainability.

Table 6

Sufficiency Analysis BOTR–EDV 2014

Conditions	S1	S2
BOTR	●	●
PAR		●
MIN	⊗	⊗
ATB	●	●
CS	⊗	⊗
EDV	⊗	
Raw Coverage	0.18	0.23
Unique Coverage	0.03	0.09
Consistency	0.82	0.83
Solution Coverage	0.27	
Solution Consistency	0.82	

Table 7 presents the results of the sufficiency analysis for the year 2014. Two paths again generate high FSS. S1 indicates that the presence of the core of BOTR and the periphery of ATB, with the absence of the core of MIN and EDV and the periphery of CS, can generate high FSS. Nevertheless, PAR is not associated with any specific care condition. Analogous to the situation in 2009, S2 suggests that the presence of core BOTR, PAR, and ATB, in the absence of peripheral CS, may result in elevated FSS. In 2014, EDV is a don't-care condition.

Table 7

Sufficiency Analysis BOTR–EDV 2019

Conditions	S1	S2	S3
BOTR	●		●
PAR		●	●
MIN		⊗	
ATB	●	●	●
CS	⊗	⊗	⊗
EDV	⊗		
Raw Coverage	0.26	0.28	0.29
Unique Coverage	0.06	0.04	0.02
Consistency	0.81	0.83	0.82
Solution Coverage	0.40		
Solution Consistency	0.80		

Table 6 presents three potential solutions: S1, S2, and S3. The S1 solution indicates that the presence of the BORT and ATB cores, coupled with the absence of the CS and EDV cores, may result in a high level of FSS. MIN and PAR are the don't-care conditions in S1. S2 shows that PAR and ATB core conditions, coupled with the absence of the MIN and CS cores, can generate a high level of FSS. S3 demonstrates that the presence of BORT, PAR, and ATB, with the core absence of CS, can generate a high level of FSS. In S3, MIN and EDV are considered don't care conditions.

Conclusion

The findings of this study demonstrate that the financial self-sufficiency (FSS) of Microfinance Institutions (MFIs) is primarily a configurational attribute rather than a singular determinant. The necessary condition analysis showed that none of the single conditions (breadth of outreach, portfolio at risk, management inefficiency, active borrowers, capital structure, or economic development) met the necessary condition threshold for high FSS, thus highlighting that sustainability cannot be explained by a single condition. BOTR remains a core condition from 2009 to 2029. EDV doesn't bring any structural change during the period 2009 to 2014. In all three years (2009, 2014, and 2019), each facet of the sufficiency analysis indicated that active borrowers, outreach scope, and management inefficiency were among the most significant factors across most pathways, underscoring the vital role these conditions have in underpinning microfinance institution (MFI) performance. Capital structure, portfolio at risk, and economic development, by contrast, were context- and time-dependent, with their effects being core conditions in some configurations and absent in others in their contribution to FSS.

In sum, the results support the notions of equifinality and causal asymmetry, as there are multiple unique sets of institutional and contextual factors under which an MFI can be highly financially self-sufficient.

Policy Implications

The study's conclusions have significant policy implications for managers of microfinance institutions (MFIs), legislators, financial regulators, development organizations, and foreign donor organizations that aim to improve MFIs' financial self-sufficiency (FSS) while upholding their social mission. This research shows that MFIs attain financial self-sufficiency through various combinations of institutional and contextual variables, in contrast to earlier studies that highlight the independent importance of individual determinants. Therefore, rather than relying on generic approaches that assume the same solutions for every MFI, policy interventions should take a comprehensive, context-specific approach. According to this study's main conclusions, policymakers should acknowledge that no universal approach exists for achieving financial self-sufficiency in the microfinance industry. The fsQCA results show that different combinations of outreach, operational efficiency, risk management, borrower base, capital structure, and national development conditions can yield similar results, with many pathways leading to high financial self-sufficiency. Thus, within the framework of equifinality, managers and policymakers could pursue many paths rather than a single solution.

Future Recommendations

- ▶ The temporal limits of this study (2009 to 2019) are constrained by data availability and could be extended with the availability of newer data.
- ▶ With the post-2019 data, researchers could determine if the factors and causal pathways identified in this study continued to stay the same during that disruption or if new configurations arose.
- ▶ Other contextual conditions, including the financial and economic environment, should be analyzed in future studies.

References

- Abusharbeh, M. T. (2023). Modeling the factors of portfolio at risk for microfinance institutions in Palestine. *Cogent Economics & Finance*, 11(1). <https://doi.org/10.1080/23322039.2023.2186042>
- Ahlin, C., Lin, J., & Maio, M. (2011). Where does microfinance flourish? Microfinance institution performance in macroeconomic context. *Journal of Development Economics*, 95(2), 105-120. <https://doi.org/10.1016/j.jdeveco.2010.04.004>
- Ahmed, M., Tahir, S. H., & Gulzar Ahmad. (2023). Fostering inclusive growth: Exploring gender dynamics and loan sizes in Microfinance institutions. *Annals of Social Sciences and Perspective*, 4(2), 285-305. <https://doi.org/10.52700/assap.v4i2.301>
- Armendáriz, B., & Labie, M. (2011). The handbook of Microfinance. <https://doi.org/10.1142/7645>
- Armendáriz, B., & Szafarz, A. (2011). On mission drift in Microfinance institutions. *The Handbook of Microfinance*, 341-366. https://doi.org/10.1142/9789814295666_0016
- Aslam, M., Kumar, S., & Sorooshian, S. (2018). Social versus financial performance of Microfinance: Bangladesh perspective. *Research in World Economy*, 10(3), 263. <https://doi.org/10.5430/rwe.v10n3p263>
- Awaworyi Churchill, S. (2019). Microfinance financial sustainability and outreach: Is there a trade-off? *Empirical Economics*, 59(3), 1329-1350. <https://doi.org/10.1007/s00181-019-01709-1>
- Bogan, V. L. (2012). Capital structure and sustainability: An empirical study of Microfinance institutions. *Review of Economics and Statistics*, 94(4), 1045-1058. https://doi.org/10.1162/rest_a_00223
- Cull, R., Demirgüç-Kunt, A., & Morduch, J. (2007). Financial performance and outreach: A global analysis of leading Microbanks. *The Economic Journal*, 117(517), F107-F133. <https://doi.org/10.1111/j.1468-0297.2007.02017.x>
- Cull, R., Demirgüç-Kunt, A., & Morduch, J. (2011). Does regulatory supervision curtail Microfinance profitability and outreach? *World Development*, 39(6), 949-965. <https://doi.org/10.1016/j.worlddev.2009.10.016>
- Fan, B., Zhao, H., Kamran, H. W., & Tahir, S. H. (2023). Environmental sustainability targets: The role of green investment, ICT development, and economic growth. *Economic Research-Ekonomska Istraživanja*, 36(3). <https://doi.org/10.1080/1331677x.2022.2151490>
- Fiss, P. C. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal*, 54(2), 393-420. <https://doi.org/10.5465/amj.2011.60263120>
- Haq, M., Skully, M., & Pathan, S. (2009). Efficiency of Microfinance institutions: A data envelopment analysis. *Asia-Pacific Financial Markets*, 17(1), 63-97. <https://doi.org/10.1007/s10690-009-9103-7>
- Harkat, T., Aguenou, S., Abrache, J., & Ez-zarzari, Z. (2023). Impact of loan portfolio characteristics on microfinance institutions: The case of Morocco. *African Review of Economics and Finance*, 15(2), 101-121.
- Hartarska, V., & Nadolnyak, D. (2007). Do regulated microfinance institutions achieve better sustainability and outreach? cross-country evidence. *Applied Economics*, 39(10), 1207-1222. <https://doi.org/10.1080/00036840500461840>
- Hartarska, V., Nadolnyak, D., & Mersland, R. (2014). Are women better bankers to the poor? Evidence from rural Microfinance institutions. *American Journal of Agricultural Economics*, 96(5), 1291-1306. <https://doi.org/10.1093/ajae/aau061>
- Hermes, N., Lensink, R., & Meesters, A. (2011). Outreach and efficiency of Microfinance institutions. *World Development*, 39(6), 938-948. <https://doi.org/10.1016/j.worlddev.2009.10.018>

- Hussain, M., Rehman, R. U., Bashir, U., & Faisal, F. (2025). Examining employee well-being and financial performance in microfinance institutions: Insights from cross-country analysis. *Journal of Social and Economic Development*. <https://doi.org/10.1007/s40847-025-00458-5>
- Imai, K. S., Arun, T., & Annim, S. K. (2010). Microfinance and household poverty reduction: New evidence from India. *World Development*, 38(12), 1760-1774. <https://doi.org/10.1016/j.worlddev.2010.04.006>
- Ledgerwood, J. (1998). *Microfinance handbook: An institutional and financial perspective*. World Bank Publications.
- Marwa, N., & Aziakpono, M. (2015). Financial sustainability of tanzanian saving and credit cooperatives. *International Journal of Social Economics*, 42(10), 870-887. <https://doi.org/10.1108/ijse-06-2014-0127>
- Megersa, K. (2020). Improving SMEs' access to finance through capital markets and innovative financing instruments: some evidence from developing countries.
- Mersland, R., & Øystein Strøm, R. (2009). Performance and governance in microfinance institutions. *Journal of Banking & Finance*, 33(4), 662-669. <https://doi.org/10.1016/j.jbankfin.2008.11.009>
- Misangyi, V. F., Greckhamer, T., Furnari, S., Fiss, P. C., Crilly, D., & Aguilera, R. (2016). Embracing causal complexity. *Journal of Management*, 43(1), 255-282. <https://doi.org/10.1177/0149206316679252>
- Mushtaq, R., & Bruneau, C. (2019). Microfinance, financial inclusion and ICT: Implications for poverty and inequality. *Technology in Society*, 59, 101154. <https://doi.org/10.1016/j.techsoc.2019.101154>
- Nyamsogoro, G. D. (2010). Financial sustainability of rural micro finance institutions (MFIs) in Tanzania The University of Greenwich].
- Ragin, C. C. (2008). What is qualitative comparative analysis?
- Ragin, C. C. (2009). Redesigning social inquiry: Fuzzy sets and beyond. University of Chicago press.
- Rahman, M. A., & Mazlan, A. R. (2014). Determinants of financial sustainability of Microfinance institutions in Bangladesh. *International Journal of Economics and Finance*, 6(9). <https://doi.org/10.5539/ijef.v6n9p107>
- Raza, M. M., Tahir, S. H., Raza, H., Fadhil Ali, A., & Rahat Alvi, A. (2023). Board characteristics and firm performance: A Configurational analysis. *JISR management and social sciences & economics*, 21(1), 69-91. <https://doi.org/10.31384/jisrmsse/2023.21.1.4>
- Remer, L., & Kattilakoski, H. (2021). Microfinance institutions' operational self-sufficiency in sub-Saharan Africa: Empirical evidence. *International Journal of Corporate Social Responsibility*, 6(1). <https://doi.org/10.1186/s40991-021-00059-5>
- Rosenberg, R. (2009). Measuring results of microfinance institutions: Minimum indicators that donors and investors should track-A technical guide.
- Sainz-Fernandez, I., Torre-Olmo, B., López-Gutiérrez, C., & Sanfilippo-Azofra, S. (2018). Development of the financial sector and growth of Microfinance institutions: The moderating effect of economic growth. *Sustainability*, 10(11), 3930. <https://doi.org/10.3390/su10113930>
- Hussain, S., Sarosh, R., Afzal, M., Khalid, W., & Tabasam, A. H. (2026). Do human development matters? Evidence on Microfinance institutions' financial self-sufficiency around the globe. *Qlantic Journal of Social Sciences*, 7(3), 286. <https://doi.org/10.55737/qjss.vii-iii.26571>
- Hadžiahmetović, N. (2021). Factors determining the operational self-sufficiency of microfinance institutions. *Croatian Review of Economic, Business and Social Statistics*, 7(2), 1-13. <https://doi.org/10.2478/crebss-2021-0006>
- Schneider, C. Q., & Wagemann, C. (2012). Set-theoretic methods for the social sciences. <https://doi.org/10.1017/cbo9781139004244>

- Singh, A. K., & Singh, R. (2025). Implications of digital infrastructure on social sustainability in global countries. *Approaches to Global Sustainability, Markets, and Governance*, 381-403. https://doi.org/10.1007/978-981-96-0843-0_19
- Singh, K. (2024). Economics and financial sustainability in microfinancing: do investment flows toward developing countries, rural areas, microenterprises and female borrowers foster institutionalization? *Studies in Economics and Finance*.
- Tahir, S. H., Ullah, M. R., Ahmad, G., Syed, N., & Qadir, A. (2021). Women in top management: Performance of firms and open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(1), 87. <https://doi.org/10.3390/joitmc7010087>
- Tahir, S. H., Wang, X., Zulfqar, M., Ullah, M. R., & Sajid, M. A. (2025). The synergistic impact of digital technology and financial systems on sustainable environment. *Natural Resources Forum*, 50(2), 892-906. <https://doi.org/10.1111/1477-8947.12603>
- Ullah, M. R. (2023). From pixels to profits: Configurations of digital alchemy for SMEs excellence. *Journal of Development and Social Sciences*, 4(III). [https://doi.org/10.47205/jdss.2023\(4-iii\)66](https://doi.org/10.47205/jdss.2023(4-iii)66)
- Ullah, M. R., Tahir, S. H., Ahmed, M., & Khan, M. J. (2025). The role of digitalization and digital capabilities in financial performance: A Multilayer perceptron-based hybrid SEM-ANNs approach. *International Journal of Business and Society*, 26(2), 548-569. <https://doi.org/10.33736/ijbs.7878.2025>
- Ullah, M. R., Tahir, S. H., Shahzadi, H., & Kamran, H. W. (2023). Digital pathways to success: The transformative power of digitalization and digital capabilities on SMEs' financial performance. *iRASD Journal of Economics*, 5(2), 465-485. <https://doi.org/10.52131/joe.2023.0502.0140>
- Ullah, M. R., Tahir, S. H., Zulfqar, M., & Tabasam, A. H. (2026). Role of digitalisation and digital capabilities in the non-financial performance of SMEs: A multi-method SEM-fsqca-ANNs approach. *Technology Analysis & Strategic Management*, 1-18. <https://doi.org/10.1080/09537325.2026.2685695>
- Xu, X., Tahir, S. H., Khan, K. B., Sajid, M. A., & Safdar, M. A. (2024). Beyond regression: Unpacking research of human complex systems with qualitative comparative analysis. *Heliyon*, 10(10), e31457. <https://doi.org/10.1016/j.heliyon.2024.e31457>