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LINKAGES BETWEEN WOMEN'S ECONOMIC AGENCY AND MICROFINANCE PARTICIPATION: A QUANTITATIVE ANALYSIS

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ABSTRACT

Women's economic agency concerns the practical ability to make and act upon consequential economic choices, including control over income, productive resources, savings, enterprise decisions, and household expenditures. Microfinance is frequently expected to strengthen this agency, yet evidence shows that account ownership or loan receipt alone does not guarantee control, capability, or bargaining power. This article develops and tests an integrated framework linking four dimensions of microfinance participation—access to microcredit, savings participation, financial and enterprise capability support, and group participation/social capital—to women's economic agency. The reconstructed measurement results supplied with the study indicate excellent internal consistency across the five constructs (Cronbach's α = .900–.945; overall α = .967). After correcting an apparent transposition in the source table, composite reliability ranges from .704 to .744 and average variance extracted from .510 to .680. The reported confirmatory factor model shows acceptable fit (χ^2/df = 2.004, CFI = .915, TLI = .921, PNFI = .616, RMSEA = .062), while the structural model also shows acceptable fit (χ^2/df = 2.341, CFI = .939, TLI = .915, PNFI = .727, RMSEA = .065). The supplied hypothesis table reports p < .001 for all four direct relationships. Because respondent-level data and coefficient output were not included, effect sizes and explanatory power cannot be independently estimated and are deliberately not fabricated. The paper contributes a multidimensional, agency-centred model, a complete questionnaire, and a reproducible multiple-regression protocol for final estimation once the dataset is available. The central practical implication is that microfinance should be designed as a bundle of usable finance, savings, capability development, and collective support rather than as credit delivery alone.

KEYWORDS: *Women's Economic Agency; Microfinance; Microcredit; Savings Groups; Financial Capability; Social Capital; Multiple Regression; Structural Equation Modelling*

1. INTRODUCTION

Women's economic empowerment has moved from a peripheral development objective to a central concern in debates on inclusive growth, poverty reduction, decent work, and gender equality. UN Women defines economic empowerment as a transformative process through which women gain equal rights, access to and control over economic resources, and the ability to participate in and benefit from economic activity. The emphasis on control and choice is important. A woman may possess an account, receive a loan, or contribute labour while still lacking authority over how money is used, whether an enterprise is expanded, or how household expenditures are allocated. Economic participation is therefore not equivalent to economic agency.

Financial inclusion has expanded substantially, but gender differences in use, control, and resilience remain. The Global Findex 2021 reported a four-percentage-point global gender gap in account ownership and a six-point gap in developing economies, while India displayed substantial gaps in the active use of digital payments even where ownership gaps had narrowed. The Global Findex 2025 continues to treat gender, digital connectivity, usage, saving, borrowing, and resilience as distinct dimensions rather than if account ownership alone represents meaningful inclusion. These patterns support a shift from an access-centred question—whether women can obtain financial services—to an agency-centred question—whether women can use, control, and convert those services into valued economic outcomes.

Microfinance includes small loans, savings mechanisms, insurance, payments, financial education, enterprise support, and group-based delivery arrangements designed for people who are poorly served by conventional finance. It has often targeted women because women face collateral constraints, unequal asset ownership, restricted mobility, limited formal employment, and discriminatory social norms. The underlying expectation is that finance relaxes capital constraints, supports enterprise formation, stabilizes consumption, and

increases women's contribution to household income. A stronger contribution may increase bargaining power and decision-making participation. Group models may additionally create peer support, information exchange, collective efficacy, and social networks.

The empirical record, however, is mixed. Randomized evidence from Hyderabad found that expanded microcredit increased borrowing and business investment for some households but did not generate broad, transformative changes in average consumption or social outcomes (Banerjee et al., 2015). Reviews of financial-inclusion interventions conclude that effects are more often positive than negative but generally small, heterogeneous, and dependent on product design and context (Duvendack & Mader, 2020). Studies focused on women also warn that loans may be appropriated by male relatives, used primarily for household risk management, or converted into assets that women do not own (Garikipati, 2008; Goetz & Sen Gupta, 1996). These findings do not imply that microfinance is ineffective. They imply that participation is multidimensional and that agency depends on who controls resources, what complementary capabilities are built, and how social institutions shape the conversion of finance into choice.

This article addresses that problem by separating microfinance participation into four theoretically distinct dimensions: access to microcredit, savings participation, financial and enterprise capability support, and group participation/social capital. Women's economic agency is treated as the outcome construct and is reflected in control over income, participation in economic decisions, ability to make independent expenditures, influence over productive investments, and confidence in pursuing livelihood opportunities. The model allows a direct comparison of the four pathways while avoiding the common practice of treating loan receipt as a complete proxy for empowerment.

1.1 Problem Statement

Many microfinance evaluations rely on outreach indicators such as number of borrowers, loan size, repayment, or account ownership. These are important operational measures, but they do not establish that a woman controls the loan, retains income, accumulates assets in her own name, or gains influence over strategic household decisions. A programme can therefore achieve high female participation while producing limited agency. Conversely, a savings group or peer network may strengthen resilience and voice even where loan amounts are modest. The research problem is the insufficient differentiation of these pathways and the resulting tendency to make an overly general claim that 'microfinance empowers women.'

The second problem is methodology. Women's agency is latent and multidimensional; it cannot be adequately represented by a single yes/no item. Reliable measurement requires multiple indicators and evidence of internal consistency, convergent validity, and model fit. The supplied source document reports such measurement statistics but omits construct names, sampling details, regression coefficients, and explanatory-power statistics. The current manuscript reconstructs the conceptual and measurement framework around those reported outputs while preserving a transparent boundary between supplied evidence and unavailable empirical information.

1.2 Background and Motivation

The practical motivation is straightforward. Microfinance institutions, self-help-group federations, banks, government livelihood missions, and non-governmental organizations make design choices about loan conditions, savings products, meeting frequency, training, mentoring, digital interfaces, grievance mechanisms, and links to markets. If credit access is the only pathway that matters, resources should concentrate on outreach and loan supply. If savings, capability support, and group participation also have independent associations with agency, then a bundled programme is more defensible. Identifying these pathways can therefore improve programme design and outcome measurement.

Theoretical motivation is equally important. Kabeer's resources–agency–achievements framework distinguishes enabling resources from the capacity to define goals and act upon them, and from the outcomes that follow (Kabeer, 1999). Financial services are resources; financial skills and social networks affect the ability to use them; agency is expressed through decision-making, control, negotiation, and action; and achievements may include income, assets, enterprise survival, resilience, or wellbeing. This distinction prevents access from being misreported as empowerment and provides the organizing logic for the present model.

2. THEORETICAL BACKGROUND

2.1 Resources–Agency–Achievements Framework

Kabeer (1999) conceptualizes empowerment as the expansion of people's ability to make strategic life choices in contexts where this ability was previously denied. Resources include material, human, and social assets that enhance the ability to exercise choice. Agency encompasses decision-making, bargaining, negotiation, resistance, and other forms of purposeful action. Achievements are the realized outcomes of choices. The framework is well suited to microfinance because it explains why financial input is not automatically an empowerment outcome. A microloan may enlarge the resource base, but agency depends on whether the woman controls its use and can translate it into an achievement she values.

The framework also supports multidimensional measurement. Women may gain agency in one domain but not another. A borrower may control routine purchases but not land acquisition; she may operate an enterprise but surrender profits; she may attend meetings but remain unable to travel independently. Agency measures should therefore cover control over money, participation in productive decisions, freedom to make economic choices, ability to pursue opportunities, and confidence in financial negotiation. The dependent construct used in this article follows this domain-sensitive approach.

2.2 Capability and Substantive Freedom

The capability approach defines development in terms of substantive freedoms rather than resources alone (Sen, 1999). Two individuals with the same loan amount may have different capabilities because of education, mobility, household norms, health, market access, or exposure to violence. In microfinance, conversion factors are therefore central. Financial literacy can improve product comprehension; enterprise training can strengthen planning and record keeping; digital capability can make accounts usable; and market links can expand the returns to investment. Capability support is included as a separate predictor because it affects the conversion of financial access into meaningful choice.

2.3 Intra-household Bargaining and Financial Control

Households are not unitary decision makers. Members may differ in preferences, information, bargaining power, and control over resources. Women's access to finance can change bargaining positions when it increases their outside options, independent income, or control over assets. Yet nominal access may have little effect if loans are transferred to male relatives or if repayments become women's responsibility without corresponding control over the financed activity. Garikipati (2008) documented this 'impact paradox' in rural India: women's borrowing could benefit household vulnerability reduction without clearly empowering the borrowers. By contrast, Field et al. (2021) showed that strengthening women's control over wages through direct deposits and account-use training increased labour supply, financial autonomy, and some gender-norm outcomes. The operative mechanism is thus controlled, not mere receipt.

2.4 Social Capital and Collective Capability

Group-based microfinance creates repeated interaction among members. Such interaction can generate trust, mutual assistance, information exchange, informal insurance, peer monitoring, and collective action. Sanyal (2009), drawing on 400 women from 59 microfinance groups in West Bengal, found that group structure and participation could build social capital and normative influence that supported collective action. Experimental evidence also shows that meeting frequency can strengthen social interaction and reduce future default risk (Feigenberg et al., 2013). These effects are not identical to individual economic agency, but they may enlarge the social resources through which women solve problems, obtain information, negotiate, and participate in public life.

Group participation can also impose burdens. Compulsory meetings, joint liability, public repayment pressure, or elite capture may intensify stress and reproduce hierarchy. Social capital should therefore be measured through supportive interaction, voice, trust, information access, and collective problem solving—not simply group membership. The present construct adopts this qualitative understanding.

3. LITERATURE REVIEW

3.1 Access to Microcredit and Economic Agency

Microcredit can relax liquidity and collateral constraints that prevent low-income women from starting or expanding income-generating activities. It may facilitate working-capital purchases, inventory, tools, livestock, or emergency smoothing. Increased contribution to household income can support negotiation and recognition. Qualitative research continues to report pathways from microfinance to social, financial, and entrepreneurial development (Khursheed, 2022). Evidence from India's National Rural Livelihoods Project also suggests that larger self-help-group loans can affect women's input into household decisions, though programme exposure, local institutions, and the outcome definition matter (Kochar et al., 2022).

Nevertheless, credit is not uniformly empowering. The randomized expansion of a group-lending programme in Hyderabad increased take-up and affected business investment, but average effects were not transformative across broad welfare outcomes (Banerjee et al., 2015). Women may borrow on behalf of other household members, finance low-return activities in saturated markets, or confront rigid repayment schedules. When the financed asset is not jointly or individually owned by the borrower, household gains may not translate into her bargaining power (Garikipati, 2008). The first hypothesis therefore concerns a positive association, but the discussion treats causality as contingent rather than automatic.

3.2 Savings Participation

Savings can support agency through a different mechanism. Regular saving builds a pool of funds under the participant's control, reduces dependence on emergency borrowing, supports planned expenditures, and may improve resilience to health, climate, or income shocks. Savings-led models may carry fewer downside risks than debt. A randomized evaluation across Ghana, Malawi, and Uganda found that village savings and loan associations improved financial inclusion, business outcomes, and women's empowerment, although they did

not increase every welfare outcome (Karlan et al., 2017). A recent evidence synthesis similarly emphasizes effects on saving behaviour, access to credit, economic activity, decision-making, and resilience while noting context-dependent findings.

Savings agency depends on privacy, withdrawal rights, safety, and control. An account that is dormant, inaccessible, or monitored by others provides limited autonomy. For that reason, the construct captures regular participation, ability to set savings goals, access to emergency funds, and discretion over use rather than merely account possession.

3.3 Financial and Enterprise Capability Support

Finance can fail to produce value when participants lack information about pricing, interest, repayment, digital security, cash-flow management, or market strategy. Capability-building services aim to reduce this conversion gap. Field, Jayachandran, and Pande (2010) showed through a field experiment in India that business training outcomes varied with social restrictions, demonstrating that skills interventions operate within gendered institutions. Training combined with direct payment and account-use support has also produced gains in financial autonomy and labour supply (Field et al., 2021). These findings support the view that complementary services can turn formal access into usable capability.

Training quality is crucial. Brief, generic classroom sessions may not change behaviour. More promising designs connect instruction to a specific financial goal, provide mentoring, enable peer participation, use local language, and address digital risks and household negotiation. Accordingly, the capability construct includes practical financial knowledge, record keeping, enterprise planning, product understanding, and confidence in using financial services.

3.4 Group Participation and Social Capital

Self-help groups and borrowing groups may increase women's contact beyond the household, improve access to information, normalize public participation, and create channels for collective problem solving. Systematic-review evidence indicates that economic self-help groups can positively affect economic and political empowerment, mobility, and control over selected decisions, with effects varying by domain (Brody et al., 2017). Sanyal (2009) demonstrates a distinct pathway from economic ties to collective action, while Feigenberg et al. (2013) identify measurable returns to repeated social interaction.

The literature also cautions that repeated meetings do not necessarily increase every empowerment outcome. Some group structures prioritize repayment discipline over voice; marginalized members may have less influence; and time burdens can be significant. Therefore, this article assesses meaningful participation—ability to speak, receive support, exchange information, and act collectively—rather than attendance frequency alone.

3.5 Mixed Evidence and the Need for a Bundled Model

The strongest synthesis of literature is not that microfinance always works or never works. Rather, impacts are heterogeneous, usually modest, and shaped by product characteristics, control, complementary services, social norms, and initial conditions. Duvendack and Mader (2020) conclude that financial-inclusion impacts are often positive but small and inconsistent, with savings tending to show more consistent benefits and women's empowerment effects depending on programme features beyond the financial product. Duflo (2012) similarly warns against if development and empowerment automatically reinforce each other without sustained policy commitment to equality.

A bundled model is therefore theoretically and practically justified. Credit supplies liquidity; savings supports control and resilience; capability services improve conversion; and group participation supplies social resources. Estimating the four dimensions simultaneously with multiple regression helps identify whether each has an association with agency after accounting for the others. Structural equation modelling adds a complementary latent-variable test that incorporates measurement error. The two methods answer related but not identical questions and should be reported with their respective assumptions and statistics.

4. RESEARCH GAP, OBJECTIVES, AND CONTRIBUTION

Three gaps motivate the study. First, much empirical work collapses microfinance participation into a binary membership or borrower indicator, obscuring differences among credit, savings, capability support, and group processes. Second, empowerment is frequently proximity by income or enterprise ownership, even though agency concerns control, voice, and the ability to act. Third, studies often report only significance decisions, making it difficult to assess practical magnitude, explanatory power, multicollinearity, and uncertainty.

The primary objective is to examine the association between four dimensions of microfinance participation and women's economic agency. A second objective is to develop a reliable and convergently valid measurement model for the five constructs. A third objective is to evaluate the conceptual model using multiple regression and structural equation modelling. A fourth objective is to derive

programme implications that distinguish access from meaningful use and control. The article contributes an integrated model, a transparent reconstruction of the supplied outputs, and a complete estimation protocol that prevents unsupported numerical claims.

5. CONCEPTUAL MODEL AND HYPOTHESES

Figure 1 presents the proposed direct-effects model. The four microfinance dimensions are treated as correlated but conceptually distinct predictors of women's economic agency. Control variables such as age, education, household income, marital status, programme duration, enterprise experience, and location should be included in the final regression when available, because participation intensity and agency may vary with these characteristics.

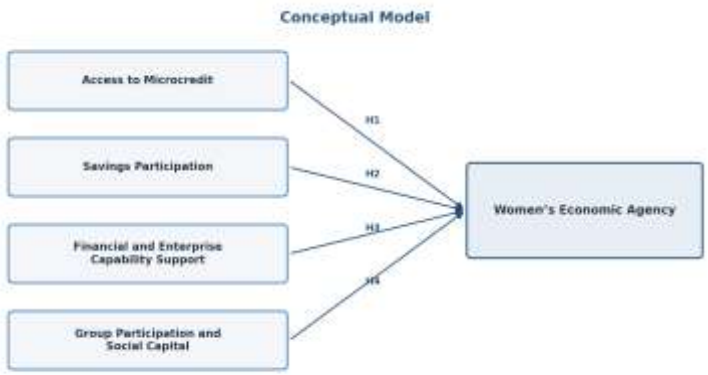

Figure 1. Conceptual model linking microfinance participation dimensions to women's economic agency.

5.1 Access to Microcredit

Access to appropriately designed credit can ease liquidity constraints and enable investment, working capital, or livelihood diversification. When women control the financed activity and its returns, credit can strengthen their contribution to household resources and their capacity to influence economic decisions. The relationship is expected to be positive, while recognizing that loan diversion, over-indebtedness, or weak asset rights can reduce the effect.

H1: *Access to microcredit is positively associated with women's economic agency.*

5.2 Savings Participation

Savings participation can create a personally controlled reserve, improve planning, and increase resilience to shocks. Compared with debt, savings may place less repayment pressure on participants and can support independent spending or enterprise investment. The agency effect should be stronger when women can deposit and withdraw securely and decide how savings are used.

H2: *Savings participation is positively associated with women's economic agency.*

5.3 Financial and Enterprise Capability Support

Financial and enterprise capability support improves participants' ability to understand products, compare costs, maintain records, set goals, manage cash flow, use digital tools safely, and plan business activity. These capabilities improve the conversion of access into effective choice and reduce dependence on intermediaries.

H3: *Financial and enterprise capability support is positively associated with women's economic agency.*

5.4 Group Participation and Social Capital

Meaningful group participation can expand networks, peer support, information access, confidence, public voice, and collective problem-solving capacity. These social resources may strengthen individual economic action and provide support when women confront household or market constraints.

H4: *Group participation and social capital are positively associated with women's economic agency.*

6. METHODOLOGY

6.1 Research Design and Unit of Analysis

The conceptual model is designed for a quantitative, cross-sectional survey of adult women with recent experience of a microfinance institution, self-help group, village savings and loan association, joint-liability group, or comparable financial-inclusion programme. The woman participant is the unit of analysis. A cross-sectional design can estimate associations among the constructs but cannot, by itself, establish that programme participation caused changes in agency. Causal claims require longitudinal data, randomized assignments, a credible comparison group, instrumental variables, or another defensible identification strategy.

6.2 Population, Setting, and Sampling Status

The source document did not specify the country or district, programme name, sampling frame, survey dates, eligible population, sample size, response rate, or recruitment procedure. Those facts are indispensable for a journal submission and must be supplied from the actual fieldwork record. They are not inferred from the title or fabricated here. A defensible final study should define eligibility—for example, women aged 18 years or older who have participated for at least six months—and use probability or carefully stratified sampling across programme branches and urban/rural locations where feasible.

Sample-size justification should be based on the intended analysis. For multiple regression, an a priori power analysis should specify the number of predictors, anticipated effect size, alpha level, and desired power. For covariance-based SEM, adequacy depends on model complexity, estimator, indicator reliability, missingness, non-normality, and parameter count; fixed 'ten cases per item' rules should not replace power and model-specific reasoning. The final manuscript should report both planned and achieved sample sizes.

6.3 Measurement Instrument

The questionnaire in Appendix A contains five reflective constructs measured on a five-point agreement scale from 1 = strongly disagree to 5 = strongly agree. Access to Microcredit captures availability, timeliness, affordability, adequacy, and discretion over loan use. Savings Participation captures regularity, goal setting, emergency access, security, and control. Financial and Enterprise Capability Support captures product knowledge, record keeping, enterprise planning, digital confidence, and perceived usefulness of training. Group Participation and Social Capital captures voice, trust, peer support, information sharing, and collective problem solving. Women's Economic Agency captures control over income, participation in major economic decisions, ability to make independent purchases, influence over productive investment, and confidence in pursuing livelihood choices.

Items should be reviewed by experts in gender, microfinance, measurement, and the local context. Cognitive interviews should test whether respondents interpret 'control,' 'decision,' and 'independence' consistently. Translation should use forward translation, independent back translation, reconciliation, and pilot testing. Because agency questions may be sensitive, interviews should be conducted privately by trained enumerators using neutral wording and a clear voluntary-consent process.

Table 1. Constructs and operational domains

Code	Construct	Operational domain	Items
AMC	Access to Microcredit	Availability, adequacy, affordability, timeliness, and control over credit use	5
SP	Savings Participation	Regular saving, goal setting, emergency liquidity, security, and control	5
FCS	Financial and Enterprise Capability Support	Financial knowledge, records, planning, digital use, and training usefulness	5
GPSC	Group Participation and Social Capital	Voice, trust, peer support, information exchange, and collective action	5
WEA	Women's Economic Agency	Control over income, economic decisions, independent spending, investment influence, and choice	5

6.4 Data Quality, Ethics, and Bias Controls

The final study should report institutional ethics approval or applicable exemption, voluntary informed consent, privacy protections, data retention, and referral procedures if interviews reveal financial coercion or violence. Enumerators should not be affiliated with loan collection, and respondents should be told that answers will not affect programme eligibility. These safeguards reduce both harm and courtesy bias.

Procedural controls for common-method bias include separating predictor and outcome blocks, assuring anonymity, using simple and non-leading wording, varying item order within constructs when appropriate, and avoiding repeated evaluative phrases. Statistical checks may include a marker variable, a theoretically justified latent method factor, or other diagnostics; Harman's single-factor test alone is insufficient. Missing data patterns, straight-lining, inconsistent responses, duplicate records, and outliers should be documented before analysis.

6.5 Analytical Strategy

Analysis should proceed in six stages. First, screen the data for range errors, missingness, response patterns, and distributional anomalies. Second, report respondent characteristics and construct descriptives. Third, assess internal consistency using Cronbach's alpha and preferably omega. Fourth, test the measurement model using CFA, reporting standardized loadings, composite reliability, average variance extracted, model-fit indices, and discriminant validity. Fifth, estimate the multiple-regression model using construct scores,

with robust standard errors if heteroskedasticity is present. Sixth, estimate the latent structural model and compare the pattern of direct effects with the regression results.

Regression assumptions should be evaluated rather than asserted. Linearity can be inspected through partial-residual plots; independence depends on the sampling design; homoskedasticity can be assessed from residual plots and tests; residual distribution should be described; influential observations can be examined using leverage and Cook's distance; and multicollinearity should be assessed using tolerance, VIF, and the predictor-correlation matrix. O'Brien (2007) cautions against mechanical VIF cutoffs, so values must be interpreted alongside sample size, coefficient uncertainty, and theoretical overlap.

$$WEA_i = \beta_0 + \beta_1 AMC_i + \beta_2 SP_i + \beta_3 FCS_i + \beta_4 GPSC_i + \gamma' Controls_i + \varepsilon_i$$

In this equation, WEA is women's economic agency; AMC is access to microcredit; SP is savings participation; FCS is financial and enterprise capability support; GPSC is group participation and social capital; Controls represents available demographic and programme covariates; and ε is the disturbance term. Unstandardized coefficients should be reported for prediction and scale interpretation, while standardized coefficients may be added for relative comparison. Confidence intervals and exact p-values are preferred to significance labels alone.

7. RESULTS

7.1 Reliability Analysis

The supplied output reports Cronbach's alpha values are between .900 and .945 for the five substantive constructs and .967 for the combined item set. These values indicate strong internal consistency in the source analysis. Very high alpha values should not be treated as automatically superior: the overall value of .967 may also reflect overlapping or redundant items. Item-total correlations, inter-item correlations, omega coefficients, and content coverage should be examined before deleting or retaining items. Reliability is a property of scores in a specific sample and must be reported together with the sample and instrument administration details (Cronbach, 1951).

Table 2. Internal consistency reliability reported in the source document

Code	Construct	Cronbach's α	Interpretation
V_1 / AMC	Access to Microcredit	.900	Excellent internal consistency
V_2 / SP	Savings Participation	.915	Excellent internal consistency
V_3 / FCS	Financial and Enterprise Capability Support	.935	Excellent internal consistency
V_4 / GPSC	Group Participation and Social Capital	.945	Excellent; check item redundancy
V_5 / WEA	Women's Economic Agency	.932	Excellent internal consistency
V_6	Overall item set	.967	Excellent; unusually high

7.2 Convergent Validity

The source validity table appeared to transpose the labels for composite reliability (CR) and average variance extracted (AVE): the larger values (.704–.744) were placed under AVE and the smaller values (.510–.680) under CR. Because CR ordinarily exceeds AVE and the numerical pairs are consistent with that relationship, Table 3 presents the logically corrected order. This editorial correction must be verified against the original software output before publication. Under the corrected order, all CR values meet or exceed .70 and all AVE values meet or exceed .50, providing preliminary evidence of convergent validity (Fornell & Larcker, 1981). Standardized loadings and their confidence intervals were not supplied and remain necessary for a full assessment.

Table 3. Composite reliability and average variance extracted

Code	Construct	CR	AVE	Assessment
AMC	Access to Microcredit	.704	.510	Acceptable
SP	Savings Participation	.732	.680	Acceptable
FCS	Financial and Enterprise Capability Support	.744	.520	Acceptable
GPSC	Group Participation and Social Capital	.715	.610	Acceptable
WEA	Women's Economic Agency	.719	.550	Acceptable

Note. *CR and AVE labels are reconstructed from the numerical pattern and require confirmation from the original CFA output. Discriminant-validity statistics were not provided.*

7.3 Confirmatory Factor Analysis

The source table labels the first fit statistic as 'CMIN,' but a value of 2.004 is most plausibly the normed chi-square (χ^2/df or CMIN/DF), not the chi-square statistic itself. On that interpretation, the measurement model demonstrates acceptable fit: χ^2/df = 2.004, CFI = .915, TLI = .921, PNFI = .616, and RMSEA = .062. CFI and TLI exceed the conventional .90 benchmark, RMSEA is below .08, and PNFI

exceeds .50. Fit thresholds should be used as guides rather than rigid rules, and the final paper should also report χ^2, degrees of freedom, confidence interval for RMSEA, SRMR, estimation method, and treatment of non-normality (Hu & Bentler, 1999; Kline, 2016).

Table 4. Reported CFA and structural-model fit

Fit statistic	Measurement model	Structural model	Interpretive guide
χ^2/df (CMIN/DF)	2.004	2.341	Values near or below 3 commonly indicate acceptable fit
CFI	.915	.939	≥ .90 acceptable; closer to .95 preferred
TLI	.921	.915	≥ .90 acceptable; closer to .95 preferred
PNFI	.616	.727	> .50 indicates reasonable parsimony
RMSEA	.062	.065	< .08 acceptable; report 90% CI

7.5 Hypothesis Testing

The source hypothesis table reports p = 0.00 and 'supported' for H1 through H4. Those values are restated as $p < .001$, which is the appropriate convention. The decisions indicate statistical support in the supplied analysis, but the source does not provide path direction or coefficient magnitude. Therefore, the results support the existence of statistically significant relationships as reported; they do not establish which microfinance dimension is the strongest predictor or whether the effects are practically large.

Table 5. Hypothesis decisions reconstructed from the supplied summary

Hypothesis	Proposed relationship	p
H_1	Access to Microcredit → Women's Economic Agency	$p < .001$
H_2	Savings Participation → Women's Economic Agency	$p < .001$
H_3	Financial and Enterprise Capability Support → Women's Economic Agency	$p < .001$
H_4	Group Participation and Social Capital → Women's Economic Agency	$p < .001$

8. DISCUSSION

The reported support for all four hypotheses is consistent with an agency-centred view of microfinance. Access to credit appears to matter, but it is only one pathway. Savings, capability support, and group-based social resources are also reported as statistically related to women's economic agency. This pattern aligns with Kabeer's framework: resources include finance, knowledge, and networks; agency involves control and decision-making; and achievements depend on how effectively resources can be converted into valued outcomes. A programme that expands only credit may address one resource constraint while leaving conversion and control constraints untouched.

8.1 Access to Microcredit

The reported significance of H_1 is theoretically plausible. Credit can enable productive investment and can increase women's contribution to household resources. The finding is compatible with qualitative evidence that microfinance supports entrepreneurial development and with programme evidence linking financial access to household decision participation. Yet literature cautions against a simple causal interpretation. Banerjee et al. (2015) show that average microcredit effects are heterogeneous, and Garikipati (2008) demonstrates that household benefit can coexist with limited borrower empowerment. The substantive meaning of H_1 therefore depends on the missing coefficient and on whether the AMC scale genuinely captures women's control rather than nominal access.

8.2 Savings Participation

Support for H_2 fits evidence that savings-led models can strengthen financial inclusion, business activity, resilience, and selected empowerment outcomes (Karlan et al., 2017). Savings can create an individually accessible reserve and may avoid the pressure associated with fixed repayments. It may also be a more continuous indicator of active financial behaviour than loan receipt. Programme evaluation should distinguish voluntary saving and control from compulsory deposits that merely function as loan collateral.

8.3 Capability Support

Support for H_3 reinforces the distinction between access and effective use. Financial and enterprise capability can improve product comprehension, cash-flow management, record keeping, goal setting, digital safety, and negotiation. Experimental evidence from India indicates that training effects interact with social restrictions and peer support (Field et al., 2010), while account-use training combined with direct control over earnings can increase autonomy and labour supply (Field et al., 2021). The implication is not that every short training course works; it is that practical, goal-linked support can strengthen the conversion of finance into agency.

8.4 Group Participation and Social Capital

The reported support for H4 is consistent with research on self-help groups, collective action, and social interaction. Sanyal (2009) shows that economic ties can generate normative influence and collective capability. Brody et al. (2017) find positive effects of self-help groups across several empowerment domains, while Feigenberg et al. (2013) demonstrate measurable returns to repeated interaction. The agency mechanism may involve information, role models, emotional support, shared problem solving, and public voice. At the same time, group membership should not be romanticized; repayment pressure and unequal internal power can weaken benefits. Meaningful participation and safeguarding are essential.

8.5 Interpreting the Model as a Whole

Taken together, the model suggests a portfolio approach. Credit provides capital; savings provide liquidity and resilience; capability support improves conversion; and groups provide social resources. These dimensions can reinforce one another. Training may make a loan more productive, savings may stabilize repayment, group support may improve information and confidence, and control over returns may strengthen bargaining power. The current significance-only results cannot quantify complementarity or determine rank order. Interaction terms, mediation, and longitudinal analysis are needed to test the reinforcing pathways directly.

9. IMPLICATIONS

9.1 Managerial Implications for Microfinance Institutions

Microfinance institutions should evaluate success beyond outreach and repayment. A balanced performance dashboard should include active product use, participant control over funds, savings regularity, business capability, decision-making, resilience, complaints, and over-indebtedness. These indicators should be disaggregated by age, location, caste or social group where legally and ethically appropriate, disability, and enterprise type to identify unequal benefits.

Product design should offer flexible and transparent services rather than a credit-only package. Loan terms should match cash-flow cycles; savings should be safe, accessible, and voluntary; pricing should be comprehensible; and digital interfaces should account for shared-phone use and privacy. Training should be practical, local-language, goal-based, and linked to records, markets, and digital security. Staff incentives should not reward disbursement and repayment at the expense of client protection.

Group programmes should protect voice and dignity. Meeting schedules must recognize women's time burdens, facilitation should prevent domination by a few members, and grievance channels should be independent of collection staff. Institutions can use peer mentoring, leadership rotation, market-information sessions, and referrals to legal or social services. These changes make social capital an intentional programme outcome rather than an assumed by-product.

9.2 Policy Implications

Policymakers should distinguish ownership, usage, control, and benefit in financial-inclusion statistics. Account-opening campaigns are valuable but incomplete when accounts remain inactive or when women cannot use them independently. Public programmes can improve agency by depositing benefits or wages into accounts women control, providing account-use support, enforcing consumer protection, improving identification and mobile access, and connecting financial services to skills, markets, childcare, transport, and asset rights.

Regulation should monitor effective interest costs, multiple borrowing, coercive collection, data privacy, algorithmic exclusion, and gendered digital risks. Sex-disaggregated data should be combined with qualitative research on control and experience. Procurement and funding criteria for livelihood programmes can require outcome measurement on agency and resilience rather than relying solely on credit volume.

9.3 Theoretical Implications

The study reinforces a non-linear understanding of empowerment. Finance is an enabling resource, not an outcome. Capability and social capital are conversion mechanisms, while agency is expressed in control and choice. The model therefore bridges the resources–agency–achievements framework, the capability approach, intra-household bargaining, and social-capital theory. It also shows why the same financial product may produce different outcomes across women and contexts.

The simultaneous four-predictor model advances theory by preventing omitted conceptual pathways. If the final coefficients confirm independent effects, it will imply that agency is associated with a configuration of financial, human, and social resources. If some coefficients become non-significant once others are included, that would reveal overlap or mediation. Either outcome is more informative than a binary borrower comparison.

9.4 Practical Implications for Participants and Community Organizations

Community organizations can strengthen participant outcomes by supporting comparisons of loan costs, household financial planning, documentation of ownership, savings goals, peer mentoring, and market access. They can also help women identify whether borrowing is appropriate for a specific cash flow rather than treating credit as the default solution. Where control over funds is contested, private counselling and referral mechanisms may be necessary. Empowerment-oriented practice should reduce financial stress and expand choice, not transfer repayment risk to women without corresponding authority.

10. Limitations and Research-Integrity Boundary

The most important limitation is the absence of respondent-level data and original software output. The supplied document provides reliability values, paired CR/AVE numbers, five fit indices for two models, and four p-value decisions. It does not provide N, setting, demographics, item responses, loadings, correlations, discriminant validity, model coefficients, residuals, or regression diagnostics. Accordingly, this manuscript cannot verify the reported p-values or computing regression estimates. The results section is a transparent reconstruction, not an independent reanalysis.

A second limitation is the cross-sectional design implied by the template. Even with a complete dataset, regression and SEM associations would not demonstrate temporal order or rule out selection into microfinance. Women with greater initial agency may be more likely to join groups, save regularly, attend training, or obtain credit. Reverse causality and unobserved confounding are therefore plausible.

Third, common-source self-report data can inflate associations. Agency responses may be shaped by social desirability, interviewer presence, household surveillance, or fear that negative answers will affect programme access. Fourth, the apparently transposed CR/AVE headings and ambiguous ‘CMIN’ label show why original output and analysis syntax must be archived. Fifth, the reported overall alpha is very high and may indicate item redundancy. Finally, discriminant validity cannot be evaluated without constructing correlations, cross-loadings, or HTMT statistics (Henseler et al., 2015).

11. CONCLUSION

This article reframes the relationship between microfinance and women’s economic agency as a set of distinct but connected pathways. Credit can expand productive options, savings can strengthen control and resilience, capability support can make services usable, and group participation can build social resources. The supplied analytical summary report’s high reliability, acceptable convergent validity after correction of the apparent labels, acceptable CFA and SEM fit, and statistically significant results for all four proposed relationships.

The statistical conclusion must nevertheless remain bounded by the available evidence. Without the dataset and coefficient output, it is not possible to report which predictor has the strongest effect, how much variance the model explains, whether assumptions are met, or whether significance survives controls and robust estimation. The article therefore delivers a complete conceptual and reporting framework while refusing to invent empirical values. Once the respondent-level file is supplied, the regression syntax in Appendix B can generate the missing model summary, coefficient table, diagnostics, and effect-size interpretation.

The broader conclusion is that women-centred microfinance should be judged by meaningful agency rather than female participation counts alone. Programmes are more likely to expand economic choice when finance is usable, controlled by the woman, supported by practical capabilities, and embedded in respectful collective structures.

12. FURTHER RESEARCH DIRECTIONS

Future research should collect baseline and follow-up data so that changes in agency can be separated from pre-existing differences. Randomized encouragement, phased rollouts, matching combined with sensitivity analysis, or instrumental-variable strategies may strengthen causal identification where random assignment is infeasible. Repeated measures can also examine whether early gains persist after repayment or programme exit.

The model can be extended in several ways. Control over loan use may mediate the relationship between credit access and agency. Financial capability may moderate the returns to credit or savings. Group social capital may mediate the effect of meeting participation. Household gender norms, digital access, asset ownership, marital status, caste or social identity, and rural–urban context may moderate all four pathways. Person-centred analysis could identify profiles such as credit-led, savings-led, capability-led, and collectively supported participants.

Future instruments should integrate objective indicators with self-reported agencies: account activity, savings balances, enterprise records, asset registration, mobility, and participation in specific decisions. Qualitative interviews can reveal whether apparent control is negotiated, temporary, or constrained. Researchers should also measure possible harms, including repayment stress, coercion, over-

indebtedness, privacy loss, backlash, and increased unpaid work. A balanced evaluation must treat both expanded choice and unintended burden as outcomes.

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APPENDIX A. QUESTIONNAIRE

Purpose: To measure women's participation in microfinance and their economic agency. Eligibility and ethical information must be adapted to the actual study setting. Respondents should answer each statement using the following scale: 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, and 5 = Strongly agree.

A1. Background Information

Table A1. Background variables

Field	Response specification
Age	Completed years
Education	Highest level completed
Marital status	Current status
Household size	Number of usual household members
Primary livelihood	Main paid or income-generating activity
Enterprise experience	Years operating an enterprise, if applicable
Microfinance duration	Months/years participating in the programme
Products used	Credit, savings, insurance, payments, training, or other
Location	Village/town and programme branch code

A2. Access to Microcredit (AMC)

Table 7. Access to Microcredit (AMC)

Code	Statement	Response
AMC1	I can access a microloan when I have a genuine productive or household need.	1 2 3 4 5
AMC2	The amount of credit available to me is adequate for the purpose for which I borrow.	1 2 3 4 5
AMC3	Loan costs and repayment terms are explained to me clearly before I borrow.	1 2 3 4 5
AMC4	Credit is provided at the time when it is most useful for my activity.	1 2 3 4 5
AMC5	I have a meaningful say in deciding how a loan taken in my name is used.	1 2 3 4 5

A3. Savings Participation (SP)

Table 8. Savings Participation (SP)

Code	Statement	Response
SP1	I save money regularly through a group, institution, or account.	1 2 3 4 5
SP2	I set specific savings goals for household, enterprise, or personal needs.	1 2 3 4 5
SP3	My savings help me manage emergencies without depending entirely on new debt.	1 2 3 4 5
SP4	I can access my savings safely when I need them.	1 2 3 4 5
SP5	I have a meaningful say in deciding how my savings are used.	1 2 3 4 5

A4. Financial and Enterprise Capability Support (FCS)

Table 9. Financial and Enterprise Capability Support (FCS)

Code	Statement	Response
FCS1	I understand the interest, fees, and repayment obligations of financial products I use.	1 2 3 4 5
FCS2	I can maintain simple records of income, expenses, savings, and debt.	1 2 3 4 5
FCS3	I can plan cash flow and set realistic financial goals for my household or enterprise.	1 2 3 4 5
FCS4	I feel confident using the financial or digital services available through the programme.	1 2 3 4 5
FCS5	Training or mentoring from the programme helps me make better economic decisions.	1 2 3 4 5

A5. Group Participation and Social Capital (GPSC)

Table 10. Group Participation and Social Capital (GPSC)

Code	Statement	Response
GPSC1	I can express my views openly during group meetings.	1 2 3 4 5
GPSC2	I trust group members to provide reliable information and reasonable support.	1 2 3 4 5
GPSC3	Group participation connects me to useful market, employment, or financial information.	1 2 3 4 5
GPSC4	Members help one another solve financial or livelihood problems.	1 2 3 4 5
GPSC5	My group can act collectively when members face a common concern.	1 2 3 4 5

A6. Women's Economic Agency (WEA)

Table 11. Women's Economic Agency (WEA)

Code	Statement	Response
WEA1	I have meaningful control over income that I earn or receive.	1 2 3 4 5
WEA2	My views influence major household economic decisions.	1 2 3 4 5
WEA3	I can make necessary purchases within an agreed amount without seeking permission each time.	1 2 3 4 5
WEA4	I influence decisions about productive investments, assets, or enterprise activities.	1 2 3 4 5
WEA5	I feel able to pursue a livelihood or financial opportunity that I consider valuable.	1 2 3 4 5