Prithvi Journal of Research and Innovation
[A Peer-Reviewed, Open Access Multidisciplinary Bilingual Journal; Indexed in NepJOL]
ISSN 2705-4888 [Print]; ISSN 2705-4896 [Online]; JPPS Star-Rated Journal
Volume 7; 15 December 2025; pp. 77-93
eJournal Site: http://ejournals.pncampus.edu.np/ejournals/pjri/

Research Article

Assessing the Social Impact of Microfinance in Kaski District, Nepal: Mediating Role of Financial Literacy

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Article History:
Submitted 10 October 2025
Reviewed 04 November 2025
Revised 11 November 2025
Accepted 02 December 2025

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Article DOI:
https://doi.org/10.3126/pjri.v7i1.87676

Publisher:
Centre for Research and Innovation
Prithvi Narayan Campus
Tribhuvan University, Pokhara, Nepal
[Accredited by UGC, Nepal]

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ABSTRACT
This study examines the mediating role of financial literacy between an access to microfinance and its social outcomes, particularly focused on education, healthcare awareness, and social capital formation. This study was conducted in the Annapurna rural municipality and Pokhara Metropolitan City of Kaski District among 165 microfinance beneficiaries. Quantitative data were collected through a structured questionnaire on 5-point Likert scale from the selected respondents. Descriptive, explanatory and cross-sectional research designs were employed to analyze the direct effect and indirect effect of financial literacy as a mediating variable. The study results show that access to microfinance directs impacts social capital formation but has no direct effect on education and healthcare awareness. Financial literacy partially mediates the relationship between access to microfinance and social outcomes. The findings conclude that integrating financial literacy into microfinance services is essential to achieve social goal of microfinance.

KEYWORDS: Financial literacy, education, health check-ups, microfinance, social capital formation

INTRODUCTION
Microfinance is generally accepted as a strong tool for socio-economic transformation. Today's microfinance is not only limited to tackle poverty, this service is considered as an instrument for social development of disadvantage and marginalized group. According to Halouni (2025) Microfinance Institutions (MFIs) serve over 140 million clients worldwide, with a market value exceeding $250 billion. Microfinance sector in Nepal has

experienced significant growth in different aspects. According to Nepal Rastra Bank (2025), there are 54 licensed MFIs in Nepal. They collectively serve over 7.3 million members. These institutions have mobilized more than Rs 150 billion in savings and disbursed loans exceeding Rs. 300 billion. This sector also contributes in the nation's employment generation, employing 20,000 staff through more than 3,000 branches. Increasing trend of saving mobilization, loan disbursement, and increasing number of members' participation in microfinance program underscores the sector's increasing role in improving financial inclusion, empowerment and social development across Nepal.

Despite challenges in measuring social performance uniformly, the sector continues to evolve through digital innovations and policy support, positioning MFIs as key agents of sustainable development across diverse regions (Van Rooyen et al., 2012). Initially focused on microcredit, microfinance now consists of a broader range of services such as micro-savings, micro-insurance, money transfers, and even marketing support for clients' products (Asian Development Bank, 2021; Bos & Millone, 2015). This expansion reflects a shift from purely financial services to a dual mission of financial sustainability and social outreach. MFIs are increasingly recognized not only for their economic contributions but also for their role in improving education, healthcare access, and community engagement (Leatherman et al., 2012; Wydick, 2002).

The social outcomes of microfinance consist of poverty reduction, employment creation, members' empowerment and social inclusion (De Koker & Jentzsch, 2013). Microfinance services provide financial services to economically active but marginalized populations to improve living standards, create additional assets and invest in education and healthcare (Appah et al., 2012; Imai & Azam, 2012). Many studies have shown that participation in microfinance is associated with better nutrition, higher consumption level and improved standards of living (Kaboski & Townsend, 2012; Nogueira et al., 2020).

Studies have also shown that microfinance plays substantial role in empowering women financially as well as socially. Female are given priorities by MFIs. Microfinance also plays a critical role in empowering women. Women are given prioritize in microfinance programs due to their higher repayment rates and their tendency to invest in family welfare, particularly education and healthcare which is the impact of microfinance on social development (Aggarwal et al., 2015; Croson & Buchan, 1999). Other studies also confirm that microfinance contributes to women's psychosocial well-being, decision-making power, and socio-economic development (Hassan & Saleem, 2017; Samer et al., 2015; Sinha et al., 2012).

In low and middle income countries, Microfinance has been combined with social programs, including group-based health education and vocational training. A study conducted in Kenya demonstrated that aligning microfinance with health education significantly improved maternal and child health outcomes (Maldonado et al., 2020). Likewise, some studies revealed in Guatemala and Indonesia also verified that microfinance has been linked to increased school enrollment and improved child health (Deloach & Lamanna, 2011; Wydick, 2002). Few research demonstrated that MFIs are criticize due to high interest rates, over-indebtedness, and limited impact on poverty reduction (Cull et al., 2009; Duvendack et al., 2011). MFIs have raised questions because of their prioritisation in financial goals over social goals (Hermes et al., 2011; Morduch, 2000). Despites ongoing debates, many empirical studies confirm that microfinance foster for inclusive development, its social outcome is systematically monitored and assessed

(Morduch & Ogden, 2019; Sierra et al., 2020).

Based on the background of the context, the study is significant to analyze the influence of microfinance on education, healthcare awareness, and social capital formation. This study emphasizes the mediating effect of financial literacy in the relationship between access to microfinance and three dimensions of social outcomes.

Microfinance in Nepal is considered as a valuable tool in expanding financial access to marginalised persons specially women and rural households who are not banked formally through financial institutions. Despite its widespread scope, Microfinance sector is currently facing a crisis of trust and perceived effectiveness. As of 2025, Nepal Rastra Bank (NRB) reports that microfinance institutions jointly invested of NPR 447.91 billion to their 4.5 million borrowers (Nepal Rastra Bank, 2025). Yet, MFIs in Nepal are criticized for their focus only on credit services, neglecting its broader social mission.

In recent days, increasing trend of resistance in microfinance activities in communities and conflicts between MFIs and their members reflects the members' dissatisfaction with microfinance services. Concerns like high interest rates, forceful recovery policy and borrowers' over-indebtedness indicate that MFIs in Nepal concentrated on financial goals rather than social goals. Nepalese MFIs have adopted a minimalist approach, prioritizing financial transactions over their broader social mission (Dhungana, 2023; NRB, 2023). NRB's special report also pointed out that while MFIs have contributed to financial inclusion, their social impact remains limited and uneven (NRB, 2023). NRB has taken corrective action by introduce policy reform such as interest rate caps to protect borrowers and improved supervision. However, experts argue that these reforms are still insufficient. MFIs must be complemented by a shift toward an integrated microfinance model, that combines credit with non-financial services like health education, financial literacy, entrepreneurship training, and community engagement (Leatherman et al., 2012; NRB, 2023). These concerns emphasize the need for new research that evaluates the actual social outcomes of microfinance participation. Hence, present study tries to investigate whether microfinance borrowers in Kaski District experience measurable improvements in their children's education, healthcare, and social involvement in the mediation role of financial literacy. The study seeks to respond to the following research questions:

RQ1: What is the direct effect of access to microfinance on access to education, healthcare awareness and social capital formation among microfinance members in Kaski District?

RQ2: Does financial literacy mediate the relationship between access to microfinance and social outcomes specially on (access to education, healthcare awareness and social capital formation) in Kaski District?

Based on the research literature review, formulated research questions and study objectives the following hypotheses are proposed:

H1: There is a significant relationship between access to microfinance and social outcomes.

H1a: There is a significant relationship between access to microfinance and Financial literacy.

H1b: There is a significant relationship between access to microfinance and access to education.

H1c: There is a significant relationship between access to microfinance and healthcare awareness.

H1d: There is a significant relationship between access to microfinance and capital formation.

H2: Financial literacy significantly mediates the relationship between access to microfinance and social

outcomes.

H2a: Financial literacy significantly mediates the relationship between access to microfinance and access to education.

H2b: Financial literacy significantly mediates the relationship between access to microfinance and healthcare awareness.

H2c: Financial literacy significantly mediates the relationship between access to microfinance and social capital formation.

REVIEW OF LITERATURE

Microfinance is widely accepted as a common tool to reduce poverty. It enhances financial inclusion and promotes socio-economic development of beneficiaries. Microfinance serves marginalized and unbanked people. Access to credit is the primary function of microfinance through formal financial institutions. Armendáriz and Morduch (2010) emphasize its dual missions, social welfare and financial sustainability. This duality is further investigated by Morduch, who found a split between the poverty-focused and financially self-sufficient models of MFIs (Morduch, 2000).

Empirical studies show mixed results; however, most of the studies have shown positive outcomes in the literature. For instance, the study conducted by Imai and Azam (2012) by using panel data, found that microfinance significantly reduces poverty. Samer et al. (2015) present findings of Malaysia that align with the study. However, Van Rooyen et al., (2012), found mixed results, their study suggests that contextual factors like governance, infrastructure and social norms play dominant roles. Appah et al. (2012) also stress the importance of institutional support and policy alignment to reduce poverty in Nigerial.

Women's empowerment is a common theme in the microfinance literature. The social trust significantly impacts lending to women in the joint liability model of microfinance (Aggarwal et. al, 2015). Another study conducted by Addai (2017) demonstrates that microfinance enhances women's decision-making power and financial independence in Ghana. The study conducted to examine trust dynamics in financial transactions revealed that cultural and gender-based trust differences can affect microfinance outcomes (Croson & Buchan, 1999).

In the context of Nepal, rare studies have conducted to assess the social contribution of microfinance. Dhungana et al. (2023) conducted a comparative study in Nepal of for-profit and not-for-profit and government owned MFIs, revealing that private MFIs were more effective to serve poor clients and enhancing consumption and capital expenditure. Their findings suggest that the nature of institutional type play influences outreach and empowerment approaches, with exploratory factor analysis confirming perceived improvements in poverty alleviation and women's empowerment. A study conducted in Nepal by Shankar and Bhattacharya (2023) investigated the relationship between micro-credits, micro-savings, and loan size with women's empowerment in Nepal. The result found significant positive correlations among these variables, though challenges such as misuse of funds and limited financial literacy were noted.

Dhakal (2010) assessed the influence of microfinance on poverty reduction using extensive and intensive approaches. His study found that members' perceived level of income, nutrition, better housing and access to education and healthcare were experienced progress. Additionally, he linked the microfinance to progress in several Millennium Development Goals (MDSs). Further study conducted by Silwal (2024) found that microfinance users tend to have increased income, savings and spending on education and small business post-microfinance involvement.

The integration of microfinance with health and social development initiatives has also gained scholarly attention. Leatherman et al. (2012) and Maldonado et al. (2020) provide similar findings that combining microfinance with health education improves maternal and child health outcomes. Another study conducted in Indonesia by Deloach and Lamanna (2011) further support this by showing that microfinance participation positively affects child health in Indonesia. These findings suggest that microfinance can serve as a platform for delivering broader social outcome.

MFIs' success and failure depend on their performance, governance and efficiency. Institutional performance, governance, and efficiency are critical to the success of microfinance. Hermes et. al, (2011) suggested that the trade-off between outreach and efficiency must balance financial viability with social objectives. Sinha (2012) found that strong governance structures are essential factors to ensure accountability and transparency in the microfinance sector. Sierra et al. (2020) found in their research that comprehensive frameworks to evaluate the social performance of MFIs. Similar result was found by López-Penabad et al. (2024) by using scientometric analysis to map trends in corporate social responsibility in MF sector.

The nature of market forces and the increasing commercialisation of microfinance are ongoing debates among scholars and practitioners. Cull et al, (2009) identify how MFIs interact with market forces. He warned against mission drift when profit motives dominate social goals. Morduch and Ogden (2019) argue that microfinance requires social investment to continue its sustainability. Nogueira et al. (2020) reveal in their research that the current state and future direction of microfinance call for innovative models that integrate financial services with social impact.

The increasing trend of microfinance services over the years, yet their contribution to social development remains limited. Nepalese MFIs are given overemphasis on credit services only. In this context, this study is justified because it assesses whether involvement in microfinance leads to progress in education, healthcare awareness and social capital formation in the mediation of financial literacy. The study tries to explore how financial literacy strengthens the influence of microfinance.

A similar study conducted by Chapagain and Dhungana (2020) has found that microfinance is playing a crucial role to change in living standards of households in rural Nepal through the microfinance program. They employed Randomized Control Trail research design to find the living standard of control and treatment group. Out of 480 respondents, 240 were MF clients and the remaining were respondent who are not getting microfinance services. Parametric and non-parametric tests were conducted to analyze the data by using CFA and SEM.

Most existing research in the microfinance domain is focused on its impacts to poverty reduction and income-generating, economic outcomes like business growth, change in income level of beneficiaries, loan utilization and loan default. Theoretically and practically, microfinance is not limited to these economic outcomes microfinance also aims to social outcomes like, access to education, healthcare awareness and social capital formation, which is understudied in Nepalese context. Previous literature has explored primarily direct relationship between microfinance and its outcomes. Financial literacy may influence how effectively borrowers use microfinance services. Rare studies have empirically tested its mediating role in social outcomes. Descriptive, explanatory and Cross-sectional research design was employed

by using PLS-SEM to examine both direct and indirect effect of access to microfinance on its social outcomes. Microfinance is considered as a powerful tool to uplift the socio-economic status of disadvantaged group in Nepal (Dhungana & Chapagain, 2020). Growing number of MFIs branches, increasing trends of members across rural and urban area of Nepal has proven that microfinance is essential for the socio-economic development.

RESEARCH METHODS

This study employed a survey research design under quantitative research approach, utilizing a descriptive, explanatory and cross-sectional research design to assess the mediating role of financial literacy in the relationship between access to microfinance and social outcomes in Kaski District. Access to education, healthcare awareness, and social capital formation as endogenous variables, whether access to microfinance is the exogenous construct and financial literacy serving as the mediating variable. Initially, each constructs were assessed using five items on a five-point Likert scale; however, to ensure strong factor loadings and improved reliability of the measurement model, two items from each construct were removed. This study was conducted based on purposive sampling selected *Toles* of Annapuran Rural Municipality and Pokhara Metropolitan City, located at Kaski District of Gandaki Province in Nepal. From Annapurna Rural Municipality *Rayale, Paudur, Nagdanda, Serachour, Maidan, Pariyartole, Shivalaya tole, Baraghare* were selected and *Pame, Nayabasti, Sarangkot, Padheli, Rithhepani, hemja* were form Pokhara Metropolitan City. Locations were chosen purposively to ensure the rural and urban diversity of Kaski District.

The study consists of all primary data, which are quantitative in nature. Data was collected through structured questionnaires administered to individuals who have completed at least one cycle loan from licensed microfinance institutions operating in Pokhara Metropolitan City and Annapurna Rural Municipality. According to Nepal Rastra Bank (2024), the total number of microfinance borrowers are 13,658 in Pokhara and 2,847 in Annapurna. MFIs provide services through 78 microfinance access points in the district, including 51 in Pokhara and 11 in Annapurna.

The sample size was 165 which satisfies the recommended threshold for a moderately complex PLS-SEM model involving mediation and multiple constructs, as Hair et al. (2021) suggest that a sample of 150 to 200 is generally sufficient for robust structural equation modelling.

A multistage sampling technique was employed to select study participants. In the first stage, District was selected purposively due to its diverse geographic composition and high concentration of licensed microfinance institutions. In the second stage, Pokhara Metropolitan City was selected as the default to represent the urban area of the district, while Annapurna Rural Municipality was selected through a lottery method to represent the rural area, ensuring randomization and geographic balance. In the third stage, specific *Toles* within these local units were identified through the branch staffs in the respective branches of MFIs based on accessibility and the presence of active microfinance programs. Finally, respondents were selected using snowball sampling, beginning with known microfinance beneficiaries and expanding through referrals.

This study is conducted based on financial intermediation theory, empowerment theory and social capital Theory. Financial intermediation theory explains how MFIs play a role as a bridge to connect surplus units and deficit units in the economy. Empowerment theory emphasizes how to enhance members' decision-making power, self-dependence and socio-economic status. Social capital theory explains mutual trust

among group members, their network and engagement in improving social outcomes of microfinance. Based on these theories and empirical studies, the conceptual framework of this study is proposed in Figure 1. The conceptual framework was tested by PLS-SEM.

This study employed a quantitative approach. Data were collected through primary source from microfinance beneficiaries in Pokhara Metropolitan City and Annapurna Rural Municipality of Kaski District. Data were gathered using a structured questionnaire on five-point Likert scale, which included items measuring access to microfinance, financial literacy, access to education, healthcare awareness, and social capital formation. Respondents were selected through a snowball sampling technique. The survey was conducted with individuals who had completed at least one loan cycle from microfinance institutions in the study areas. Initially, each construct was measured using five items; however, to enhance the reliability and validity of the measurement model, two items from each construct were removed. Ethical standards were strictly followed throughout the data collection process. Informed consent was obtained from all participants, and their participation was voluntary. Respondents were assured of their right to withdraw at any stage, and all information was kept confidential in accordance with the ethical guidelines set by the Centre for Research and Innovation (CRI), Prithvi Narayan Campus.

RESULTS

Table 1 shows the descriptive statistics of the respondents. 58.8% of the respondent reside in urban sectors, while 41.2% are from rural municipality. The sample is dominated by middle age (37.6%) falling within the 36–45 years' category, followed by those aged 26–35 and 46–55. This shows that majority of microfinance members in Kaski district are from economically active age group. The majority respondents in sampled area is found 64.2% have received at least a basic level of education, whereas 35.8% are illiterate, which may present a barrier to financial literacy. 75.8% of respondents have been members for five years or more. Majority of respondent having taken loans three times or fewer. Furthermore, 55.2% of participants are affiliated with only one MFI, while 44.8% are associated with multiple institutions.

Table 1

Demographic Characteristics of Respondents (n = 165)

Demographic Variables		Frequenc	Percent	Cum. Percent
Sector	Rural sector	68	41.2	41.2
	Urban sector	97	58.8	100.0
	Total	165	100.0	
Age of Members	Less than 25 years	5	3.0	3.0
	26-35 years	39	23.6	26.7
	36-45 years	62	37.6	64.2
	46-55 years	39	23.6	87.9
	Above 55	20	12.1	100.0
	Total	165	100.0	
Educational level	Otherwise	59	35.8	35.8
	If studied basic and above	106	64.2	100.0
	Total	165	100.0	

Years of membership codes	Otherwise	40	24.2	24.2
	Above 5 years	125	75.8	100.0
	Total	165	100.0	
No. of time obtained loan	<=3 times	93	56.4	56.4
	4 - 6 times	38	23.0	79.4
	> 6 times	34	20.6	100.0
	Total	165	100.0	
how many MFIs are providing services to you?	One	91	55.2	55.2
	More than One	74	44.8	100.0
	Total	165	100.0	

Source: Field survey, 2025

This profile provides a comprehensive overview of the demographics of the respondents. This information helps in understanding how microfinance beneficiaries perceive to social outcomes.

Mean and Standard Deviation of Measurement Items

The only exogenous construct, access to microfinance, was measured using three indicators that represent the MF members' perception of the financial stability, income growth and affordability of microfinance services in the study areas. Opinions were collected on five point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The result (see Table 2) shows that there is moderately positive perception of financial stability and income growth among members. Respondents agreed that microfinance services have contributed positively to members' financial stability (Mean = 3.69, SD = 0.845) and income growth (Mean = 3.68, SD = 0.771). However, the comparatively lower mean score for the fairness of interest rates and accessibility of credit services (Mean = 3.25, SD = 0.992) indicates there is a possibility of policy reform regarding the affordability of microfinance services.

Table 2

Mean and Standard Deviation of Measurement Items

SN	Statements	Mean Score	SD
Access to microfinance (MC)			
MC1	Microfinance services have a positively contributed to the financial stability of members.	3.69	.845
MC3	Microfinance has positively contributed to my income growth.	3.68	.771
MC4	The interest rates and terms of microcredit are fair and accessible for members.	3.25	0.992
Financial literacy (FI)			
FI1	Microfinance services enhance financial inclusion for members.	3.75	.730
FI2	Access to microfinance enhances financial services for their members.	3.82	.958
FI3	Microfinance encourages farmers' financial access and participation.	3.81	.862
Healthcare and awareness (HCNA)			
HCNA1	Microfinance services improve members' access to healthcare.	2.85	1.18

HCNA3	Microfinance contributes to better health outcomes for members.	2.82	1.128
HCNA4	Members of microfinance are more likely to seek healthcare.	2.82	1.030
Access to education (ATE)			
ATE3	Microcredit boosts access to education for members and their children.	3.45	1.032
ATE4	Microfinance empowers members' to provide better education for their children	3.45	1.044
ATE3	Microfinance members' are more likely to send their children to school	3.42	.969
Social capital formation (SCF)			
SCF1	Microfinance services strengthen social bonds within their groups.	3.79	.802
SCF3	Microfinance enhances networking and collaboration among members.	3.86	.923
SCF4	Members in microfinance groups develop trust and cooperation	3.86	.890

Source: Authors' Calculation on SPSS

Financial literacy, mediating construct was assessed through three indicators that represented financial knowledge, inclusion, and participation among members. Their views were collected on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The result (see Table 2) revealed a generally positive perception of financial literacy indicators. Their agreeableness towards microfinance services enhances financial inclusion (Mean = 3.75, SD = 0.730), microfinance access to financial services for all (Mean = 3.82, SD = 0.958), and encourages active financial participation among members (Mean = 3.81, SD = 0.862). These findings highlight the role of financial literacy as a mediating role between access to microfinance and its social outcomes.

One of the key social outcomes of microfinance is Healthcare Awareness construct. This construct was measured through three indicators in five point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The results indicate a relatively low level of their agreeableness towards the healthcare and awareness services. Low level of agreement among respondents, with mean scores of 2.85 (SD = 1.180), 2.82 (SD = 1.128), and 2.82 (SD = 1.030) suggest that while microfinance may offer financial support, its direct influence on improving healthcare access and outcomes for farmers remains limited. Also highlights the need for integrating targeted health education and support services to microfinance members to enhance their social impact.

The access to education construct was measured through three indicators. The first statement microfinance boost access to education for members' and their children. The result found that there is moderately positive perception towards access to education after becoming members in MFIs (Mean = 3.45, SD = 1.032). The mean score of 3.45 and SD of 1.044 indicate that members have a positive perception towards this statement. The final statement regarding access to education construct is that members are more likely to send their children to school (Mean = 3.42, SD = 0.969). These results imply that microfinance has a supportive role in empowering members' and their children's education.

The social capital Formation construct

was measured through five-point Likert scale in three items. Social capital formation is represented from social cohesion, trust, and collaboration among members. The results demonstrate a strong positive perception, with high mean scores for all three indicators: strengthening social bonds (Mean = 3.79, SD = 0.802), enhancing networking and collaboration (Mean = 3.86, SD = 0.923), and fostering trust among group members (Mean = 3.86, SD = 0.890). These finding reveals that microfinance programs play a significant role in building social capital.

Analysis of Relationship among Access to Microfinance, Financial Literacy and Social Outcomes

CMB is conducted to determine whether the dissimilarities in answers are instigated by the survey tool or by the actual tendencies of the participants that the survey instruments attempt to discover, and that a "single factor" can account for all of the variances in the data.

Harman's single factor test is employed to test the common method bias (CMB) in this study. The CMB may occur as all scales used to collect data were present in same questionnaire and cross sectional survey design for data collection (Khanra & Joseph, 2019). Exploratory factor analysis (EFA) using principal component analysis method was employed to address the CMB issue. The rule of thumb based on CMB is that total variance explained by a single factor must be below 50% for the absence of common method bias (Harman, 1976). The result EFA showed that total variance explained by a single factor is 39.5%. The result confirms that CMB does not affect the validity of finding.

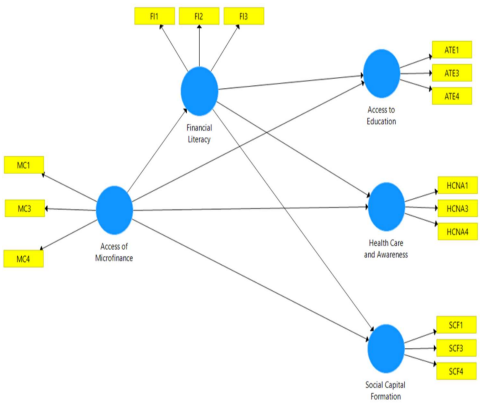
Measurement Model

Measurement model was evaluated through indicators' reliability, internal consistency, convergent validity and discriminant validity for the robustness of the constructs used in the structural model (Hair et al., 2022; Sarstedt et al., 2017). Except one item (MC4), all other indicators' reliability demonstrated strong, with higher outer loadings threshold of 0.70. One of the indicator which is below threshold was retained due to its contribution to acceptable average variance extracted (AVE) value more than 0.5 at the construct level. Cronbach's alpha, composite reliability and Rho_A values in acceptable range for all constructs confirmed the internal consistency, reliability and convergent validity.

Convergent validity was measured by AVE values exceeding 0.50 for all latent constructs. Fornell–Larcker criterion and the heterotrait–monotrait (HTMT) ratio confirmrs the discriminant validity of the constructs. According to Henseler et. al., (2015) the square roots of AVE for each construct should greater than their inter-construct correlations. All HTMT values were below the threshold of 0.85, reflecting acceptable discriminant validity.

Figure 1

Measurement Model of First-Order Reflective Constructs



Multi-collinearity among indicators was checked through variance inflation factors (VIF) values, which were below 5. All of these results confirms no reliability and validity issues were found for the first order reflective measurement model which provide a base for further structural model analysis.

Table 3

Reliability and Validity of the Constructs

Constructs	Coding	Factor Loading	Cronbach's Alpha	Rho_A	Composite Reliability	AVE
Access to Microfinance	MC1	0.940	0.820	0.944	*0.884*	*0.722*
	MC3	0.936				
	MC4	0.596				
Financial Literacy	FI1	0.947	0.920	0.924	0.949	0.862
	FI2	0.929				
	FI3	0.910				
Access to Education	ATE1	0.928	0.930	0.933	0.955	0.877
	ATE3	0.938				
	ATE4	0.943				
Health care and Awareness	HCNA1	0.906	0.926	*0.968*	*0.952*	*0.869*
	HCNA3	0.945				
	HCNA4	0.946				
Social Capital Formation	SCF1	0.942	0.925	*0.9267*	*0.952*	*0.870*
	SCF3	0.928				
	SCF4	0.928				

Table 3 demonstrates the reliability and validity of constructs applied in the research. All constructs have strong reliability and validity with Cronbach's Alpha, Rho_A, and Composite Reliability values are above the recommended threshold of 0.7. AVE values of each constructs exceed 0.50. The factor loadings are also above the recommended threshold of 0.60 for most items, underscoring good convergent validity. Hence, we confirmed that the measurement model applied in this research is reliable and valid.

Table 4 demonstrates the discriminant validity of constructs by using Fornell-Larcker criterion. The result shows that square root of the AVE for each construct, which is bold in diagonal, is higher than the correlation with the other constructs. This confirms that each construct explains more variance with its own indicators rather than with other constructs. Hence, discriminant validity is established in the proposed measurement model. This means that constructs are conceptually distinct and appropriate for analysis.

Table 4

Discriminant Validity: Fornell-Larcker Criterion

	ATM	ATE	FI	HCNA	SCF
ATM					
ATE	0.196				
FI	0.197	0.526			
HCNA	0.129	0.381	0.286		
SCF	0.298	0.42	0.561	0.134	0.933

Table 5

Discriminant Validity: Heterotrait-Monotrait Ratio (HTMT) Criterion

Constructs	ATM	ATE	FI	HCNA
SCF				
ATE	0.196			
FI	0.192	0.565		
HCNA	0.157	0.399		
0.298				
SCF	0.329		0.452	
0.608	0.138			

All HTMT values were below the standard threshold of 0.85, reflecting acceptable discriminant validity of constructs. The results confirm that the measurement model has established the discriminant validity.

Table 6

Collinearity Statistics (VIF Values) for Constructs

Construct	Indicator	VIF Value
Access to Microfinance	MC1	3.322
	MC3	3.838
	MC4	4.419
Financial Literacy	FI1	4.098
	FI2	3.521
	FI3	2.932
Access to Education	ATE1	3.356
	ATE3	3.473
	ATE4	4.309
Healthcare Awareness	HCNA1	2.424
	HCNA3	2.840
	HCNA4	1.499
Social Capital Formation	SCF1	3.897
	SCF3	3.313
	SCF4	3.536

PLS-SEM is suitable for theory development, exploratory research and prediction-oriented studies, especially when the sample size is moderate (Hair et al., 2021). PLS-SEM emphasizes maximizing the explained variance (R^2) of endogenous constructs where covariance-based SEM focuses on model fit and theory testing. The path coefficients of access to microfinance significantly influence financial literacy ($\beta = 0.197$, $p = 0.022$) and social capital formation ($\beta = 0.195$, $p = 0.020$), supporting hypotheses H1a and H1d. However, the direct effects of microfinance on access to education and healthcare awareness are not statistically significant. This reflects that microfinance alone may not be sufficient to influence on social outcome.

Mediation Analysis

Table 7

Mediation Analysis Showing VAF Values and Classification of Mediation Type

Path Relationship	Indirect Effect (a × b)	Direct Eff (c)	Total Effect	VAF (%)	Mediation Type
ATM → FL → AE	0.197 × 0.507 = 0.100	0.096	0.196	51.0%	Partial Mediation
ATM → FL → HCNA	0.197 × 0.271 = 0.053	0.076	0.129	41.1%	Partial Mediation
ATM → FL → SCF	0.197 × 0.523 = 0.103	0.195	0.298	34.6%	Partial Mediation

Table 7 shows the mediation role of role of financial literacy in between access to microfinance and its social outcomes. The indirect effects of access to microfinance on education, healthcare and social capital formation is shown in the Table 7. The mediation analysis provides exciting evidence for the role of financial literacy as a partial mediator. This mediation is significant on social outcomes of microfinance. The indirect effects of microfinance on education ($\beta = 0.100$, $p = 0.033$), healthcare awareness ($\beta = 0.053$, $p = 0.069$), and social capital formation ($\beta = 0.103$, $p = 0.030$) through financial literacy are statistically significant. Variance Accounted For (VAF) values 51% for education, 41.1% for healthcare, and 34.6% for social capital formation, confirming partial mediation, as per the guidelines by Hair et al. (2021). These findings support hypotheses H2a and H2c, indicating that financial literacy mediates the relationship between access to microfinance and access to education. This mediating relationship still remains the same between access to microfinance and social capital formation. The explanatory power of the model is measured by R^2 values. These value varies across constructs. The R^2 for social capital formation (0.352) and access to education (0.286) suggest moderate explanatory power, while financial literacy (0.039) and healthcare awareness (0.087) show lower explanatory power (Hair et al., 2021).

Figure 2

Structural model showing path coefficients and R^2 values among constructs.

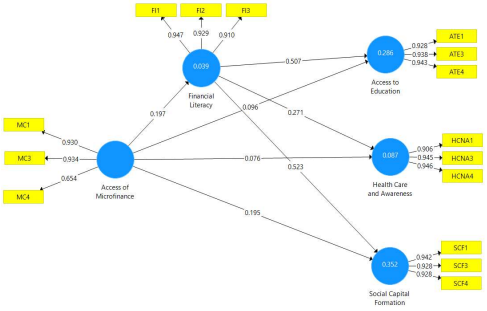


Figure 2 depicts the structural model of relationship among constructs in this study. The model represents the latent variable-Access to Microfinance, Financial Literacy, Access to Education, Health Care and Awareness, and Social Capital formation with respective indicators. The numerical values in the arrows represent their Path coefficients, and the numbers between latent constructs and indicators represent the factors loadings, which measures the strength of the relationship between latent variables and their observed indicators. Figure 2 demonstrates the model of the proposed relationship and the quality of the constructs.

Model Fit Indices of the Structural Model

Table 8

Model Fit Indices of the Structural Model

Fit Index	Saturated Model	Estimated Model
SRMR	0.056	0.081
d_ULS	0.372	0.778
d_G	0.283	0.304
Chi-Square	296.38	313.538
NFI	0.855	0.846

The model fit is found satisfactory because of the SRMR value of 0.081 for the estimated model falls within the acceptable threshold of 0.08 to 0.10. Even though the d_ULS value exceed the saturated model, the overall model fit indices SRMR (0.081) and NFI (0.846) are at satisfactory level. These results confirm that the proposed structural model achieves an acceptable level of fit for subsequent interpretation and analysis (Hair et al., 2021; Henseler et al., 2014). Table 8 demonstrates the model fit indices of the structural model.

Table 9

Structural Model: Direct and Indirect (Mediation) Effects

Hypo	Path	β (Coeff.)	t-stat.	CI.95 (LL, UL) Bias corr	p-value (Sig.)	f^2	VIF	R^2	Decision
H1a	ATM→ FI	0.197	2.293	[0.010, 0.351]	0.022	0.040	1.00	0.039	Supported
H1b	ATM→ ATE	0.096	1.527	[-0.034, 0.212]	0.127	0.012	1.04	0.286	Not Supported
H1c	ATM→ HCNA	0.076	1.055	[-0.081, 0.204]	0.292	0.006	1.04	0.087	Not Supported
H1d	ATM → SCF	0.195	2.329	[0.016, 0.348]	0.020	0.056	1.04	0.352	Supported
H2a	ATM → FI → ATE	0.100	2.120	[0.009, 0.191]	0.033	0.346	1.04		Supported
H2b	ATM → FI → HCNA	0.053	1.816	[0.007, 0.120]	0.069	0.077	1.04		Not Supported
H2c	ATM → FI → SCF	0.103	2.169	[0.020, 0.201]	0.030	0.405	1.04		Supported

The structural model analysis conducted through SmartPLS provided insights into the relationships among access to microfinance, financial literacy and social outcomes. These hypotheses were tested to ascertain the direct and indirect effects of microfinance on financial literacy and social outcomes (H1a, H1b, H1c and H1d), the association between access to microfinance and social outcomes in the presence of financial literacy (H2a, H2b, H2c and H2d). The results are depicted in Table 9.

Table 9 indicates the results of the structural model depicting the path coefficients, associated t-values and bootstrap confidence interval. Study's hypotheses are tested

by the significance value and sign of the structural path coefficients. The R-square value of the endogenous constructs reveals explanatory power of the structural model. The significance of structural model's direct paths and estimated standard error is determined using bootstrap resampling method with 5000 resamples

DISCUSSION

This study concentrates on access to microfinance and its social outcomes in the mediating relationship of financial literacy, especially in Kaski District. This study aimed to test the mediating role of financial literacy between access to microfinance and social outcomes, especially on access to education, healthcare awareness and social capital formation. Some major findings of the study are consistent with previous research and others are diverse from the existing literature.

The present study found statistically significant direct effect of access to microfinance on social capital formation, which is consistent with the existing literature that access to microfinance enhances trust among group members, group cohesion and community engagement through participation (Aggrawal et al., 2015; Chapagain & Dhungana, 2020; Leatherman et al., 2012). High mean scores of Social Capital Formation indicators; MF services strengthen social bonds within members, MF enhance networking and collaboration among members, and MF members develop trust through group building social capital. These findings also align with the Social capital theory. Financial services embedded in group-based model can enhance social ties and mutual trust.

Similarly, the mediating role of financial literacy was found statistically significant in the relationship between Access to Microfinance with all three endogenous constructs: Access to Education (ATM → FL → AE, VAF = 51.0%), Healthcare Awareness (ATM → FL → HCNA, VAF = 41.1%) and Social Capital Formation (ATM → FL → SCF, VAF = 34.6%). This finding supports that Financial literacy enhances the effectiveness of microfinance by empowering informed decision making and effective resource utilization (Armandariz & Morduch, 2010; Hassan & Saleem, 2017; Samer et al., 2015; Sinha et al., 2012).

The present study also found that access to microfinance is not statistically significant with access to education and healthcare awareness outcomes directly. This finding is different from the existing literature that access to microfinance is directly related with education and healthcare awareness (Deloach & Lamanna, 2011; Maldonado et al., 2020). Adopting integrated approach of microfinance leads to significant social outcomes directly like access to education and healthcare awareness (Cull et al., 2009; Hermes et al., 2011). This study finding is similar with the conclusion made by Cull et al. (2009) that focusing only financial goal may lead to mission drift. This study found similar result that access to microfinance with integrating financial literacy is supportive to accomplish the dual goals of MFIs proposed by Armandariz and Morduch (2010).

CONCLUSION AND SUGGESTIONS

This study aims to investigate the extent to which access to microfinance influences education, healthcare awareness and social capital formation. The direct effect of access to microfinance on access to education and healthcare awareness was statistically insignificant. However, the indirect effect of access to microfinance and access to education and social capital formation was significant.

The result confirms that knowledge empowerment enhances the social impact of financial services. The validated partial mediation across all three outcomes: education, healthcare awareness, and social capital formation. The study found the

necessity of integrating financial literacy into microfinance programs.

This study concludes that access to microfinance has an insignificant direct influence on education and healthcare awareness. Financial literacy significantly mediates these relationships, enhancing their social impact on education and social capital formation. The partial mediation across education, healthcare awareness, and social capital formation highlights the importance of integrating financial literacy into microfinance programs. Financial literacy is a mediatory condition to fulfil the dual goal of microfinance that combines financial access with knowledge empowerment to promote inclusive and sustainable social development.

These findings apply to the microfinance institutions, and policymakers must adopt an integrated approach of microfinance model in Nepal. Access to microfinance with literacy interventions to achieve social development goal of microfinance.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

ACKNOWLEDGEMENTS

We thankfully acknowledge the Centre for Research and innovations (CRI), Prithvi Narayan Campus, Pokhara, Nepal to make this study possible by providing the mini research grant.

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