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Does service quality influence loan repayment behaviour of microfinance institution clients? An integrated model approach to access behavioural dimensions

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Abstract

Purpose – The study aims to investigate the key behavioural dimensions that significantly influence loan repayment behaviour of microfinance institution clients. The study also intendes to evaluate the impact of service quality of MFIs on clients' satisfaction.

Design/methodology/approach – The primary data was gathered from 235 microfinance institution (MFI) clients through a structured questionnaire in Khordha district, Odisha. The theory of planned behaviour (TPB) was measured using three constructs, namely perceived behavioural control, subjective norm and attitude. Norm activation model (NAM) was measured by three constructs, such as awareness of consequences, ascription of responsibility and personal norms. Service quality of MFI was measured using five constructs, namely assurance, empathy, reliability, responsiveness and tangible. Confirmatory factor analysis (CFA) and structural equation modelling (SEM) were employed to analyse the sample data.

Findings – The study results show that personal norms, attitude, ascription of responsibility and client satisfaction significantly influence the loan repayment behaviour intention of clients, whereas perceived behavioural control, subjective norms and awareness of consequences did not impact loan repayment behaviour. Furthermore, service quality dimensions were found to be critical in measuring client's satisfaction and had a significant impact on client's satisfaction.

Practical implications – It is very essential for MFIs to understand and predict the repayment behaviour of clients. Group lending mechanisms are more suitable for women to access financial assistance from MFIs. In addition, developing trustworthy relationships between MFI and clients improves their outreach, engagement and retention of clients, leading to greater financial inclusion and socioeconomic development.

Originality/value – The study stands out by focusing on the measurement of service quality in MFIs, an area with no existing research. An integrated model was used to identify the factors influencing client behaviour towards MFIs comprehensively and in a better way. Furthermore, the study contributes to the literature by providing empirical evidence on the importance of behavioural intention and service quality in shaping client behaviour towards MFIs loan repayment.

Keywords Behavioural dimension, Service quality, Microfinance, TPB, NAM, SERVQUAL

Paper type Research paper

1. Introduction

Microfinance institutions provide financial services, including loans to individuals who are often excluded from traditional banking services due to poverty, lack of collateral or credit history and living in remote or rural areas (Wijesiri and Meoli, 2015). Besides loans, MFIs may also offer other financial services such as savings accounts, insurance and financial

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education. The main objectives of microfinance are to empower individuals and communities to improve their standard of living by providing them with the financial tools they need to invest in income-generating activities (Jabarajakirthy and Lobo, 2014; Buchenrieder *et al*., 2019; Belek and Marie, 2021; Djelassi, 2023). MFIs significantly contribute to Sustainable Development Goals (SDGs) by providing individuals with access to financial tools that can lift them out of poverty, promote gender equality and stimulate economic growth (Khan *et al*., 2023).

MFIs usually operate in group lending models where loans are issued to groups of individuals who are collectively responsible for repayment. This means that if one member of the group is unable to repay their loan, the other members are responsible for covering the outstanding balance (D'espallier *et al*., 2011; Iqbal and Rao, 2022). Each member of a group works as a guarantor for the repayment of a loan. Therefore, the MFIs can spread the risk across the group and reduce the likelihood of default. It also promotes social cohesion and peer support for sharing information, resources, advice and moral support. While joint liability groups (JLGs) are an effective microfinance model in many cases, they also have potential hitches related to group dynamics, individual accountability, risk concentration and scalability (Samineni and Ramesh, 2020; Santoso *et al*., 2020; Tchakoute Tchuigoua, 2023). Lack of trust, cooperation and communication may lead to group conflict and destroy harmony. The behaviour of group members and group dynamics are vital to the success of joint liability groups in microfinance. Indiscipline in joint liability groups (JLGs) leads to increased defaults and non-performing assets (NPAs), eroding trust among members and creating peer pressure and conflict. This impacts the group's collective creditworthiness and strains social relationships, leading to social stigma. Due to this, microfinance institutions (MFIs) face higher operational costs and challenges, diverting resources from growth activities. Member's responsible behaviour ensures the timely repayment of loans and the overall financial health of the group. Hence, it is important for MFIs to carefully consider the factors that significantly influence clients' responsible behaviour.

Responsible behaviour of clients in MFI refers to the behaviour practiced by individuals and groups. It fosters a positive group dynamic in JLGs, ensuring mutual support, timely loan repayments and honest communication, maintaining their creditworthiness and trust in the institution. Trust between clients and the institution deteriorates, increasing default rates and operational costs for MFIs. This can strain community relationships and undermine the overall goal of financial inclusion and empowerment. Ultimately, it jeopardizes the sustainability and effectiveness of microfinance initiatives.

Additionally, the MFI sector is facing increasing competition due to the large number of players in the financial markets. Traditional banks, small finance banks, non-banking financial cooperation's and fintech service providers are providing microfinance services (Ray, 2019; Belek and Jean-Marie, 2020; Tchakoute Tchuigoua, 2023). To remain competitive, MFIs may need to diversify their products and services to enhance their operations and explore new strategies. They should prioritise building strong relationships with their clients. This involves improving customer service and tailoring their products and services through acclimatize a client-centric approach rather than simply providing financial services.

Several studies were conducted to understand loan repayment behaviour and identified various factors from various dimensions, including over-indebtedness, default in repayment, multiple borrowings, progressive lending, adverse selection and moral hazards, etc. These studies revealed several factors influencing loan repayment behaviour, such as borrower characteristics like income and education (D'espallier *et al*., 2011; Nawai and Shariff, 2012), social capital (Rathore, 2015), social networks and loan terms (Dorfleitner and Oswald, 2016), and repayment incentives (Baum *et al*., 2017). Sangwan *et al*. (2020) emphasized borrower and loan characteristics, while (Tchakoute Tchuigoua, 2023) noted that male loan officers had higher recovery rates. However, these researchers have explored the external attributes to identify the antecedents of repayment behaviour, but none of the studies have focused on identifying the factors that influence the preventive behaviour.

Hence, prevention is more effective than intervention. In microfinance, preventive actions like thorough borrower assessment, financial education and effective peer monitoring can mitigate risks of loan defaults and over-indebtedness. These proactive measures build trust, ensure responsible borrowing and enhance repayment rates, reducing the need for costly recovery efforts. By addressing potential issues early, MFIs can maintain financial stability and promote sustainable financial inclusion. Hence, it is important for MFIs to carefully consider the factors that significantly influence the MFI client's intended loan repayment behaviour. The motivation behind this research is to better understand how the individual internal attributes such as perceived behavioural control (PBC), subjective norm (SN), attitude (AT), awareness of consequences (AWC), ascription of responsibility (AR) and personal norms (PN) influence behavioural intention (BI) towards loan repayment.

MFIs primarily serve low-income individuals and microentrepreneurs who may not have access to mainstream financial services. MFIs provide microloans, savings accounts and insurance tailored to the needs of their clients and promote financial inclusion. They are typically mission-oriented aiming to alleviate poverty and empower marginalized communities. Due to mission-driven focus, many MFIs may prioritize financial performance over customer satisfaction, considering loan repayment rates and profitability as more important indicators of success. Customer satisfaction cannot be neglected, as it is essential for the long-term success and sustainability of MFIs. Ignoring customer satisfaction can lead to lower clients retention, higher default rates and can negatively impact the reputation. Satisfied clients are more likely to repay loans on time, recommend the institution to others and maintain a long-term relationship with the MFI. Kanyurhi (2017) highlighted the need for a specific measurement scale for the MFI sector due to its unique objectives of social inclusion, customer enhancement, accessibility and flexibility dimension. The researcher developed a scale and validated it to measure the service quality and customer satisfaction of MFIs services. Hence, the present study has adopted the special service quality measurement scale exclusively designed for the MFI sector to present valuable insights.

The present study focused on measuring the behavioural intention of MFI clients employing an integrated model combining of three models, such as theory of planned behaviour (TPB), norm activation model (NAM) and service quality (SERVQUAL) model, which makes the study unique and different from other studies. TPB and NAM are widely used theoretical models in social and behavioural sciences to explain and predict human behaviour. TPB and NAM are established models for explaining human behaviour, their application to the context of MFI client behaviour, particularly in combination with SERVQUAL, is relatively unexplored. This integration allows for a more comprehensive understanding of the factors influencing MFI client repayment behaviour, thus contributing to a deeper insight into the unique dynamics of the microfinance sector and enhancing the effectiveness of service delivery and financial inclusion efforts.

2. Literature review

Repayment behaviour is a critical factor for the success and sustainability of MFIs. By understanding the factors that influence repayment behaviour, MFIs can develop effective strategies to manage credit risk and ensure the sustainability of their business (Nawai and Shariff, 2012; Sangwan *et al*., 2020).

2.1 Repayment behavioural studies in MFIs

Behaviour refers to the actions and decisions of an individual that are influenced by their beliefs, attitudes, values and social context. It includes how they make decisions, behave in social situations and respond to challenges and opportunities. D'espallier *et al*. (2011), the study investigated the relationship between gender and loan repayment in MFIs. Using data from 66 MFIs in Latin America, the study found that women had a higher repayment rate than

men. The study also suggested that women's group lending may be a contributing factor to their higher repayment rates. Cason *et al*. (2012) examined the role of moral hazard and peer monitoring in microfinance. The study aimed to investigate how borrowers' moral hazard behaviour and peer monitoring affect their loan repayment behaviour in a laboratory setting. The paper reviewed the results of a randomized controlled trial conducted with college students to analyse the impact of moral hazard and peer monitoring on borrowers' repayment behaviour. The findings suggested that borrowers who are subject to peer monitoring are more likely to repay their loans than those who are not, indicating the importance of social pressure in microfinance.

Nawai and Shariff's (2012) study examined the factors affecting loan repayment performance in MFIs in Malaysia. Using data from 371 clients and four MFIs, the study found that borrower characteristics such as income level and education have a significant impact on loan repayment rates. The study also suggested that loan characteristics such as loan size and interest rate have a moderate effect on loan repayment. Rathore's (2015) study examined the role of social capital in MFIs in Nepal. Using data from 185 clients and five MFIs, the study found that social capital positively impacts loan repayment rates and loan size. The study also suggested that social capital has a greater impact on loan repayment rates than loan size.

Dorfleitner and Oswald (2016) examined the repayment behaviour of borrowers in peer-to-peer (P2P) microfinance. The study examined the factors that influence borrowers' repayment behaviour and how this behaviour affects the lenders' investment returns. The findings showed that factors such as the social network of borrowers, interest rate charged and the amount borrowed significantly affect their repayment behaviour. The study concluded that understanding borrowers' repayment behaviour is crucial for lenders to make informed investment decisions and for the long-term sustainability of P2P microfinance platforms.

Baum *et al*. (2017) analysed the impact of repayment incentives on exclusion in MFIs. The study investigated whether repayment incentives such as interest rate discounts or cash rewards lead to the exclusion of certain borrowers from the MFI. The findings suggested that repayment incentives can improve borrowers' repayment behaviour without leading to exclusion of certain borrowers. Barboni (2017) investigated the impact of repayment flexibility in MFI contracts on borrower performance in Peru. Using data from 427 clients, the study found that offering flexible repayment schedules can improve loan repayment rates and reduce loan delinquency. The study also suggested that borrower characteristics, such as education and business experience, can moderate the impact of repayment flexibility on loan performance.

Sangwan *et al*. (2020) focused on the factors that influence loan repayment behaviour among clients of MFIs. The study identified several factors, including household characteristics, loan characteristics, moral hazard features and regional attributes that can impact loan repayment behaviour. The study found that borrower's income, education and family size were important predictors of loan repayment behaviour. The study also found that loan characteristics, such as loan amount, interest rates and repayment periods, were important factors that influence loan repayment behaviour.

Tchakoute Tchuigoua (2023) examined loan officers' gender effect on MFIs' loan repayment performance. The findings of the study showed that the male loan officers performed better during both the disbursement and collection process, as they were showing higher recovery rates and lower arrears than female loan officers. Kumar and Asmare (2024) examined the financial sustainability and outreach of MFIs in Ethiopia. The study used panel data of MFIs from 2012 to 2021 and used seemingly unrelated regression (SUR). It was found that outreach performance helps MFIs to achieve financial sustainability. The study revealed that MFIs' financial sustainability improved social performance. Singh (2024) examined the social performance moderates between financial risk and financial performance in MFIs and also studied long-term sustainability and financial self-sufficiency of MFIs. The study used panel data of 2,694 MFIs from 2009 to 2019. The findings of the study disclosed that financial risk had a negative and social performance had a positive relation to financial performance. Borrowers' retention rate and female participation showed a positive relationship with

financial risk and financial performance. It evidenced that social performance had an impact on the financial performance of microfinance institutions. These studies investigated diverse aspects of microfinance operations and the influence of gender, social capital, moral hazard and various borrower and loan characteristics on repayment rates.

Major findings of these literature reviews showed that factors such as social networks, repayment incentives and borrower education significantly impact loan repayment in MFIs, offering valuable insights for the enhancement of microfinance programmes and poverty reduction efforts. Our study differs from these previous research efforts as it concentrates on a distinct geographic region and incorporates a novel combination of variables, including service quality in MFIs, to investigate a previously unexplored dimension of microfinance loan repayment behaviour.

2.2 Service quality measurement studies in MFI sector

MFIs main concerns are financial performance and loan repayment rates over customer satisfaction, viewing these metrics as more critical for success. Despite these challenges, measuring customer satisfaction in MFIs is crucial for understanding client needs and improving services. Parasuraman *et al*. (1988) proposed the SERVQUAL framework, which includes tangibles, reliability, responsiveness, assurance and empathy, widely used to assess service quality across industries. Kanyurhi (2017) developed and validated a scale specifically for measuring service quality and customer satisfaction in MFIs, addressing their unique objectives of social inclusion, customer enhancement, accessibility and flexibility. This specialized scale provides valuable insights tailored to the MFI sector.

3. Theoretical background and hypothesis

This study makes a unique significant contribution to the existing literature on MFIs. The study employs an integrated model that combines the theory of planned behaviour (TPB), the norm activation model (NAM) and service quality model (SERVQUAL) as illustrated in Figure 1.

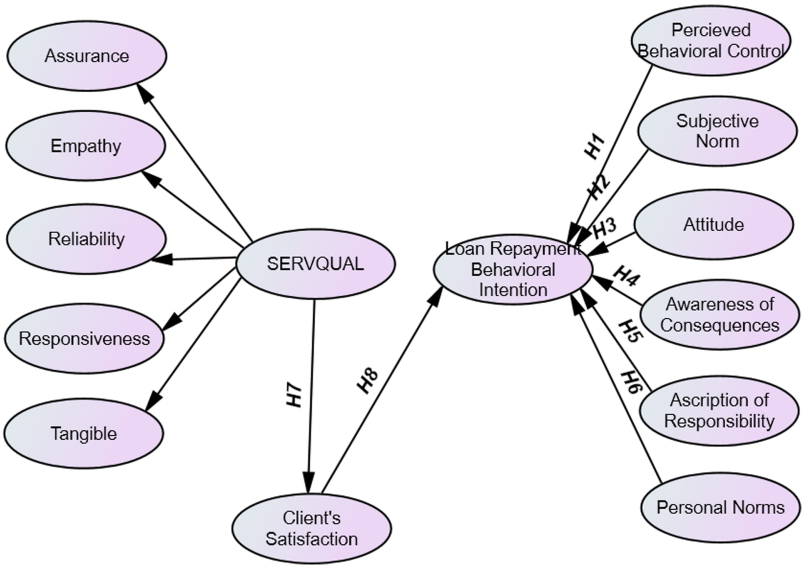

Figure 1. Proposed research framework. Source: The authors

3.1 Theory of planned behaviour (TPB)

This model is an extended model of the theory of reasoned action. These are socio-psychology related theories that explain how people's beliefs, attitudes and intentions shape their behaviour. The theory was developed by Icek Ajzen in the late 1980s and is an extension of his earlier work on the theory of reasoned action. The TPB model presented that behavioural intention is influenced by three dimensions that include attitude, subjective norm and perceived behavioural control. TPB has been widely used in various research to understand consumer behaviour, environmental behaviour and health-related behaviour (Fenitra *et al*., 2021). This model evidenced that behavioural intention can be captured by these constructs effectively.

Perceived behavioural control refers to an individual's belief in their ability to perform a particular behaviour (Zhang *et al*., 2018; Hu *et al*., 2019). Likewise, the studies empirically evidenced a significant positive relationship between perceived behavioural control and behavioural intention (Panwanitdumrong and Chen, 2021; Ojedokun *et al*., 2022; Ong *et al*., 2022). Therefore, in this context, the researchers have drawn a hypothesis based on the statement that perceived behavioural control can influence their likelihood of repaying loans on time or default.

H1. Perceived behavioural control has a significant positive relationship to loan repayment behavioural intention.

Subjective norm refers to an individual's perception of the social pressure to perform a particular behaviour (Ajzen, 1991). In tourism, environmental and marketing discipline research studies have evidenced a strong relationship between subjective norms or social norms and behavioural intention (Hu *et al*., 2019; Panwanitdumrong and Chen, 2021). In our study framework, loan repayment behaviour of MFI clients, subjective norm can refer to the perceived social expectations or norms regarding timely loan repayment.

H2. Subjective norm has a significant positive relationship to loan repayment behavioural intention.

Attitude refers to an individual's evaluation of a particular behaviour, which can be positive, negative or neutral (Ajzen and Fisbbein, 1974; Sia and Jose, 2019). Attitude plays a significant role in influencing the loan repayment behaviour of MFI clients.

H3. Attitude has a significant positive relationship to loan repayment behavioural intention.

3.2 Norm activation model (NAM)

This is a social psychological theory that explains how moral norms influence human behaviour. The model was developed by Schwartz in 1977 and has been adopted in various research to study a range of behaviours, including pro-environmental behaviour, health behaviour and responsible behaviour (Schwartz, 1977). The model consists of three dimensions, such as awareness of consequences, ascription of responsibility and personal norms. According to this model, people's behaviour is influenced by their awareness of positive and negative consequences of the activities; moral norms, i.e. a feeling of moral obligation, personal norms, i.e. the personal responsibility to act according to the norm, etc. These interventions can influence behavioural intention. Various studies evidenced that behavioural intention can be captured by these constructs effectively (Bamberg *et al*., 2007; Esfandiar *et al*., 2021).

Awareness of consequences refers to an individual's understanding of the potential outcomes or consequences of their behaviour (Han, 2020). Researchers from many disciplines have found a strong association between awareness of consequences and behavioural intention (Pan *et al*., 2018; Han *et al*., 2019; Makanyeza *et al*., 2021).

H4. Awareness of consequences has a significant positive relationship to loan repayment behavioural intention.

Ascription of responsibility refers to an individual's perception of who is responsible and stable in a particular event, such as their financial situation (Stem, 2000). In this MFI context likewise, the ascription of responsibility can influence their motivation and commitment to repay their loans on time. They may feel a sense of obligation and commitment to repay their loans to avoid negative consequences and maintain their financial stability and reputation.

H5. Ascription of responsibility has a significant positive relationship to loan repayment behavioural intention.

Personal norms refer to an individual's internalized beliefs about what is right and wrong, it constitutes appropriate behaviour in a given situation (Fenitra *et al*., 2021, 2022). In our study perspective, personal norms can influence their motivation and commitment to repay their loans on time.

H6. Personal norms have a significant positive relationship to loan repayment behavioural intention.

3.3 Service quality model (SERVQUAL)

It is a popular framework for measuring service quality. It was developed by Zeithaml, Parasuraman and Berry in the 1980s and has since been widely used in both academic research and business practice. The model consists of five dimensions, including tangible, reliability, responsiveness, empathy and assurance. Satisfaction is an emotional response that is derived from the services customers receive (Olawole, 2021). So, the customer's behaviour is a result of the level of satisfaction. Various existing studies have evidence that service quality significantly influence customer satisfaction and behavioural intention (Ali *et al*., 2018; Hong *et al*., 2020).

Client's satisfaction refers to an individual's overall evaluation of the products and services provided by the MFI and their level of satisfaction with their experience. However, customer satisfaction can influence their motivation and commitment to repay their loans on time. MFI clients who are satisfied with the products and services provided by the MFI may be more likely to give precedence to loan repayment and make efforts to repay their loans on time. Based on this relationship, the following hypotheses were developed.

H7. Service quality has a significant positive relationship to a client's satisfaction.

Service quality and behavioural intention are closely related in the context of microfinance institution clients (Kanyurhi, 2017). Service quality refers to the level of excellence or superiority of the products and services provided by the MFI, while behavioural intention refers to an individual's planned or intended behaviour towards the MFI.

H8. Client satisfaction has a significant positive relationship to loan repayment behavioural intention.

Understanding what can increase the repayment rate of MFI is vital to MFI literature. Even more so, MFI client satisfaction ensures continuity in the programme is an indicator used to know the borrower's repayment intention. In this way, the research work tries to understand this gap through TPB, NAM and SERVQUAL models.

4. Methodology

4.1 Data collection

To gain insights into behavioural aspects and service quality of MFIs, the study employed three frameworks, namely, TPB, NAM and SERVQUAL. The primary data was collected through a

structured questionnaire-cum-face-to-face interview. The survey was conducted in Khordha district of Odisha. The Inclusive Financial Status Report Odisha (2020) highlights that around 50 financial institutions, including 28 non-banking financial company-microfinance institutions (NBFC-MFI) are actively operating in Odisha. These institutions provide diversified financial services, with a significant focus on empowering women through tailored financial products. Khordha has consistently been recognised as a district with a high level of financial inclusion and continuously under high-level financial inclusion category from 2010 to 2020 (Guru and Panda, 2022; Tung, 2023). All respondents in this study were women who availed loans through joint liability groups (JLGs). The study used a convenience sampling technique. This method was adopted to address practical challenges in assessing the sampling frame of MFI beneficiaries. The sampling units were selected based on availability and willingness to participate.

A structural questionnaire was sent to 300 women clients. Out of 300 samples, 65 samples were dropped due to incomplete and inconsistent responses. A total of 235 fully completed questionnaires were received, which generated a response rate of 78.33%. The structured questionnaire was initially designed in English and then translated into the regional language (Odia). The size of the group varies from five to maximum of 20 number. A five-point Likert scale was used to assess each item of the study. The data collection was conducted between December 2022 and February 2023, during which the researcher visited the client's location in person and explained to the clients about the research and questionnaire.

4.2 Data analysis

The study used a two-stage method to develop a structural model using a multivariate analysis procedure. The confirmatory factor analysis (CFA) was used to test the relationship between constructs and estimate the validity and reliability of the model. Structural equation modelling (SEM) was employed to test the proposed hypotheses of the study. The ML estimation method was used to measure the structural paths and factor loadings (Gunduz and Elsherbeny, 2020). The study focused on the issue of measurement model validity and reliability and model fit indices. Also, the study addressed the mean of each item.

In regard to SEM, it has been suggested that 10:1 is minimally acceptable or ten times the largest number of predictors for any dependent variable in the model. Other literature suggested that the number of samples should not less than 200 (Hair *et al*., 2009).

4.2.1 Model specification, identification and estimation. This study focused on the model specification, which is limited to both formative and reflective procedures. To examine the association between constructs, a first-order and second-order measurement model was employed. The first-order measurement model investigated the relationship among dimensions of service quality (SERVQUAL) and the constructs represented in the model, namely, assurance, empathy, reliability, responsiveness and tangible. These SERVQUAL dimensions have been widely utilized in various studies and are also employed in this study to measure clients' intention to repay loan amounts. Additionally, this study incorporates other constructs, including perceived behavioural control (PBC), subjective norm (SN), attitude (AT), awareness of consequences (AWC), ascription of responsibility (AR) and personal norms (PN) to assess the relationship with behavioural intention (BI) of clients. To test the proposed hypotheses and explore the relationship between constructs, a structural equation modelling (SEM) model was established.

4.2.2 Discussion of measurement model. Firstly, this study performed CFA on SERVQUAL dimensions on the initial model (Perkins *et al*., 2020) and investigated model fit using CFI, GFI, and RMSEA indices, as recommended by Hair *et al*. (2019) for the sample size of $n = 235$ and no. of observed variables was 20. The initial model had an unacceptable fit CFI = 0.875 (<0.90), GFI = 0.845 (<0.90) and SRMR = 0.10 (>0.05). Therefore, the initial model was re-evaluated.

The researcher assessed multivariate normality (test for normality and outlier) in the initial model using CR (z-score) value of skewness and kurtosis for each observed variable using a

cut-off value of skewness and kurtosis does not exceed the range (±1.96). The items RS3 and AS2 were removed from the model based on a high z-score value (CR for skewness >8). Also, based on the recommended modification indices provided by the AMOS software with underlying theoretical considerations, two pairs of error terms were allowed to correlate based on high modification indices value, i.e. RL3-RL4 and RL3-RL2 in the final CFA model.

Furthermore, the researcher performed another CFA on the loan repayment intention of clients regarding MFIs and investigated model fit with 30 observed variables. The initial model was very close to goodness of fit, CFI = 0.853 (<0.90), GFI = 0.830 (<0.90) and SRMR = 0.06 (>0.05). The variable AWC3 and AR1 were removed from the model based on a high CR value.

The final CFA model was examined, and the assessment of goodness-of-fit indices was crucial in evaluating the adequacy of the model and determining how well the items measured their respective constructs. The goodness-of-fit indices were used to assess the model fit in this study are presented in Table 1.

The study assessed various fit indices to evaluate the goodness of fit for the CFA models. It followed the rule of thumb, which recommends relying on at least one absolute fit index and one incremental fit index and examining the x^2 results. For the CFA model of SERVQUAL dimensions, the x^2 value was 273.99 with 123 degrees of freedom and for the loan repayment intention of clients to MFIs, the x^2 value was 648.47 with 321 degrees of freedom. Both x^2 values were statistically significant ($p < 0.01$). As shown in Table 1, the measurement model demonstrated a good fit. The x^2/df (normed Chi-square) values for both models were below the recommended threshold of 3.00 (Hair *et al*., 2014a, b). The RMSEA (root mean square error of approximation), an absolute fit index, reported values of 0.07 and 0.06 for the two models, which are below the acceptable range of 0.08. The standardized root mean square residual (SRMR) value was 0.05 for both models, meeting the cutoff criteria.

Moving on to the incremental fit indices, the comparative fit index (CFI), the most widely used index, surpassed the recommended cutoff of 0.90. The other incremental fit indices also exceeded the suggested threshold values as presented in Table 1. The Parsimony fit index (PNFI) values were 0.68 and 0.69, which also surpassed the guideline range.

Table 1. CFA goodness-of-fit statistics

Fit index measure	Threshold Hair *et al*. (2009)	SERVQUAL dimensions	BI of clients	Result
Chi-square (x^2)	–	273.99	648.47	
Degree of freedom (df)	–	123	321	
x^2/df	Between 2 and 5	2.22	2.02	✔
Absolute fit measures				
Goodness-of-fit index (GFI)	>0.90	0.88	0.90	✔
Root mean square error of approximation (RMSEA)	<0.08	0.07	0.06	✔
Root mean square residual (RMR)	0.05 or less	0.04	0.04	✔
Incremental fit indices				
Normed fit index (NFI)	>0.90	0.85	0.85	✔
Comparative fit index (CFI)	>0.90	0.91	0.90	✔
Tucker–Lewis Index (TLI)	>0.90	0.89	0.90	✔
Relative fit index (RFI)	>0.90	0.82	0.82	✔
Parsimony fit indices				
Adjusted goodness-of-fit index (AGFI)	>0.80	0.84	0.81	✔
Parsimony normed fit index (PNFI)	>0.60	0.68	0.67	✔

Source(s): The authors

Based on the CFA results, it can be concluded that the measurement model for SERVQUAL dimensions and clients' loan repayment intention achieved a good fit. Therefore, it is deemed suitable to proceed with further examination of the results from the structural model.

4.2.3 Evaluation of the reliability and construct validity of measurement model. To evaluate the reliability of the 46-item questions and 13 latent constructs, Cronbach's alpha reliability test was employed. The reliability analysis results, as shown in Table 2, indicated that the overall alpha value for the 46 items was 0.965. Furthermore, the alpha values for the fourteen constructs ranged from 0.689 to 0.792. All of these values surpassed the minimum threshold of 0.70 for Cronbach's alpha coefficient, demonstrating satisfactory reliability (Na-Nan and Saribut, 2020). It should be noted that the constructs "attitude" (0.696), "subjective norms" (0.691) and "behaviour intention" (0.689) were close to the 0.70 threshold. Despite this, these constructs were included in the study for further analysis.

The measurement model's unidimensionality was evaluated by examining the standardized factor loadings, and it was observed that all items had loadings exceeding the 0.5 threshold (Hair *et al*., 2014a, b). This suggests that each factor demonstrated strong internal consistency and the measurement model fulfilled the criteria for unidimensionality. Based on these findings, the researcher concluded that the observed variables exhibited excellent reliability in measuring their respective latent variables (Perkins *et al*., 2020).

Convergent validity was assessed through confirmatory factor analysis (CFA), which provided valuable insights. In CFA, the correlation between all items within a construct was examined. To establish convergent validity, individual standardized factor loadings (regression weights) need to be at least 0.5. Additionally, the average variance extracted (AVE) value should be equal to or greater than 0.5 and the composite reliability (CR) should exceed 0.7. These thresholds are widely accepted as minimum requirements for construct validity (Hair *et al*., 2019; Gunduz and Elsherbeny, 2020).

The factor loadings of the 18 observed variables representing SERVQUAL dimensions ranged from 0.543 to 0.822. A standardized regression factor loading value exceeding 0.50 is considered statistically significant (Kim and Muller, 1978; Hair *et al*., 2014a, b; Na-Nan and Saribut, 2020). Malhotra and Birks (2006) and Gunduz and Elsherbeny (2020) have stated that AVE is a more stringent measure compared to CR and that convergent validity can be

Table 2. Measurement model, item loadings, construct reliability and construct validity of SERVQUAL dimensions

Constructs	Items	Mean	Cronbach's alpha	CR
Assurance	AS4	4.04	0.723	0.68
	AS3	4.39		
	AS1	3.39		
Empathy	EP4	4.23	0.747	0.747
	EP3	4.20		
	EP2	4.40		
Responsiveness	RS4	4.20	0.795	0.701
	RS2	4.32		
	RS1	4.23		
Tangible	TG4	4.09	0.777	0.789
	TG3	4.21		
	TG2	4.37		
	TG1	4.07		
Reliability	RL4	3.96	0.786	0.756
	RL3	4.17		
	RL2	4.32		
	RL1	4.01		

Source(s): The authors

adequately assessed based on CR alone. In our study, all constructs exhibited a CR value greater than 0.70, ranging from 0.697 to 0.795. It should be noted that a CR value exceeding 0.70 is considered statistically significant (Hair *et al*., 2014a, b).

To assess the convergent validity of the alternative model for clients' behaviour intention, various measures were examined, including the standardized regression factor loadings of items, composite reliability and average variance extract. As shown in Table 3, all standardized factor loadings in the final model exceeded 0.50, ranging from 0.543 to 0.822. The composite reliability (CR) values remained above 0.70, ranging from 0.688 to 0.792.

Fornell and Larcker (1981), according to the study inference, if the AVE is below 0.50 but the CR value exceeds 0.60, the construct still demonstrates adequate convergent validity. Based on this, the researcher established the obtained results. Upon examining Tables 2 and 3, it can be observed that the Cronbach's alpha, CR and factor loading values for all items surpassed their respective threshold values. Therefore, the reliability and construct validity of the model were successfully confirmed.

Moreover, heterotrait-monotrait (HTMT) ratio was used to test discriminant validity. The cut-off for HTMT ratio should be less than 0.90 (Hair *et al*., 2014a, b). The output result (Table 4) of the HTMT ratio shows less than 0.90 (range 0.39–0.90). Thus, the evaluation revealed that HTMT values were less than 0.90, which signifies the constructs are appropriate and accepted for further study.

4.2.4 Common method bias. Due to the use of self-administered questionnaires and self-reported data in our study, we have conducted a common method bias (CMB) analysis to

Table 3. Measurement model, item loadings, construct reliability and construct validity of BI of clients

Constructs	Items	Mean	Cronbach's alpha	CR
Personal norms	PN4	4.26	0.779	0.779
	PN3	4.28		
	PN2	4.23		
	PN1	4.25		
Attitude	AT3	4.11	0.696	0.700
	AT2	4.16		
	AT1	4.14		
Perceived behavioural control	PBC3	4.21	0.729	0.740
	PBC4	4.16		
	PBC2	4.18		
	PBC1	4.18		
Subjective norms	SN3	4.17	0.691	0.689
	SN2	4.19		
	SN1	4.18		
	SN4	4.16		
Awareness of consequences	AWC2	4.20	0.723	0.724
	AWC1	4.20		
Ascription of responsibility	AR3	4.23	0.746	0.751
	AR2	4.15		
Client's satisfaction	CS4	4.21	0.792	0.799
	CS3	4.34		
	CS2	4.34		
	CS1	4.12		
	CS5	4.40		
Behavioural intention	BI4	4.46	0.689	0.719
	BI3	4.29		
	BI2	4.29		
	BI1	4.28		

Source(s): The authors

Table 4. Heterotrait-monotrait (HTMT) ratio

Factors	AR	AWC	AT	PBC	SN	BI	RS	AS	CS	RL	EP	TG
AWC	0.53											
AT	0.78	0.61										
PBC	0.82	0.72	0.81									
SN	0.74	0.71	0.89	0.88								
BI	0.77	0.67	0.89	0.87	0.85							
RS	0.59	0.42	0.58	0.56	0.52	0.70						
AS	0.78	0.65	0.88	0.80	0.75	0.85	0.60					
CS	0.72	0.62	0.67	0.78	0.73	0.81	0.50	0.72				
RL	0.69	0.64	0.90	0.56	0.79	0.89	0.59	0.86	0.73			
EP	0.78	0.65	0.83	0.90	0.87	0.89	0.64	0.90	0.82	0.88		
TG	0.53	0.63	0.75	0.66	0.82	0.73	0.39	0.74	0.67	0.75	0.80	
PN	0.89	0.65	0.78	0.89	0.77	0.89	0.58	0.77	0.77	0.79	0.83	0.68

Source(s): The authors

ensure that the findings remain free from bias. Common method bias happens when dependent and independent variables are measured in one survey using the same response method (Kock *et al.*, 2021). This paper adds a unique contribution to the existing MFI literature by addressing the problem associated with CMB in relation to survey questionnaires. In this regard, Harman's single factor test was employed by putting all items together into an exploratory factor analysis (EFA) and principal component analysis (PCA) with an unrotated factor solution that was used to examine the problem of CMB (Podsakoff *et al.*, 2003). The Harman's single factor result revealed that the unrotated factor accounted for only 35.40% of the total variance, which is less than the threshold of 50% (Fuller *et al.*, 2015). According to the test, there was no problem with CMB in this study.

4.2.5 Structural model assessment. The results of the measurement model indicated that both models exhibited a good fit based on the threshold values for goodness of fit. Additionally, the measurement model demonstrated reliability and validity for both models. After assessing the reliability and validity, structural equation modelling (SEM) was utilized to test the proposed hypotheses of the study. The standardized factor loadings of the final model (Figure 2) were examined using AMOS 20.0 software, and path analysis results were presented in Table 5. The results of the structural modelling (hypothesis validation) were also displayed in Table 5.

The SEM model focused on evaluating the overall fit of the integrated model of SERVQUAL dimensions and clients' behaviour intention. The results showed that the chi-square (x^2) value was 2,889.42 with significance level below 0.05. The x^2/df (normed chi-square) value was 2.95, and the RMSEA value was 0.08. All of these measures fell within a good range and indicated a good fit. Thus, it can be concluded that the structural model achieved a satisfactory overall fit (Hair *et al.*, 2014a, b).

Out of the eight hypotheses tested, five hypotheses were supported and accepted as the *p*-values were below the 0.05 threshold (Hair *et al.*, 2019). The estimated results indicated that attitude ($\beta = 0.278$, $t = 4.1$), ascription of responsibility ($\beta = 0.134$, $t = 1.9$) and personal norms ($\beta = 0.292$, $t = 4.4$) had a significant positive relationship with behaviour intention (BI). Therefore, hypotheses H3, H5 and H6 were accepted. On the other hand, perceived behavioural control ($\beta = 0.04$, $t = 0.88$), subjective norm ($\beta = 0.09$, $t = 1.6$) and awareness of consequences ($\beta = 0.05$, $t = 1.2$) were found to have an insignificant relationship with behaviour intention. Thus, hypotheses H1, H2 and H4 were not supported in this study. The findings indicated that SERVQUAL had a significant positive relationship with the client's satisfaction ($\beta = 0.41$, $t = 8.5$) and the client's satisfaction showed a significant relationship with behaviour intention ($\beta = 0.39$, $t = 4.7$). Therefore, hypotheses H7 and H8 also were

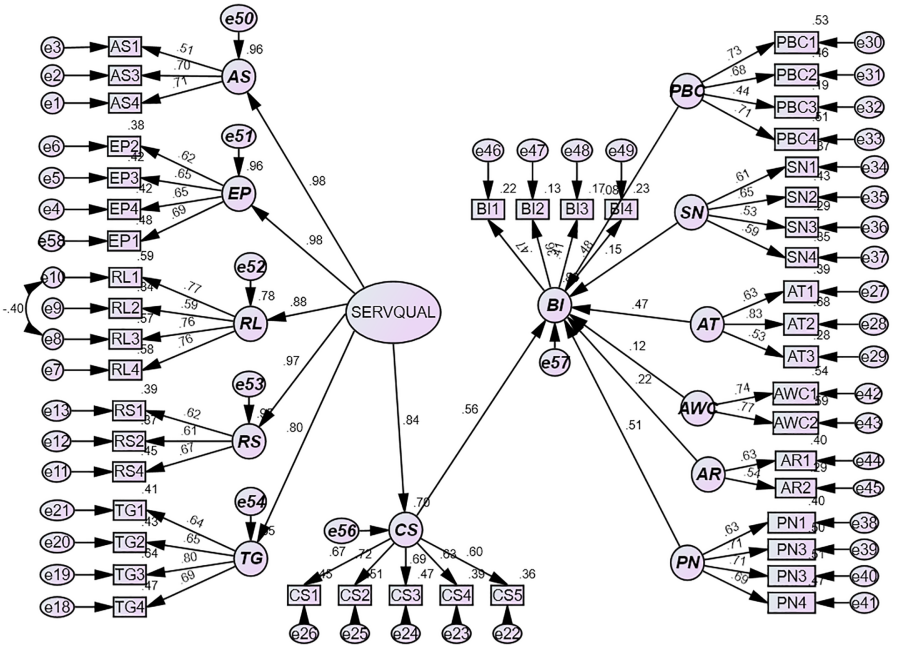

Figure 2. Standardized structural equation model. Source: The authors

Table 5. Hypotheses validation

Paths		Std. regression weight (β)	*t*-value	*p*-value	Result
H1	BI ← PBC	0.041	0.888	0.375	Not accepted
H2	BI ← SN	0.097	1.612	0.107	Not accepted
H3	BI ← AT	0.278	4.146	0.000	Accepted
H4	BI ← AWC	0.058	1.283	0.199	Not accepted
H5	BI ← AR	0.134	1.970	0.049	Accepted
H6	BI ← PN	0.292	4.414	0.000	Accepted
H7	CS ← SERVQUAL	0.414	8.474	0.000	Accepted
H8	BI ← CS	0.394	4.740	0.000	Accepted

Source(s): The authors

accepted. The researcher also observed that the SERVQUAL dimensions, namely assurance, empathy, reliability, responsiveness and tangible had a positive and significant relationship with SERVQUAL (see Table 6).

4.2.6 Result discussion. The results of the integrated model assessing the loan repayment behaviour intention of clients towards MFIs revealed several interesting findings. Firstly, it was found that attitude, ascription of responsibility and personal norms had a significant positive relationship with behaviour intention. Among these constructs, personal norms exhibited the highest t-value and lowest *p*-value, indicating a strong and significant impact on BI. This suggests that clients' loan repayment behaviour is influenced by their personal beliefs and sense of responsibility. Clients who feel a sense of guilt when unable to repay their loan on

Table 6. SERVQUAL structural path analysis

Constructs	Std. Regression Weight (β)	*t*-value	*p*-value	Decision
AS ← SERVQUAL	0.736	11.83	0.000	Supported
EP ← SERVQUAL	0.597	10.52	0.000	Supported
RL ← SERVQUAL	0.744	11.45	0.000	Supported
RS ← SERVQUAL	0.644	10.91	0.000	Supported
TG ← SERVQUAL	0.551	9.37	0.000	Supported

Source(s): The authors

time and prioritise fulfilling their financial obligations are more likely to have a higher intention to repay.

Secondly, perceived behavioural control, subjective norms and awareness of consequences were found to have an insignificant relationship with behaviour intention. Clients expressed confidence in MFIs and believed they had control over their financial resources to manage loan repayments. Similarly, clients' awareness of consequences of defaulting on loan repayment and subjective norms did not play a significant role in shaping their behavioural intention.

The third finding highlighted the importance of service quality in measuring client's satisfaction towards MFIs. SERVQUAL was found to be positively linked to client's satisfaction. The five dimensions of SERVQUAL were found to have a favourable impact on client's satisfaction, indicating that providing high-quality services can enhance client's satisfaction. The finding emphasised a strong positive relationship between SERVQUAL and client's satisfaction. This suggests that a positive perception of service quality enhances client's decision to avail finance from MFIs and positively influences their intention to repay their loans.

Lastly, the study found that a client's satisfaction also has a significant relationship with behaviour intention. Although clients believed that MFIs' services met their expectations and would recommend them to others, this translated into a significant impact on their intention to repay the loan amount.

5. Conclusion

Indeed, India is a developing country with a population of over 1.3bn people and a large chunk of the population yet to be bankable. This presents unique challenges and opportunities for MFIs. It is important to acknowledge the unique economic, social and cultural factors that may influence the repayment behaviour of MFI clients. The magnitude of the influence of individual repayment behaviour on group behaviour in the MFI context highlights the need for current research in this area. The findings of the study suggested that personal norms, attitude and ascription of responsibility have a significant positive influence on behaviour intention towards loan repayment. Perceived behavioural control, subjective norms and awareness of consequences showed insignificant relationships with behaviour intention in the context of MFIs. Service quality dimensions were found to be critical in measuring a client's satisfaction and had a significant positive impact on a client's satisfaction. This demands a strong focus on brightening up the training programmes to create massive awareness about the consequences of loan defaults, benefits of prompt payments, financial literacy, accountability and a responsible attitude towards loan repayment.

5.1 Implications

MFIs possess a robust social mission of extending financial services to low-income and underserved communities. Their capacity to provide credit and other financial services could

assist in reducing poverty and promoting economic growth. MFIs have a strong record of providing financial services responsibly and sustainably. The study has made contributions both in theory and practice by employing an integrated model to examine the behavioural aspects of MFI clients. It is essential to investigate the behavioural dimension of MFI clients because it provides insights into the factors that influence their decision-making regarding financial services. By employing the TPB, NAM and SERVQUAL models to examine the behavioural dimension of MFI clients, the study provides valuable insights that can be used to update policy and practice in the microfinance sector.

Firstly, our study highlights personal norms, attitude and ascription of responsibility as key determinants of clients' loan repayment intentions in using microfinance services. These factors should be taken into consideration when designing marketing strategies, communication campaigns and client education programmes aimed at improving the eminence of microfinance services. Secondly, our study emphasised that perceived behavioural control, subjective norms and awareness of consequences have no significant relation with behaviour intention. This requires a deep understanding of clients' financial behaviour, attitudes expectations, continuous feedback and engagement with clients to ensure their satisfaction. MFIs provide personalised, customer-centric and high-quality financial services that meet the diverse needs and preferences of their clients.

Finally, the study found that a client's satisfaction exhibits a significant relationship with behaviour intention. Although clients believed that MFIs' services met their expectations and would recommend them to others, this translated into a significant impact on their intention to repay the loan amount. The study underscores the importance of building strong relationships between MFIs and their clients based on mutual trust, transparency and accountability. This can be achieved through effective communication, feedback mechanisms and client protection policies that safeguard clients' rights and interests. MFIs need should be regularly evaluated and monitored to provide better service quality, which would enhance a sense of belongingness and strengthen client's relationships.

5.2 Practical implications

The success of MFIs is built on two fundamental pillars, i.e. the responsibility and accountability of their clients. These pillars are crucial to ensure that loans are effectively disbursed and repaid and that parties uphold their commitments. Loan officers play a crucial role in group-based lending with repayment teams (GRT) by facilitating the loan application and disbursement process, monitoring loan repayment behaviour, providing financial education and support to group members. They are responsible for building relationships with clients, assessing their creditworthiness and ensuring that loans are repaid on time. Loan officers also act as mentors and coaches to group members, helping them to improve their financial literacy, budgeting and money management skills. By providing this support and guidance, loan officers can help to strengthen the GRT model and contribute to the overall success of MFIs.

To improve loan repayment behaviour of MFI clients, it is important to consider factors that can influence their perceived behavioural control, such as financial education, access to financial resources and support from the MFI loan officers and management, as a result of which clients may be more likely to repay their loans on time, which can benefit both the MFI and the clients. Likewise, the findings of the study suggested that personal norms, attitude and ascription of responsibility have a significant positive relationship with behaviour intention, whereas perceived behavioural control, subjective norms and awareness of consequences have insignificant relationships with loan repayment behaviour intention. Service quality had a significant positive impact on the client's satisfaction.

Perceived behavioural control, subjective norms, awareness of consequences and client's satisfaction can be enhanced by providing education to clients on the benefits of timely loan repayment, creating a sense of community among clients that reinforces positive loan repayment behaviour and leveraging social pressure or social incentives to encourage clients

to repay their loans on time. MFIs management and policymakers must also focus on addressing any misconceptions or negative attitudes of any clients that they may have towards loan repayment and incentivising positive repayment behaviour through rewards or recognition. MFIs should also emphasize training programmes to educate the clients on the potential negative outcomes of defaulting on their loans, providing clear and transparent information about interest rates and penalties and offer support to clients who may be struggling to repay their loans on time. Future studies can be conducted to measure the financial education influence on MFI client's behavioural control.

5.3 Limitations

The participants in this study are individuals who are considered vulnerable, including those who have low income and low education levels and usually face challenges in accessing financial services. As a result of these challenges, some participants were hesitant to share sensitive information, fearing it could impact their ability to obtain financing. This study is based on primary data collected through a survey questionnaire and is limited to a specific location, Khordha district, Odisha. The estimated results may not be fully representative of the broader population parameters. However, the findings of this study can still be valuable to MFIs for policymaking and designing effective strategies. By considering the specific characteristics and challenges faced by vulnerable populations in Odisha. MFIs can use the findings of this study to develop tailored approaches that better meet the needs of their clients.

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