Factors affecting borrowers' turnover in microfinance institutions: A panel evidence

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Abstract

In the era of competitiveness, clients or borrowers remain an important asset for financial institutions, as they are the ultimate source of revenue. Although the departure of clients from one microfinance institution (MFI) to another is a common phenomenon, the manner in which organizational characteristics affect turnover is largely unknown in the context of the microfinance industry. Hence, by utilizing recent (2010–18) data on 235 MFIs from the global microfinance industry, this study investigates the factors affecting the borrower turnover rates (BTR) of MFIs by employing conventional panel regression techniques. To overcome endogeneity and ensure robust and dynamic results, the generalized method of moments (GMM) has also been used in this study. The findings reveal that the efficiency-wage and financial self-sufficiency of MFIs reduce BTR, while staff turnover rate, write-off ratio and average loan size increase BTR. Our results remain robust even after controlling for several market and macro-economic factors. The findings could be utilized to generate several policy implications to reduce borrowers' turnover.

KEYWORDS
microfinance, borrower turnover, employee turnover, efficiency-wage, gender, microfinance institutions

1 | INTRODUCTION

The initiation of the microfinance model in the mid-1970s by Professor Muhammad Yunus was devoted to the noble purpose of improving the impoverished condition of the poor by catering for their financial needs for sustainable entrepreneurial activities and better livelihood. Since then microfinance has been reckoned as a preferred development tool in many developing countries because of its favourable impacts towards the wellbeing of the poor. To be more specific, the industry has served a minimum of 140 million clients with a total loan portfolio of US$ 124 billion in 2018, which is a promising trend according to Microfinance Barometer (2019).

Microfinance institutions (MFIs) play a crucial role in the overall development of a country, as they are observed to be efficient in the alleviation of poverty, creation of a financial balance between households' deficit and surplus and contribution to the national tax revenue (Nawaz, 2010).[1] However, despite their undeniable contribution to the overall economy of a country, MFIs have been experiencing numerous challenges and difficulties while they continue to progress in successful operation. Among the various challenges, the dropout[2] of clients[3] has been observed to be one of the main focuses of MFIs in recent years owing to the mission drift scandal (Bauwin, 2019), and its adverse effects on the survival of MFIs (Morduch, 1999; Rahman & Rahman, 2014). Although management literature has emphasized the role of employees' turnover on firms' performance (De Winne et al., 2019; Hancock et al., 2013), the factors affecting borrowers' turnover have been largely ignored, at least in the context of the microfinance industry. This issue is gaining more significance due to the overall high rate (20–24%) of borrowers' turnover globally (see Figure 1) and its possible threat to the survival of rapidly growing MFIs (Cohen, 2002). As per the survey report of Statista (2018), BTR in the global microfinance industry (as per our estimate) is very close to the rate of customer's turnover reported in banking (25%), financial services (22%), IT and software (23%), but exceed that of insurance (17%), automotive and transportation (17%), and professional services (16%).[4]

There are many benefits associated with the retention of existing clients. For example, clients are the main source of revenue for any company or institution. A vast and efficient clientele base can help a company or organization to survive in the market by generating sufficient revenue to cover up costs. Moreover, lower borrower turnover will have a favorable effect on the overall performance of MFIs, as the existing clients use more of the firms' products, and offer word-of-mouth advertisement to attract new clients (O'Cass & Grace, 2004). Furthermore, preventing the dropout of clients help to reduce administrative costs and default risks, and also increase the financial productivity of institutions (Mustafa, 1996; Pagura et al., 2001).

In comparison, establishing a relationship with new clients has proven to be costlier (Liu et al., 2011) and detrimental to MFIs' achievement of financial and outreach goals, especially on the occasion when old and loyal borrowers leave the institution (Pawlak & Matul, 2004; Urquizo, 2006). Since the operational mission and vision of MFIs revolve within the borrowers' spectrum, MFIs need to retain their existing borrowers and attract prospective clients for a longer period by

[1] Institutions which provide small scale loan facilities to people without collateral via utilization of the microfinance concept are often known as MFIs.

[2] Dropout and turnover are interchangeably used in this study.

[3] Clients and borrowers are interchangeably used in this study.

[4] The survey reported customer retention rate (CRR) and we use the "1 − CRR" formula to get customer turnover rate. For more detail of the estimation procedures of CRR and other aspects of the data, see https://www.statista.com/statistics/1041645/customer-retention-rates-by-industry-worldwide/

FIGURE 1 The trend of borrower turnover rates in the global microfinance industry (2010–18)
Source: Author's estimate based on secondary data.
Notes: Industry mean values of borrower turnover rate were used to draw Figure 1. The number of yearly observations (in parentheses) used to calculate the mean are as follows: 2010(145), 2011(115), 2012(133), 2013(140), 2014(158), 2015(169), 2016(193), 2017(173), and 2018(155). The trend of borrower turnover may also be affected by the number of observations used to estimate the industry mean value
[Colour figure can be viewed at wileyonlinelibrary.com]

rendering the best possible financial services. Thus, clients should always be regarded as important assets determining the long-term sustainability of a firm (Gupta et al., 2004). As an instance, minimizing borrowers' turnover or retaining existing clients in MFIs is not only necessary to maintain the financial sustainability of MFIs but also for social outreach, which is the core business and value generation strategy of MFIs, via service to the poor (Urquizo, 2006).

Hence, the practitioners of MFIs have realized the need to focus on ways to retain existing customers (Islam, 2011; Westover, 2008). By doing so, they can survive and continuously render financial services to the poor, subsequently realizing the sustainable development goals (SDGs). Moreover, an understanding of what makes a borrower dropout from an MFI remains an interesting topic among practitioners, policymakers and academics, due to the scarcity of relevant literature on the subject. Thus, this study aims to examine how organizational (including gender diversity) factors affect borrowers' turnover in MFIs.

Our study contributes in several ways to the existing literature. For example, several studies have examined borrower's turnover problems by considering cross-sectional setting. However, these studies attempted to investigate the factors affecting borrowers' turnover by only taking into account the individual-level factors (see literature review section for more detail). Our study expands the literature by examining organizational-level factors rather than individual characteristics. In this regard, we examine the key drivers of borrowers' turnover by linking it with the efficiency-wage theory, mission drift and capital structure of MFIs, among others. In most of the literature, the efficiency-wage hypothesis was tested to understand employee's turnover/retention (Guthrie, 2000; Salop, 1979). However, we have employed the efficiency-wage hypothesis in our study to assess its effect on the overall borrower's turnover problem, as we strongly believe that higher wages (above the market) will mitigate the agency problem between MFIs (principal) and their employees (agent) and promote a better and quality service towards borrowers, thereby reducing borrower's turnover. Furthermore, the aspects of mission drift—a heated topic in the microfinance literature involving MFIs' prioritization of their financial gain over social outreach (Mia & Lee, 2017; Varendh-Mansson et al., 2020)—were not considered in the past investigations on the borrower turnover phenomenon. Hence, including this aspect in our analysis will further

strengthen and expand the debate of mission drift. Nonetheless, the underlying effects of capital structure on various dimensions of MFIs' performance are well documented (Khachatryan et al., 2017; Pascal Ndaki1 et al., 2018); however, the changes in financing/capital options could alter the MFIs business model. For example, donation or equity-based financing may emphasize outreach, while debt-based financing may prioritize financial sustainability (Mia et al., 2021). Therefore, understanding how the capital structure could affect borrower turnover in MFIs would be a significant contribution to the literature.

In addition, a major contribution of our study is related to the managerial implications. Since we are dealing with organizational-level factors, the findings will guide the management of MFIs in understanding the turnover problem from various perspectives. For instance, management of MFIs could do little in changing the borrower's perspective; however, they can largely control organizational factors to mitigate the effect of borrower's turnover. Therefore, the findings will aid in the formulation of realistic policies towards the existing issues. Also, the analysis of borrower's turnover was controlled by the several market and macroeconomic variables, which provides a better and broader understanding of the turnover problems experienced in the MFIs. Finally, our study analyzes recent and large global samples by utilizing both the static and dynamic model of borrowers' turnover, which is rarely found in the existing literature. The advantage of such vast and updated samples along with robust econometric techniques is the availability of fresh and comprehensive evidences for managers and practitioner in MFIs to make a timely and realistic decision.

After analyzing the secondary data by employing the fixed effect modeling (FEM)/random effect modeling (REM; which is preferred), fractional regression and generalized method of moments (GMM) techniques, the results were discovered to be promising. Although slight differences exist between these models at the coefficient and significant levels, most of the findings remain consistent across the models. In summary, our findings strongly suggest that providing wages above the market level could mitigate the problem of borrower turnover due to the reduction in agency problems. In contrast, if MFIs face problems of employees' turnover, a higher borrower turnover due to relationship banking principles would be experienced. Moreover, imposing larger loan amounts to minimize the cost of service/delivery and attain financial sustainability may result in higher borrower turnover problems. This finding is very similar to the concept of mission drift/trade-off hypothesis in microfinance. This implies that when MFIs prioritize their financial interest by catering for wealthier clients, their outreach performance will suffer, as more borrowers will consider leaving the organization. That being established, operationally self-sufficient MFIs will have resources to invest in products and process innovations to provide better services to retain their clients.

The findings of the study highlighted several policy implications to the management and policymakers. As an instance, our findings recommend that management of MFIs take employee welfare as a core agenda in planning their operations. Their focus should be directed towards enhancing financial and non-financial benefits of employees to encourage them to give their best, since efficiency wage and staff turnover have been observed to have significant effects on borrowers' turnover. Nonetheless, the management of MFIs should also improve their policies towards achieving operational sustainability, as this will promote further investment in product development and in turn incentivize their clients. Our findings also reiterate the importance of market and macroeconomic factors that should be taken into consideration by managers and practitioners of MFIs to mitigate the borrower turnover problem.

The rest of the paper is structured as follows: Section 2 derives the conceptual framework, reviews previous studies and discusses the selected variables; Section 3 presents the discussion

on methodology (e.g., modelling, sources of data and descriptive statistics); Section 4 reports and discusses the results; Section 5 presents the conclusion and policy implications; and Section 6 provides limitations and guidelines for future studies.

2 | CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

2.1 | Review of the concept and literature

Generally, borrowers' or clients' turnover is of two types: forceful termination by MFIs (involuntary) and voluntary dropout by clients (Murphy, 2018). The factors triggering the intentional withdrawal of borrowers from MFIs include loan size, loan types, saving facilities, non-financial products, after-service monitoring, personal factors and poverty alleviation (Cohen, 2002; Escalante & Rusiana, 2018; Meyer, 2002; Nayak, 2014; Pearlman, 2014). The intentional withdrawal from an MFI is also affected by the service quality, the exponential competition at the marketplace, the reputation of the institutions, the comparative cost of loans, etc. Moreover, clients also refrain from taking loans from MFIs due to systemic and idiosyncratic shocks that lessen their financial capacity and eventually decrease possibilities to retain their membership in the MFI (Dackauskaite, 2009). On the other hand, the turnover of the borrowers in any MFI also relies on the overall organizational and financial performance and efficient management capabilities of the institution. Sometimes, MFIs allegedly drop bad borrowers to salvage their financial performance from being affected by poor loan quality. In addition to that, several studies also highlighted organizational failures, idiosyncratic shocks and/or systemic shocks, client maturity, and market competition as factors leading to the dropout of customers from MFIs (Hulme et al., 1999; Pagura, 2004; Pagura et al., 2001; Siliki, 2013).

Over time, the increase of new entrants and growth of the microfinance industry has increased competition among MFIs. According to Cumming et al. (2017), the microfinance sector has undergone significant changes over the last four decades. At the moment, the industry has become more diversified sector-wise, has a more heterogeneous clientele, and has become more complex in terms of popularity of its institutional arrangements. The invasion of the microfinance market by profit-oriented commercial banks has further intensified the competition since the year 2000 (Assefa et al., 2013; Kar, 2016). Despite the competition being regarded as a stimulating factor for product market development, innovation and efficiency according to the classical economic theory, it may be detrimental to the status of MFIs as a mission-driven institution (Hossain et al., 2020). This profit-oriented competition among MFIs diminishes their service quality, induces their reluctance to promote their product quality, deteriorates relationship with customers, and restrains efficiency of the management (Khavul, 2010).

The profit-driven motive of MFIs has augmented the number of micro-financial providers in the market. Not only has the emergence of new entrants enhanced the competition in microfinance, but had also resulted in mission drift problems as the majority of them prioritize financial sustainability over outreach goals. Surprisingly, only a few MFIs in the world have been focusing more on customer welfare, as opposed to the profit maximization motive exhibited by other MFIs (Churchill, 2000; Islam, 2011). The profitability of MFIs is largely dependent on the satisfaction and loyalty of its clients (Nawaz, 2010; Shahriar, 2012). When existing clients are satisfied with the treatment by MFIs, they tend to play ambassadorial roles for them. In their conversation with others, they subconsciously advertise the MFIs, leading to an increase in the number of customers and the realization of more profits (Kotir & Obeng-Odoom, 2009; Shahriar, 2012). How-

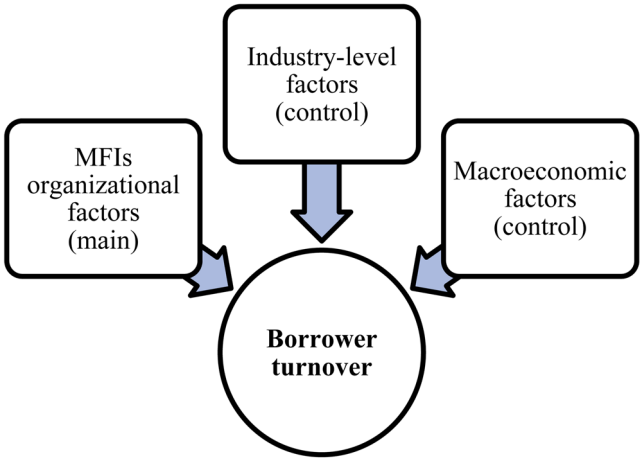

FIGURE 2 Conceptual framework of borrower turnover in MFIs [Colour figure can be viewed at wileyonlinelibrary.com]

ever, to become sustainable in the competitive environment, MFIs usually adopt an aggressive operational approach to book new accounts for their institutions (Cull et al., 2009; Melik, 2010; Morduch, 1999), which may, to some extent, result in a lesser focus on the welfare of existing clients; therefore, resulting in even higher turnover problems.

Since microfinance remains an integral part of a country's economic system, the success and failure of MFIs are contingent upon many external factors including macroeconomic and institutional factors (Ahlin et al., 2011; Inekwe, 2019; Tanin et al., 2019). As an instance, studies have discovered the effect of macroeconomic factors (e.g., GDP growth, financial sector development, inflation, institutional quality, etc.) on the financial performance (Imai et al., 2011; Schulte & Winkler, 2019), social outreach (Awaworyi Churchill, 2019a; Mia & Lee, 2017) and innovation (Babu, 2016; Mia, 2020b; Mustafa et al., 2018) of MFIs. As such, the assessment of borrowers' turnover would be incomplete without due consideration of the macroeconomic factors.

Considering the lending mechanism of microfinance and the above discussion, the factors influencing borrowers' turnover can be categorized into four: individual, organizational, market level and macroeconomic. Since individual characteristics are beyond the scope of this study, only the three factors of borrower turnover in MFIs are considered. The conceptual framework of this study is depicted in Figure 2.

Studies encompassing the understanding of the factors of borrowers' turnover is limited, particularly from an institutional and macroeconomic perspective. The empirical study of Rahman and Rahman (2014) in the context of Bangladesh shows myriad reasons compelling clients to leave MFIs. These factors include the high-interest rate on loans but low on savings, the conflict between medium and small size loans, cancellation of membership, the sudden death of clients, religious issues, unprofessional behavior of loan officers, natural disasters, and lack of industrial regulatory policies, quality services, product facilities, and cooperation. In Zimbabwe, the empirical study by Pearlman (2014) shows the growing rate of clients' exit from MFIs. However, it is worth noting that not all clients are loan defaulters since income, wealth, and shock incidence force clients to exit from MFIs. Analyzing a large sample in the Malawian context, Epstein and Yuthas (2013) observed that client retention was significantly higher in rural markets, with the dropout of clients from MFIs being detrimental to financial sustainability. In South Africa, clients detach from MFIs for many reasons, including death or illness of family members, conflict in the family, disaster occurrence, collapse of the business and fortnightly payment systems (Simanowitz, 2000).

2.2 | Selection of variables

In this section, we outline and discuss the specific independent (organizational) and control (market and macroeconomic) variables to explore the possible relationship existing between extant literature and theories on BTR. Moreover, the inclusion and discussion of the independent/control variables are dependent on the availability of the data.

The efficiency wage (EW) is one of the crucial organizational factors that may affect the borrower turnover. The term EW refers to a value higher than the market average wage. In the event of lower wages, the proportion of high-quality workers willing to take the job will also be lower, and contrastingly, higher wages will motivate employees to give their best efforts (Solow, 1979). The essence of the EW theory is that wages are not fully determined by market forces and that higher wages potentially improve the well-being of workers and increase their productivity. As such, employees will try their level best to achieve organizational goals. Moreover, an attractive wage rate decreases employee turnover and increases labor quality and productivity due to incentive effects (Cheng & Xu, 2004). Thus, it is expected that remuneration above the market level will enhance staff morale and encourage them to put in their best in maintaining existing clients. As such, a negative relationship between the EW and BTR is hypothesized in this study.

With the emergence of several MFIs and rapid growth in the microfinance industry globally, the staff of MFIs will also have options to switch from one institution to another. One of the major drawbacks of staff turnover (STR) is the depletion of human capital and skills. The dropout of employees from institutions sometimes affects borrowers' dropout (Ahmed et al., 2016; Bilau et al., 2015), as borrowers may lose interest in the firm following the departure of their loan officers. Moreover, when existing employees are replaced by new ones due to employee turnover (voluntary or involuntary), the incumbent employees may provide accurate and bad news about their repayment prospects to the management, thereby, resulting in a more forceful expulsion by the MFIs. A similar outcome has been recorded in the studies of Hertzberg et al. (2010); whereby, a successor reports more accurate and negative information about borrowers' repayment history, owing to the lack of consequences on his/her career. Thus, regardless of the type of employee turnover, a positive association between STR and BTR is expected.

Since the inception of microfinance, the global client base has always been dominated by female folks (Mia, 2020a). Compared to male clients, female clients are more inclined to repay loans without being acclaimed defaulters and this significantly augments the profit margin of MFIs (Abdullah & Quayes, 2016). Studies have shown that female borrowers have better-repaying record than their male counterparts, resulting to an acceleration in the financial performance of MFIs (Gibbons & Kasim, 1991; Hossain, 1988; Hulme, 1991; Hulme & Mosley, 1996; Khandker et al., 1995). MFIs would, therefore, continue to keep the dropout of their female clients in check at all costs. Nonetheless, female clients are considered more loyal in microfinance lending (Velasco & Marconi, 2004); hence, a higher percentage of female borrowers (PFB) would have a negative effect on the overall BTR.

The financial services of microfinance are rendered to borrowers through loan officers serving as nexuses between institutions and borrowers. Loan officers usually play eminent roles in ensuring that the dual objectives of microfinance, namely institutional sustainability and social outreach of financial services are realized. Moreover, the reason for borrower turnover greatly depends on the quality of services and borrower–loan officer relationship. A crucial study by Drexler and Schoar (2014) documented that if the loan officers of a particular borrower are on leave (or dropout), the borrower's access to loans from the same bank become difficult, prompt-

ing them to turn to a different institution/bank. In this regard, MFIs are more eager to recruit female loan officers, since their client base is female dominated. Compared to their male counterparts, female officers are considered to be better in handling and monitoring female customers and are closer to them, preventing their dropout (Ghosh & Guha, 2019). This phenomenon is better explained by the gender-similarities hypothesis in the microfinance context (Mia, 2020a). Moreover, due to short-term nature of the loan and its frequent payment installments (weekly or monthly), clients of MFIs frequently meet with their loan officers, consequently building their loyalty (Godfroid, 2019). Once such a relationship has been established between the clients and loan officers, it becomes unlikely for clients (e.g., female) to abandon the MFI. Thus, a negative relationship is expected between the female loan officers (PFLO) and the BTR.

MFIs require financial sustainability to cover their costs from revenue and reduce dependency on external sources of funding. However, a deterioration in financial sustainability will result in lower service quality and weakening of the MFI–borrower relationship (Hossain et al., 2020). Moreover, a financially sustainable MFI would be able to invest in product development, employment benefits, training and other associated programs that will ultimately enhance their competitiveness in the industry. Thus, it is expected that the operational-self-sustainability (OSS) will have a negative effect on the BTR.

Moreover, the cost of loan interest rates (which is a proxy of the portfolio yield, PY) is one of the important determinants dictating the switch of borrowers from one MFIs to another. Generally, microfinance borrowers are mostly located at the bottom of the pyramid in the society. This category is mostly unemployed or earns very little income that barely covers their basic needs. Although the financially excluded category will prefer to take loans from relatively less stringent MFIs by projecting their financial demands to upgrade their status in the society, responsible borrowers will always make decisions based on the cost and benefits of taking loans. If the cost of a loan is high (in terms of the charged interest), acceptance of such loan becomes irrational, considering its cost and benefit. Thus, on the occasion where an MFI charges relatively high-interest rates for its loans, borrowers become demotivated to take loans from the MFI. Therefore, a positive relationship between PY and BTR is expected.

The two potential outcomes of the loan size (ALBGNI) and borrower turnover are hypothesized in this study. First, in the desperate attempt of borrowers to improve their status, they seek larger loan amounts (higher loan size), resulting in their switch from the existing MFI to a new one, which is often driven by Maslow's hierarchical need theory. Maslow's need theory has been utilized in the demonstration of borrowers' financial and social requirements, poverty alleviation, empowerment and funding gaps (Brau et al., 2015; Hadi et al., 2015). Microfinance borrowers often believe that securing higher loan amounts would help them in achieving higher productivity. However, MFIs are skeptical towards disbursing higher loan amounts, if set institutional requirements are not fulfilled by borrowers. Thus, if the offered loans by MFIs are lower than demand, borrowers may switch to other financial institutions for larger loans. Second, there is ample research explicating why MFIs charge high interest rates, a part of which is as a result of the high cost of lending due to a small loan amount (Abrar, 2019; Al-Azzam & Parmeter, 2019). Studies also discovered that larger loan amounts reduce operating costs and increase the profit margin of MFIs (Mersland & Strøm, 2010). As a result, MFIs try to offer large-scale loans to minimize their operating costs, a phenomenon known as mission drift. Since the majority of MFI clientele are either poor or extremely poor, loan pushing (to take larger loan) of MFIs may demotivate the borrowers from continuing with them, if the loan offered is significantly higher than their requirement. This is true in a sense that poor people usually have less appetite for larger

loans. Therefore, from the borrowers' perspective, the loan size is an influencing factor propelling their switch from one institution to another, owing to the insufficiency or relatively high loan size.

Product diversification, continuous credit demand, donations, and international organizations' promotion of financial inclusion have supported the rapid growth of several MFIs worldwide, particularly since 2005 (Cull & Morduch, 2017; Mia et al, 2019).[5] The increase in the size of MFIs may lead to economies of scale and better performance, which ultimately reduce borrower turnover (Copestake, 2007). As an instance, large MFIs can take advantage of their extensive facilities, diverse workforce, product varieties and vast network to retain their clients. Furthermore, large size also allows firms with bargaining power to manage their supplier and clients (Dean et al., 1998). On the other hand, larger MFIs struggle with the coordination of their various departments and concentrate less on client's welfare. In contrast, smaller firms are favored with the initiation of aggressive competitive challenges, speedy delivery of services and prompt execution of business strategies over their bigger counterparts (Ha-Brookshire, 2009). Given the aforementioned, a positive association may also exist between firm's size and borrower turnover. Therefore, a mix (positive and negative) association between size of MFIs (SIZE) and BTR is anticipated in this study.

Considering the overall repayment collection, the microfinance industry has been able to manage high repayment rates with the aid of group lending mechanisms; however, the presence of bad loans in their portfolio still persists. Higher loan write-off ratios (WRTOFFR) will eventually result in the lower financial performance of MFIs due to their inability to recover principal loans and associated interest rates (Schäfer & Fukasawa, 2011). Since the attainment of financial sustainability has become one of the core objectives of MFIs in recent years (Awaworyi Churchill, 2019b), management of MFIs may allegedly drop vulnerable clients that are unable to maintain the repayment schedule. Thus, it is expected that a higher WRTOFFR will eventually result in a higher BTR in a bid to maintain the financial sustainability of MFIs.

To better understand the dynamics between the financing/capital structure and borrower turnover, two important variables have been included in our analysis, namely capital asset ratio (CAR) and debt to equity ratio (DTE). While MFIs face considerable challenges in funding their microfinance programs, equity capital contributed by donors and investors remains a significant source of funding for MFIs (Tchuigoua, 2016). Majority of the equity investors are interested in expanding microfinance loan programs to a wider audience and often do not require higher returns from such investments. Thus, it is assumed that higher equity financing will focus more on expanding the clients base and retaining existing clients through various incentives to the borrowers. Therefore, a negative relationship between CAR and BTR is expected. On the other hand, many MFIs also dependent on debt financing which usually comes with stringent requirements, higher costs and short repayment period. Nonetheless, a high DTE will also reflect the high indebtedness and insolvency of MFIs (Omare, 2019). Thus, MFIs may take precautions by filtering out bad borrowers and imposing stringent requirements on its clients. As a result, MFIs may expel clients who are susceptible to default. Thus, a positive association between DTE and BTR is envisaged.

Analyzing the borrower turnover of MFIs would be incomplete without controlling the macroeconomic factors, as performance of MFIs also depends on country-wise context (Ahlin et al., 2011). As such, commonly used macroeconomic variables, namely Growth Domestic Product Growth

[5] United Nations declared 2005 the year of microcredit. Subsequently in 2006, Professor Yunus along with his Grameen Bank's associates received the Nobel Peace Prize. These recognitions attracted financial and technical contribution of several investors and donors to various MFIs worldwide, resulting in the rapid growth of global MFIs.

(GDPG), inflation (INFL), unemployment rate (UEM), Foreign Direct Investment (FDI), and Real Interest Rates (RINT) were included in this study as control variables. An overall expansion of the economy and the FDI will expand economic activities and potentially increase the demand for domestic credit (Nguyen et al., 2018; Ramírez Guerra, 2017); hence, it is expected that borrowers will continue to take loans, resulting in a negative effect on borrower turnover. Nonetheless, an overall expansion of the economy inspires financial and economic activities, which facilitates potential demand in the domestic financial market, resulting in the adequate presence of MFIs and financial intermediaries. Economic growth also promotes inclusive financial affairs to maximize financial outreach to people in general. The increase in inflation and real interest rates will reduce demand for credit as borrowing will become more expensive (Maiti et al., 2020; Nguyen et al., 2018), resulting in borrowers quitting MFIs and an overall increase in the turnover rate. However, higher unemployment on the other hand will motivate people to venture into new businesses, resulting in an increase in demand for credit and a lower turnover.

Our study also includes one of the market-level variables (competition) as a control to better understand the borrower turnover. The level of competition and its implication to borrower turnover gets more complex nowadays with the surge of formal financial institutions tapping into the market. Competition may force MFIs to exclude poor borrowers from their list, and offer large loan amounts to safe and wealthy clients (Jia et al., 2016). This, in turn, results in the non-voluntary drop out of clients. As a result, a change in lending operations due to intense competition in the market may affect the provision for small loans and the number of active borrowers of MFIs (Hossain et al., 2020). Consequently, borrowers often become influenced by the competition in the market, which ultimately leads them to switching from one MFI to another. Hence, competition within the microfinance industry and overall financial industry have been expressed in terms of the Herfindahl–Hirschman Index (HHI, net loans outstanding) and BOONE indicators respectively, and both of the variables are considered in this study.

3 | METHODOLOGY

3.1 | Modelling the borrower turnover of MFIs

Given the objective of the study and discussion above, the following empirical expression of the model is considered:

$$\begin{aligned} BTR_{j,i,t} = {} & \beta_0 + \beta_1 EW_{j,i,t} + \beta_2 STR_{j,i,t} + \beta_3 PFB_{j,i,t} + \beta_4 PFLO_{j,i,t} + \beta_5 OSS_{j,i,t} + \beta_6 PY_{j,i,t} \\ & + \beta_7 ALBGNI_{j,i,t} + \beta_8 WRTOFFRj, i, t + \beta_9 LNSIZE_{j,i,t} + \beta_{10} CAR_{j,i,t} \\ & + \beta_{11} DTE_{j,i,t} + \beta_{12} HHI\_L_{j,i,t} + \beta_{13} BOONE_{j,\,t} + \beta_{14} GDPG_{j,\,t} + \beta_{15} INFL_{j,\,t} \\ & + \beta_{16} UEM_{j,\,t} + \beta_{17} RINT_{j,\,t} + \beta_{18} FDI_{j,\,t} + \varepsilon_{j,i,t} \end{aligned} \quad (1)$$

where *BTR* is the percentage of clients that leave a particular MFI denoted by *i*, located in a country *j* at a given year *t*. The original dataset reported the borrower retention rate (BRR).[6] However, for

[6] Active borrowers at the end of the reporting period divided by the sum of active borrowers at the beginning of the reporting period and new borrowers during the reporting period.

ease of analysis and interpretation, we have recalculated BTR using the 1 − BRR formula.[7] The $\varepsilon_{j,i,t}$ denotes the error term. The expected relationship between dependent and independent variables are discussed in light of the existing theories and literature in the previous section; hence, they are not discussed here again. However, the definitions of each of the variables and their expected sign in relation to borrower turnover are reported in Table 1.

Since the study deals with panel data, Equation (1) can be estimated in several ways such as the random effect model (REM) and fixed effect model (FEM). To identify the model that better fits in our study, the Hausman test was performed. Moreover, the robust standard errors have also been estimated to overcome any potential heteroskedasticity in the REM and FEM models. The year and regional effect has also been considered in the estimation of Equation (1), stated otherwise.

Apart from running the static model, this research also employs the two-step system generalized method of moments (GMM) of Arellano and Bover (1995), and Blundell and Bond (1998), to minimize endogeneity issues, obtain unequivocal estimators and examine the dynamic relationship between *BTR* and other factors of MFIs for robustness purposes. One reason for employing the GMM in this study is due to the presence (suspected) of the simultaneity bias, which may result in endogeneity issues. As an instance, it is suspected that the BTR may affect the financial performance of MFIs, particularly OSS and WRTOFFR. For example, on the occasion an MFI observes a high level of borrower turnover, no financial transactions including loan disbursements, interest payments and other financial activities will be observed with the dropped-out clients. Thus, higher BTR may also affect OSS and WRTOFFR. Moreover, the static model estimated above may also suffer from variable selection bias; thus, employing the GMM to estimate the coefficient value of each of the earlier included independent variables would overcome such issues (if there is any).

Moreover, the system GMM is more efficient as it carries small variances, which consequently encourages accurate estimation (Blundell & Bond, 1998). This is owing to the fact that the two-step system GMM runs two equations simultaneously: first step, in levels, lagged first differences are considered as instruments; and second step, in first differences, lagged levels are considered as instruments (Ahamed & Mallick, 2019). In the following conditions, the GMM is more appropriate: (i) when T is small and N is large ($N > T$), (ii) when the nature of the dependent variable is dynamic, (iii) when control variables might correlate with the error term, and (iv) when heteroskedasticity can be observed in the data (Ahamed & Mallick, 2019; Azmi et al., 2019; Blundell & Bond, 1998). All highlighted conditions are relevant to our dataset. Hence, the two-step system GMM can provide a more accurate estimation after endogeneity, serial correlation, and heteroskedasticity issues have been controlled. The Hansen (1982) test of over-identification was used to test the validity of the instruments with a null hypothesis of no-correlation between residual and instrumental variables. The Arellano–Bond (AR 2) test with a null hypothesis of no second-order autocorrelation was considered in the identification of the second-order serial correlation.

[7] Generally, borrower turnover rate can be considered as the opposite of the borrower retention rate.

TABLE 1 Definition of variables

Variable	Definition	Expected sign
BTR	1 − BRR	
EW	Average personnel expense / GNI per capita of an MFI minus industry (global) mean value of the same variable	−
STR	Percentage of staff (permanent and contract) that have left the financial institution during the last reporting year divided by the average number of permanent and contract staff for the period	−
PFB	Percentage of female borrowers	−
PFLO	Percent of female loan officers	−
OSS	Financial revenue / (Financial expense + Net impairment loss + Operating expense)	−
PY	Financial revenue from loan portfolio / Average gross loan portfolio	+
ALBGNI	Average loan balance per borrower / GNI per capita	+/−
WRTOFFR	Value of loans written-off / Average gross loan portfolio	+
LNSIZE	Natural logarithm of tangible assets that are held by an MFI for use in the production or supply of goods or services, or for administrative purposes	+/−
CAR	Capital asset ratio is Total equity / Total assets	−
DTE	Debt to equity ratio is the ratio of Total Liabilities / Total Equity	+
HHI	The Herfindahl–Hirschman Index is defined as the sum of the squared market shares based on the loan portfolio of the MFI in the relevant market.	−
BOONE	The Boone indicator is a measure of competition and is expressed as the elasticity of profits to marginal costs.	+
GDPG	Annual growth of gross domestic product	−
INFL	Inflation rate (annual), Consumer prices	+
UEM	Unemployment, total (% of total labor force) (modeled ILO estimate)	−
FDI	Foreign direct investment, net inflows (% of GDP)	−
RINT	Real interest rate (%)	+

Source: Author's compilation from the MIX Market metadata, World Development Indicators (WDI) and World Governance Indicators (WGI).

The empirical expression of the GMM is as follows:

$$\begin{aligned} BTR_{j,i,t} = {} & \beta_0 + \beta_1 BTR_{j,i,t-1} + \beta_2 EW_{j,i,\,t} + \beta_3 STR_{j,i,\,t} + \beta_4 PFB_{j,i,\,t} + \beta_5 PFLO_{j,i,\,t} \\ & + \beta_6 OSS_{j,i,\,t} + \beta_7 PY_{j,i,\,t} + \beta_8 ALBGNI_{j,i,\,t} + \beta_9 WRTOFF_{j,i,\,t} + \beta_{10} LNSIZE_{j,i,\,t} \\ & + \beta_{11} CAR_{j,i,\,t} + \beta_{12} DTE_{j,i,\,t} + \beta_{13} HHI\_L_{j,i,\,t} + \beta_{14} BOONE_{j,\,t} + \beta_{15} GDPG_{j,\,t} \\ & + \beta_{16} INFL_{j,\,t} + \beta_{17} UEM_{j,\,t} + \beta_{18} RINT_{j,\,t} + \beta_{19} FDI_{j,\,t} + \varepsilon_{j,i,t} \end{aligned} \tag{2}$$

Furthermore, the key dependent variable of our interest (BTR) is continuous and confined within the range of 0 to 1; hence, fractional Probit and Beta regression have also been estimated (Equation (1)) in conjunction with the existing studies (Dorta, 2016; Ferrari & Cribari-Neto, 2004) and are reported in Section 4.

3.2 | Data and sources of data

To execute the research objectives of this study, the secondary data of organizational level characteristics of MFIs including gender diversity was required. Although a handful of domestic (e.g., data from the Microcredit Regulatory Authority of Bangladesh) and global sources (CGAP, World Bank FinDex data, etc.) exist, the Microfinance Information Exchange (MIX) market remains the world's largest platform for MFI-related data. Due to the credible, extensive and standardized data provided by the MIX Market, it has been extensively used by researchers across the globe. Galema et al. (2011) reported that MIX Market data are converted to contemporaneous exchange rates and closely monitored to ensure the provision of valid and authentic data by the participating MFIs. Moreover, it has also been acknowledged that the MIX market dataset is the representative random sample of best managed MFIs across the world (Krauss & Walter, 2009). Hence, data of MFIs from the MIX market was employed in this study. What is worth noting about this dataset is its collaboration with the World Bank to release more comprehensive data for free since late 2019. This initiative has been applauded by researchers and academics that extensively rely on such databases for assessing various aspects of MFIs performance.

The dataset is relatively huge; thus, some filtering techniques allowing the better use of quality data was employed. It is also worth noting that the data supplied by financial service providers (FSP) also known as MFIs, to the MIX Market is voluntary, resulting in them being inconsistent throughout the years. This translates to the fact that many MFIs do not provide data every year, resulting in imbalance. To better understand the dynamics of the borrower turnover and other associated factors, an attempt was made to capture those MFIs that consistently provided data to the MIX Market over the years.

Our initial exploration revealed that prior to 2010, there was hardly any data related to borrower turnover, which partly explains the absence of such analysis in literature in the early 2000s. Nonetheless, the dataset was still incomplete in 2019; hence, the sample period between 2010 and 2018 was selected. Sequel to the execution of the relevant program in Stata (14 version), a total of 235 MFIs were initially observed to have sufficient data in the chosen study period. Although the total sample was 235, a slight reduction was observed when the regression analysis was considered, owing to missing data of several variables. A similar outcome was also observed in the study by Kar and Swain (2018). Hence, the exact number of groups being used in each of the regression columns in Section 4 have been reported. Additionally, the World Bank catalogue provided the

TABLE 2 Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
BTR	1,381	0.222	0.116	0.010	0.450
EW	1,938	0.000	2.397	−2.752	5.248
STR	1,720	0.205	0.147	0.020	0.560
PFB	1,936	0.684	0.239	0.290	1.000
PFLO	1,800	0.369	0.250	0.000	0.880
OSS	2,027	1.179	0.182	0.880	1.600
PY	1,989	0.240	0.143	0.080	0.620
ALBGNI	2,016	0.552	0.640	0.040	2.430
WRTOFFR	1,889	0.018	0.023	0.000	0.080
LNSIZE	2,045	13.301	1.794	9.965	16.288
CAR	2,058	0.270	0.181	0.080	0.740
DTE	2,038	4.272	3.031	0.290	11.350
HHI_L	2,100	0.389	0.285	0.095	1.000
BOONE	2,088	-0.071	0.060	−0.164	0.036
GDPG	2,115	4.627	2.262	0.099	7.996
INFL	2,115	4.984	2.923	0.417	11.804
UEM	2,106	5.243	3.215	0.771	13.105
RINT	1,593	6.782	5.610	−0.876	19.976
FDI	2,115	3.243	2.956	0.383	11.097

Source: Based on World Bank data.

financial and company metadata of MFIs in a separate excel file, and these have been combined in a single file based on the MFI's unique identification number.

Apart from the MIX Market data, our study also utilized other secondary databases related to macroeconomic and market-level (Competition-Boone Indicator) factors. The macroeconomic and market-level variables (BOONE) were obtained from the World Development Indicators (WDI) and World Governance Indicators (WGI) of the World Bank.

3.3 | Descriptive statistics and multicollinearity

To minimize the effect of outlier in the results, the variables have been winsorized at the 5% and 95% percentile levels, as a conventional practice. The winsorized descriptive statistics is reported in Table 2, which reveals the average borrower turnover rate (BTR) as approximately 22% in the global microfinance market and could rise to a staggering 45%. In contrast, the average staff turnover rate (STR) is approximately 20%, which is lower than the *BTR* in our sample. In terms of efficiency-wage (EW), the mean value is positive, depicting the existence of MFIs that provide wages above the market level. That being noted, there are also MFIs paying wages which are lower than the industry average, as the minimum value is negative. Our dataset also revealed an average of 68% female borrowers (PFB) with a mere 37% female loan officers (PFLO). Interestingly, there are also MFIs having no PFLO, as the minimum value is 0; however, the sample has a minimum of 29% PFB.

With regards to competition within the microfinance industry, it is quite modest as a mean value of HHI_L = 0.389 is observed (the maximum value of 1 indicating a purely concentrated market). Moreover, a negative mean value of BOONE also indicates the relative competitiveness of the overall financial industry in the selected countries. Our sample also included countries that have observed a relatively high GDP growth, as the maximum value is approximately 8%. Inflation is quite modest, as the value ranges from 0.417 to 11.804. Moreover, a great variation could also be observed in the real interest rates (RINT), as the minimum and maximum values were −0.876 and 19.976 respectively. A positive net FDI value indicates that the sampling countries have received more FDI inflows than outflows.

To test for the presence of multicollinearity in the regression analysis, the pairwise correlation and variance inflation factors (VIF) were estimated (see Table 3). The values of the VIF and pairwise correlation were observed to be within the conventionally acceptable limit (usually 0.8 and 10 for pairwise correlation and VIF respectively), indicating the lack of multicollinearity.

4 | RESULTS AND DISCUSSION

4.1 | Static model

After running the regression analysis for Equation (1) both by FEM and REM, the results indicate that the REM is preferred over FEM for all models. Thus, we discuss the main findings of this study based on the REM model. The overall significance of the estimated models and explanatory power measured by Chi^2 and R^2 respectively, can be considered satisfactory (see Table 4, REM models). Around 19% of the variations in dependent variables can be explained by the included independent variables (REM models).

Table 4 shows that the coefficient of efficiency-wage (EW) is negative and statistically significant on the borrower turnover rate (BTR) across the models, indicating that higher wages will reduce borrowers' turnover in MFIs. This result suggests that the efficiency-wage scheme has an incentive effect on capable employees by encouraging them to render quality services to the borrower, thereby reducing borrower turnover. Our findings on the lower borrower turnover effect of efficiency wage is consistent with the arguments of Giménez-Nadal et al. (2020) and Cheng and Xu (2004), who remarked that an efficient structure of wages provides better services to clients and enhances their loyalty.

On the other hand, positive and statistically significant coefficients of staff turnover indicate the dropout of some borrowers along with members of employee, highlighting the effect of long-term employee–client interpersonal relationships. This finding is also consistent with the aforementioned efficiency-wage hypothesis, in that attractive wages incentivize employees to build a long-term relationship with clients (Cheng & Xu, 2004). Since the operational self-sufficiency (OSS) of MFIs is regarded as a long-term sustainability indicator, a negative and significant relationship with the borrower turnover was observed at all conventional significance levels. This implies the ability of financially well-off MFIs to invest in quality products and services to help retain their customers.

Our study also revealed a positive and statistically significant effect of ALBGNI and WRTOFF to BTR. This outcome, to our knowledge can be explained in the following way: First, the positive effect of ALBGNI could be associated with the mission drift of MFIs, which involve their provision of large-scale loans to their clients in a bid to minimize the cost of loans delivery and installments collection. Studies have revealed that operating smaller loan size increases the

TABLE 3 Variance inflation factors and pairwise correlation

Variables	VIF	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) EW	2.300	1.000																	
(2) STR	1.220	−0.158	1.000																
(3) PFB	2.600	−0.329	0.054	1.000															
(4) PFLO	1.270	−0.178	−0.061	−0.004	1.000														
(5) OSS	1.390	−0.048	−0.117	0.151	0.020	1.000													
(6) PY	1.590	−0.166	0.267	0.154	0.135	0.027	1.000												
(7) ALBGNI	3.100	0.616	−0.092	−0.522	−0.162	−0.082	−0.304	1.000											
(8) WRTOFFR	1.350	−0.118	0.285	−0.113	0.065	−0.178	0.382	−0.105	1.000										
(9) LNSIZE	1.460	0.277	−0.093	−0.343	−0.047	0.006	−0.087	0.362	0.057	1.000									
(10) CAR	3.710	−0.183	0.086	0.162	0.206	0.351	0.350	−0.271	0.149	−0.333	1.000								
(11) DEBT	3.390	0.202	−0.095	−0.165	−0.113	−0.267	−0.358	0.352	−0.146	0.310	−0.795	1.000							
(12) HHI_L	1.350	−0.049	−0.009	−0.054	0.055	0.031	0.286	−0.113	0.168	0.000	0.147	−0.125	1.000						
(13) BOONE	1.610	0.053	−0.222	−0.167	0.148	−0.087	−0.285	0.063	−0.208	0.027	−0.158	0.146	−0.127	1.000					
(14) GDPG	1.390	0.138	−0.017	0.265	−0.232	0.068	−0.144	0.109	−0.242	−0.028	−0.141	0.111	−0.175	−0.145	1.000				
(15) INFL	1.190	−0.024	0.026	0.221	−0.057	0.055	−0.082	−0.136	−0.071	−0.140	0.069	0.025	0.106	−0.198	0.147	1.000			
(16) UEM	1.510	−0.103	0.004	−0.232	0.138	0.085	0.091	−0.092	0.168	−0.048	0.260	−0.252	0.308	−0.257	−0.172	0.088	1.000		
(17) RINT	1.460	0.166	−0.082	−0.352	0.048	−0.042	−0.054	0.180	−0.033	−0.006	0.063	−0.053	0.011	−0.193	−0.085	−0.168	0.319	1.000	
(18) FDI	1.190	0.225	0.039	−0.093	−0.143	0.016	0.122	0.207	0.079	0.022	0.075	−0.100	0.073	−0.255	0.137	−0.028	−0.004	0.167	1.000
Mean VIF	1.840																		

Source: Authors' computation based on secondary data.

TABLE 4 Factors affecting borrowers' turnover in MFIs (FEM and REM)

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
	Dependent variable: Borrower turnover rate					
	REM	FEM	REM	FEM	REM	FEM
Organizational factors						
EW	−0.005**	−0.010***	−0.005**	−0.010***	−0.008***	−0.008*
	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.004)
STR	0.087***	0.068**	0.088***	0.066**	0.089***	0.088**
	(0.025)	(0.032)	(0.025)	(0.033)	(0.029)	(0.038)
PFB	0.027	−0.012	0.027	−0.011	0.030	−0.029
	(0.035)	(0.078)	(0.036)	(0.081)	(0.042)	(0.095)
PFLO	−0.001	−0.029	−0.003	−0.035	0.004	−0.014
	(0.018)	(0.039)	(0.018)	(0.040)	(0.022)	(0.054)
OSS	−0.082***	−0.082***	−0.088***	−0.086***	−0.062**	−0.072**
	(0.022)	(0.027)	(0.023)	(0.029)	(0.026)	(0.035)
PY	0.057	0.059	0.069	0.071	0.063	0.081
	(0.043)	(0.060)	(0.045)	(0.062)	(0.044)	(0.066)
ALBGNI	0.037***	0.061***	0.037***	0.059***	0.040***	0.059***
	(0.008)	(0.014)	(0.009)	(0.014)	(0.012)	(0.019)
WRTOFFR	1.318***	1.198***	1.350***	1.201***	1.213***	1.071***
	(0.212)	(0.281)	(0.221)	(0.298)	(0.248)	(0.338)
LNSIZE	0.002	−0.001	0.002	−0.001	0.002	0.002
	(0.003)	(0.007)	(0.003)	(0.007)	(0.003)	(0.009)
CAR	0.005	0.077	0.012	0.084	0.005	0.101
	(0.037)	(0.065)	(0.037)	(0.067)	(0.043)	(0.076)
DTE	−0.005**	−0.000	−0.005**	−0.000	−0.003	0.002
	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.004)
Market level factors						
HHI_L			−0.005	0.044	−0.028	0.024
			(0.016)	(0.053)	(0.020)	(0.062)

(Continues)

TABLE 4 (Continued)

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
	Dependent variable: Borrower turnover rate					
	REM	FEM	REM	FEM	REM	FEM
BOONE			0.083	0.206	0.356***	0.166
			(0.078)	(0.279)	(0.129)	(0.325)
Macroeconomic factors						
GDPG					−0.007***	−0.008***
					(0.002)	(0.003)
INFL					0.001	−0.000
					(0.002)	(0.002)
UEM					−0.003	−0.006
					(0.002)	(0.005)
RINT					0.002**	0.003*
					(0.001)	(0.001)
FDI					0.003*	0.003
					(0.002)	(0.002)
Year effect	Yes	Yes	Yes	Yes	Yes	Yes
Regional effect	Yes	No	Yes	No	Yes	No
CONS	0.248***	0.253**	0.262***	0.246**	0.259***	0.241
	(0.051)	(0.117)	(0.051)	(0.123)	(0.062)	(0.160)
Observations(groups)	1134(226)	1134(226)	1116(223)	1116(223)	791(167)	791(167)
F-Statistics		5.007***		4.652***		3.706***
Chi^2	243.38***		249.62***		215.55***	
R^2	0.190	0.091	0.195	0.094	0.191	0.131
Hausman Test(*p*-value)	20.250 (0.380)		19.790 (0.535)		16.880 (0.913)	

Source: Author estimate. Heteroskedastic corrected robust standard errors are in parentheses. *Note*: Regional effects were dropped under the fixed effect model.

***$p < 0.01$

**$p < 0.05$

*$p < 0.1$.

overall operating expenses of MFIs (Ek, 2011; Rosenberg et al., 2013) and thus negatively affect their financial sustainability. Therefore, MFIs may allegedly engage in "loan-pushing" activities, in which a client is forced to take larger loans. In this case, if the expected loan amount is larger than the amount requested, the borrower may become disinterested in the transaction and ultimately withdraw from that particular MFI. Second, the statistically significant and positive effect of WRTOFF on BTR reflects the need for MFIs to drop verified bad borrowers (defaulted, irregularities in repayment, etc.) to maintain better financial performance. All financial institutions learn about their borrowers' repayment habit after granting them a loan (Marquez, 2002), thus enabling their classification into either bad or good borrowers in subsequent loans. Borrowers guilty of poor repayment behavior are deemed unworthy for future financial transactions and are subsequently excluded by MFIs. This action of alleged expulsion by MFIs may be justified, as the amount of loans is not sufficiently (or not at all) covered by the collateral (physical) (Rosenberg et al., 2013).

Besides, it was discovered that a higher DTE results in a lower turnover, as the coefficient sign is negative and statistically significant in models 1 and 3, which is in contrast to our a priori expectation. However, in control of the market for macroeconomic factors, the statistical significance of DTE is lost. Unfortunately, gender diversity (loan officer and borrowers' level), portfolio yield, capital asset ratio and size were not found to be statistically significant in any of the models reported in Table 4.

We also found interesting result of market level factors on BTR. Considering the competition levels in the overall financial industry, a significant effect of BOONE indicators on borrowers' turnover has been discovered in this study. This implies that a higher competition in the financial industry will result in more options for existing borrowers, making it easy for them to switch to formal financial institutions. This becomes even more justifiable as other financial lenders have invested in microfinance businesses and are pursuing lower-end retail banking to wider audiences (Galema et al., 2011; Littlefield & Rosenberg, 2004). With respect to this, the findings of Vanroose and D'Espallier (2013) also indicated that MFIs compete with banks in countries having well-developed financial system. Additionally, existing studies have also hinted at possible loan poaching in microfinance lending (Wisniwski, 2010); whereby, suppliers of microloans compete to attract borrowers from each other including formal financial institutions that are keen on tapping into this segment of the market.

In terms of macroeconomic factors, our findings are in line with existing theories that higher GDP growth will result in more business opportunities for entrepreneurs; hence, it becomes highly unlikely for them to leave MFIs, as indicated in the negative and statistically significant relationship existing between GDP growth and BTR. On the other hand, the RINT and FDI were found to have positive and statistically significant effects on the BTR. A plausible explanation is that an increasing overall interest rate will result in an increase in the overall cost of business, the outcome of which may prompt borrowers to discontinue taking loans. Moreover, there is a common belief that an increase in the FDI will result in more job creation locally (Abor & Harvey, 2008; Rozen-Bakher, 2017). Although this is not definitive, it is believed that some borrowers may discontinue their entrepreneurial businesses (discontinue loans with MFIs) and turn to opportunities created by higher FDI flows in different sectors.

4.2 | Robustness test: Dynamic panel and fractional regression

So far, the static relationship of various factors with the *BTR* has been discussed. Table 5 gives the estimation results of the two-step system GMM model (Equation (2)). The higher p value of

TABLE 5 Factors affecting the borrowers' turnover of MFIs (two-step system GMM)

	Model 7 **Dependent variable: Borrower turnover rate**
Organizational factors	
BTR_{t-1}	0.176*** (0.067)
EW	−0.028*** (0.008)
STR	0.167*** (0.057)
PFB	0.065 (0.130)
PFLO	0.065 (0.066)
OSS	−0.208*** (0.061)
PY	0.035 (0.095)
ALBGNI	0.083* (0.047)
WRTOFFR	1.708*** (0.546)
LNSIZE	0.003 (0.011)
CAR	−0.082 (0.094)
DTE	−0.010** (0.005)
Market level factors	
HHI_L	0.037 (0.075)
BOONE	1.562*** (0.519)
Macroeconomic factors	
GDPG	0.006 (0.006)
INFL	0.012*** (0.005)
UEM	−0.000 (0.004)
RINT	0.006*** (0.002)
FDI	0.007 (0.005)
Year effect	Yes
CONS	0.255 (0.218)
Observations (group)	540 (148)
F-statistics	7.305
AR(1) (*p*-value)	−3.15(0.000)
AR(2) (*p*-value)	−1.12(0.262)
Hansen test (*p*-value)	124.383(0.326)

Source: Author's estimate based on secondary data. Standard errors in parentheses.
*$p < 0.10$
**$p < 0.05$
***$p < 0.01$.

TABLE 6 Fractional regression analysis (fractional probit and beta regression)

	Model (8)	Model (9)	Model (10)	Model (11)
	Dependent variable: Borrower turnover rate			
	Fractional probit regression		Beta regression	
	Coefficient	Margins (dy/dx)	Coefficient	Margins (dy/dx)
Organizational factors				
EW	−0.027***	−0.008***	−0.047***	−0.008***
	(0.007)	(0.002)	(0.016)	(0.002)
STR	0.256***	0.078***	0.380*	0.067*
	(0.092)	(0.028)	(0.197)	(.035)
PFB	0.096	0.029	0.347*	0.061*
	(0.092)	(0.028)	(0.205)	(0.036)
PFLO	0.037	0.011	−0.080	−0.014
	(0.065)	(0.020)	(0.150)	(0.026)
OSS	−0.159**	−0.049**	−0.085	−0.015
	(0.076)	(0.023)	(0.148)	(0.026)
PY	0.177	0.054	0.042	0.007
	(0.130)	(0.040)	(0.284)	(0.026)
ALBGNI	0.112***	0.034***	0.181***	0.032***
	(0.031)	(0.010)	(0.069)	(0.012)
WRTOFFR	4.027***	1.229***	7.183***	1.267***
	(0.595)	(0.180)	(1.187)	(0.208)
LNSIZE	0.007	0.002	0.018	0.003
	(0.008)	(0.002)	(0.016)	(0.003)
CAR	−0.146	−0.045	−0.263	−0.046
	(0.121)	(0.037)	(0.252)	(0.044)
DTE	−0.018**	−0.005**	−0.034**	−0.006**
	(0.007)	(0.002)	(0.014)	(0.002)
Market level factors				
HHI_L	−0.106*	−0.032*	−0.340***	−0.060***
	(0.059)	(0.018)	(0.126)	(0.022)
BOONE	1.326***	0.404***	2.101***	0.370***
	(0.337)	(0.103)	(0.745)	(0.132)
Macroeconomic factors				
GDPG	−0.017**	−0.005**	−0.034**	−0.006**
	(0.007)	(0.002)	(0.015)	(0.003)
INFL	0.007	0.002	0.017*	0.003*
	(0.005)	(0.001)	(0.010)	(0.002)
UEM	−0.011**	−0.003**	−0.013	−0.002
	(0.005)	(0.002)	(0.011)	(0.002)
RINT	0.006**	0.002**	0.012**	0.002**
	(0.003)	(0.001)	(0.006)	(0.001)
FDI	0.006	0.002	0.028***	0.005***
	(0.005)	(0.002)	(0.011)	(0.001)

(Continues)

TABLE 6 (Continued)

	Model (8)	Model (9)	Model (10)	Model (11)
	Dependent variable: Borrower turnover rate			
	Fractional probit regression		Beta regression	
	Coefficient	Margins (dy/dx)	Coefficient	Margins (dy/dx)
Year effect	Yes	Yes	Yes	Yes
Regional effect	Yes	Yes	Yes	Yes
CONS	−0.641*** (0.177)		−1.385*** (0.392)	
Observations	791	791	791	791
Chi^2	232.344***		175.711***	

Source: Authors' estimate. Standard errors in parentheses.

*$p < 0.10$

**$p < 0.05$

***$p < 0.01$.

Note: dy/dx for factor levels is the discrete change from the base level.

the Hansen test reiterates the validity of instruments used, and no second order autocorrelation exists as the *p*-value of AR(2) is also high. The statistically significant effect of lag BTR shows the validity of our choice in running the dynamic model, as the current year's BTR is dependent on the previous year. Theoretically, a significant percentage of MFI loans are based on the group lending mechanism (based on 4–5 members in a group) (Nkwocha et al., 2019); thus, on the departure of a borrower, a chain of borrower turnover, at least within the group and probably with some time lag is expected to occur.

Overall, the results indicate that even after dynamic model, the relationship sign and significance levels for most of the independent variables with BTR does not really change, except for a few. As an instance, the DTE remains statistically significant in GMM estimation, despite its insignificance when macroeconomic variables were considered in the static models. Another twist in the result was the coefficient sign of the GDPG (negative in static models but positive in dynamic), which eventually becomes statistically insignificant. Similarly, the FDI becomes insignificant in its effect on BTR (under GMM model), despite its coefficient signs being the same. Unfortunately, the coefficient signs of the gender variables (e.g., client base) are in contrast to our initial expectation and remain insignificant in both the static and dynamic panel models.

After running the fractional probit and beta regression based on Equation (1), the significance and sign of the coefficient values remain almost same (except in a few) for organizational factors reported earlier (Table 6). However, HH_L now becomes significant and reiterate that borrower turnover will be lower in a concentrated market, as customers will have limited or no options. The positive and statistically meaningful coefficient of the BOONE variable further supports the claim. The findings also substantiate earlier outcomes in terms of macroeconomic factors. Notably, the positive and statistically significant effect of UEM is in line with our a priori hypothesis that higher unemployment will lead to higher informal demand for credit, hence lower borrower turnover. Furthermore, we find that under beta regression, inflation and FDI become significant, indicating the importance of macroeconomic variables to explain the borrower turnover problem of MFIs.

Since we have estimated a number of models, their summary results are reported in Table 7. Overall, we can say that the findings of EW, STR, OSS, ALBGNI, WRTOFFR, BOONE and RINT

TABLE 7 Summary of regression results

Variable	REM	GMM	Fractional probit	Beta regression	Remarks
Organizational factors					
EW	√	√	√	√	Negative and statistically significant across models
STR	√	√	√	√	Positive and statistically significant across models
PFB	-	-	-	√	Positive and statistically significant only in beta regression.
PFLO	-	-	-	-	Mix but statistically insignificant across models.
OSS	√	√	√	√	Negative and statistically significant across models
PY	-	-	-	-	Positive but statistically insignificant across models.
ALBGNI	√	√	√	√	Positive and statistically significant across models
WRTOFFR	√	√	√	√	Positive and statistically significant across models
LNSIZE	-	-	-	-	Positive but statistically insignificant across models
CAR	-	-	-	-	Mix but statistically insignificant across models.
DTE	-	√	√	√	Negative and statistically significant except REM
Market level factors					
HHI_L	-	-	√	√	Negative and statistically significant in fractional probit and beta regression
BOONE	√	√	√	√	Positive and statistically significant across models
Macroeconomic factors					
GDPG	√	-	√	√	Negative and statistically significant except GMM
INFL	-	√	-	√	Positive and statistically significant except REM and fractional probit
UEM	-	-	√	-	Negative and statistically significant only in fractional probit
RINT	√	√	√	√	Positive and statistically significant across models
FDI	√	-	-	√	Positive and statistically significant only in REM and beta regression

Source: The authors. *Notes*: The sign "–" denotes statistical insignificance at any conventional levels. The result of FEM model was excluded in this table, as the Hausman test supports REM.

are robust, as the coefficient sign for these variables remain the same and statistically significant (with slight variations) under REM, GMM, fractional probit and beta regression.

5 | CONCLUSION AND POLICY IMPLICATIONS

The cost of borrowers' turnover could be detrimental to the sustainability of MFIs when a group of reliable borrowers depart, especially when these loyal borrowers were used to attract new members and implement peer mentoring to expose bad borrowers in an organization for expulsion (Pawlak & Matul, 2004; Urquizo, 2006). Hence, the study identified various organizational factors affecting the borrower turnover of MFIs. In so doing, the study also used several market and macroeconomic factors as control variables. Our findings are robust, as the conventional panel REM/FEM, fractional regression and GMM were employed.

Our results can generate several implications for policymakers, managers of MFIs and stakeholders to minimize borrowers' turnover. The efficiency-wage theory suggests that higher wages bolster labor productivity, as it tends to mitigate principal–agent or employer–worker conflict of interests. Highly paid workers will become more incentivized to offer their best to satisfy existing customers and reduce BTR. Thus, the policymakers could offer competitive wage packages to retain capable and experienced employees and motivate them to work in the best interest of the MFIs. Also, the positive impact of staff turnover on borrower turnover further reiterates that policymakers and management of MFIs should pay special attention to the job security and benefits of their members of staff. In this regard, provision of competitive financial and fringe benefits, better working environment, reasonable and flexible working hours, rational target of loan disbursement, and overdue loan collection provision and transparency in performance assessment policies are proven to be effective in the mitigation of turnover. Once these incentives are ensured, employees will become satisfied and less likely to depart the organization.

As our results indicate that mission drift (higher loan size) is positively associated with *BTR*; hence, there is need for policymakers and practitioners to promote need-based loan sizes. In this regard, loan officers dealing directly with potential borrowers should be well trained, and thorough field inspection should be conducted to ensure that expected loan amounts are aligned with borrowers' socio-economic conditions, to prevent negative consequences to the borrowers. Moreover, the mission drift aspects of MFIs should be carefully addressed at the governance level to reinstate the MFIs' goal of rendering affordable financial services to the poor and financially excluded. Another possible policy intervention to minimize borrower turnover could lie in the diversification of products, and implementation of technologies such as Fintech. Studies have suggested that using more products from the same bank increases consumer loyalty (Bilal Zorić, 2016); thus, the availability of various product baskets to customers could satisfy demand and minimize turnover problems.

As this study reveals that OSS has a negative and significant relationship with the borrowers' turnover, the service quality of MFIs would become deteriorated due to their inability to achieve long term operational sustainability, resulting in a higher borrower turnover. Since the cost of funding is a principal determinant of operational self-sustainability, it is important that funders, owners, donors, apex bodies and other stakeholders provide adequate amount of funds with reasonable costs to enable MFIs cope with their operating costs and design financial products and services that are cost effective and borrower-friendly.

Competition among MFIs has been enhanced, owing to the penetration of formal financial institutions via lower-end retail banking; therefore, borrowers have become equipped with ample

alternatives to switch to the best financial service providers. Such intense and unhealthy competition among MFIs, informal and formal financial providers have destructive consequences on the microfinance industry. It is, therefore, important that regulatory bodies draw a marginal line via the enactment of proper rules, regulations, guidelines and supervision to appease such competitive approaches in the financial market. From the management perspective, relationship banking should be promoted by MFIs to increase customers' loyalty through the provision of adequate training to loan officers. Moreover, as far as macroeconomic factors are concerned, microfinance borrowers' turnover is significantly influenced by the country's GDP growth, inflation, real interest rates, FDI, etc. Thus, management of MFIs should give special attention to these factors while servicing the poor.

6 | LIMITATIONS AND GUIDANCE FOR FUTURE RESEARCH

Similar with others, our study is not devoid of limitations. Since the general borrowers' turnover rate have been estimated from the retention rate, no specific and disaggregated information on the voluntary and involuntary turnover rate exist. However, the effects of organizational factors could vary in voluntary and involuntary measures. Nonetheless, graduation from a microfinance program should not be considered as a dropout, as it shows the level of development of borrowers. Unfortunately, we do not have the segregated data to identify graduated borrower, hence it limited such analysis being executed in this study. Moreover, as indicated in the positive effect of loan size on BTR, further research (perhaps using qualitative approach to understand the borrower's perspective) are needed to expose the underlining mechanism (whether it is mission drift or over indebtedness) causing such outcome via a survey data. Nonetheless, an important aspect of clients' dropout is the individual level factor, which is beyond the scope of this study. Thus, a thorough investigation of clients' level factors (e.g., gender, education, religion, socio-economic status, income, etc.) should be conducted to better understand the dynamics of turnover through primary survey, which would not only be very thought-provoking, but also a genuine contribution to the literature.

Moreover, the effects of turnover in MFIs' performance remain scarce and inconclusive. Evidently, there are arguments that a few number of borrowers' (particularly bad borrowers) turnover will be beneficial to the sustainability of MFIs. Therefore, MFIs may acquire temporary benefits when bad borrowers are withdrawn or defaulters are dismissed (Siliki, 2013; Simanowitz, 2000). Hence, future studies may consider investigating the possibility of a linear and quadratic relationship between borrowers' turnover, and the various dimensions of MFIs' performance. This will equip managers and practitioners with a concrete understanding of the consequences of borrowers' turnover to enable them to draft relevant policies/initiatives accordingly.

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DATA AVAILABILITY STATEMENT

The dataset employed in this study can be freely obtained from: https://datacatalog.worldbank.org/dataset/mix-market

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