Portfolio Analytics and Risk Management Practices of MFIs: A Global Survey

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Produced by: TriLinc Global, LLC.

Table of Contents

Introduction

This report is produced by TriLinc Global, LLC., in association with United States Agency for International Development (USAID) and in collaboration with the Center for Emerging Markets Enterprises (CEME) at the Fletcher School of Law and Diplomacy at Tufts University, under the aegis of the microRisk Alliance (MRA). The report is based on surveys conducted on more than sixty microfinance institutions (MFIs), and seeks to gain better understanding of the portfolio analytics and portfolio risk management practices that these MFIs engage in. We envision this report furthering the MRA's mission of engaging microfinance risk management practitioners in a collaborative learning process to document and share findings on the risks facing the microfinance industry and help identify effective and replicable risk management practices and innovations.

MFIs are operating in an increasingly challenging environment, facing various financial, political and macroeconomic pressures. They are often growing at a frenetic pace, as they seek to satisfy unmet demand for financial services at the bottom of the economic pyramid and carve out market share before their competitors. Many are tapping commercial sources for funding as sources of patient capital are simply failing to keep up with demand. Such growth has, however, been overshadowed by concerns surrounding over-saturation of markets, over-indebtedness of borrowers, credit risk, currency risk, promoting of unfamiliar products, and speculative investments into unrelated businesses.

There is also the overarching concern that the commercialization of microfinance has not necessarily seen the pursuing of returns that are adequately risk-adjusted. In particular, it has been TriLinc's experience that as MFIs grow, they develop their portfolio risk management capabilities in a piecemeal manner, often failing to keep pace in terms of ability to handle the diversity and depth of analysis required. We undertook this exercise to gain a more concrete understanding of the state of portfolio analytics and risk management systems that are operational at these MFIs, and of their ability to cope with challenging situations. In particular, we focus on the accounting system, portfolio management system (PMS), portfolio analytics system (PAS), and the risk management system (RMS).

Who We Talked To

Demographic Information

We reached out to 565 MFIs around the world that had reported their 2009 financials for the MIX Market. Of these, 67 MFIs from 30 countries completed the survey, representing a response rate of over 11%. The diversity in the geographical locations affords us a global perspective on portfolio analytics and risk management practices.

Country	#	Country	#	Country	#	Country	#	Country	#
Afghanistan	3	Congo	1	India	9	Madagascar	1	Palestine	3
Angola	1	Egypt	3	Ivory Coast	1	Malawi	1	Philippines	4
Bangladesh	3	Ethiopia	3	Iraq	1	Mongolia	2	Sri Lanka	3
Cambodia	5	Gabon	1	Jordan	1	Mozambique	2	Sudan	2
Cameroon	1	Ghana	1	Kenya	3	Nigeria	1	Tanzania	2
China	1	Haiti	2	Lebanon	3	Pakistan	1	Uganda	2

Table 1. Count of MFI Respondents, by Country

Most of the respondents are small- and medium-sized MFIs. Half the MFIs have an average outstanding loan balance of less than US$ 300, operate out of 14 or less branches, and have 14,000 or less borrowers (Table 2). This sample does contain outliers – one respondent for example has an outstanding loan balance of almost US$15,000, which would not identify it as an MFI under most classification systems. We will see the issues that are salient vary according to the size of the MFI, as do the challenges that face MFIs as they balance their analytics needs with growth.

	Outstanding Loan Portfolio (USD)	Number of Borrowers	Number of Savers	Number of Branch Offices	Average Loan Size (USD)
Minimum	28,000	268	0	1	7
25th Percentile	1,722,000	5,000	0	7	147
Average	28,744,000	61,000	76,000	40	878
Median	5,773,000	14,000	5,000	14	290
75th Percentile	21,166,000	60,000	24,000	45	883
Maximum	621,000,000	830,000	1,433,000	496	14,958

Table 2. Summary Statistics of Respondents – Key Characteristics

Respondents represent non-profits, non-bank financial institutions, co-operatives, banks and other kind of MFIs (Fig. 1). While they all offer micro-loans as a service, only some offer micro-savings,

micro-insurance, and SME loans (Fig. 5). We expect that the diversity of views offered by the respondents is at least in part a result of the diversity of the type of institutions that they are and the kind of services they offer.

Figure 1: Type of MFI

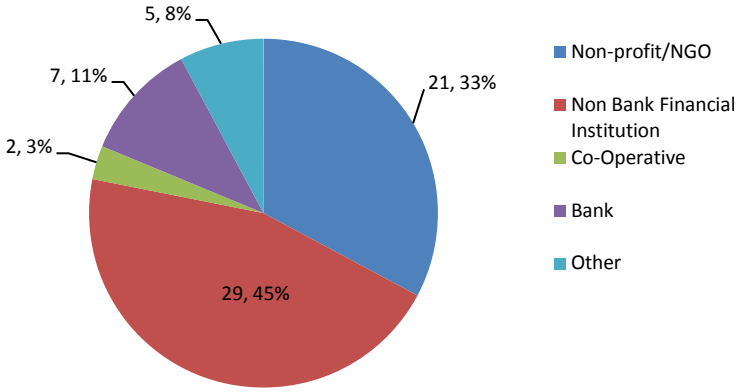


Figure 2: Number of active borrowers

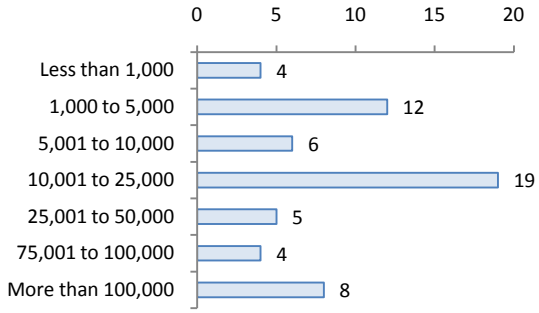


Figure 3: Number of active savers

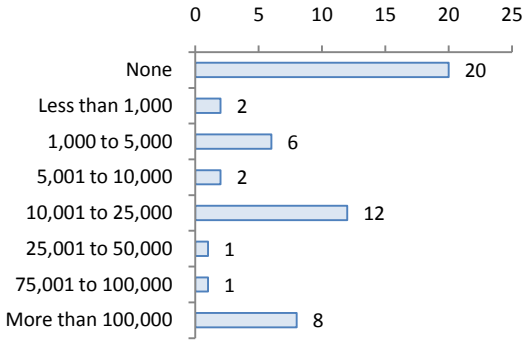


Figure 4: Number of branch offices

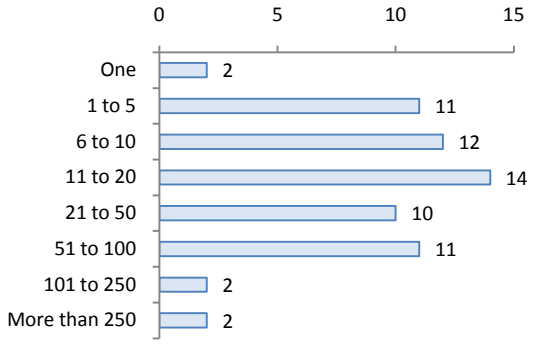
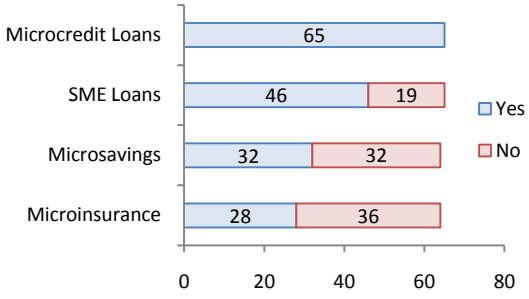


Figure 5: Services Provided



Because of the great diversity in the sizes of the MFIs that responded to the survey, we segregate them into three groups, based on the size of the loan portfolio and number of active borrowers:

- Small: Has a loan portfolio of less than US$ 5,000,000 OR has less than 10,000 active borrowers. 34 MFIs fall into this category.
- Large: Has a loan portfolio of more than US$ 50,000,000 OR has more than 100,000 active borrowers. 16 MFIs fall into this category.
- Medium: All others. 18 MFIs fall in this category.

This classification is somewhat arbitrary. We relied heavily on our exposure to this industry to arrive at this classification by striking a decent balance between the fact that what defines "small" or "large" can vary wildly, given global scope of the survey, and the need to recognize the fact that MFIs of different sizes have very different capabilities and needs.

Operational Characteristics

The analytics and risk management capabilities of an MFI are constrained by the tools and resources at their disposal. Most of the MFIs have branches with internet access, and virtually all have a computerized accounting and portfolio management system. However, less than half have however a computerized risk management system (Fig. 6 and 7). 40% of the MFIs have a dedicated risk management division (RMD), with the number of staff ranging from 1 to 50 (Fig. 8 and 9).

Figure 6. Branches have Internet Access

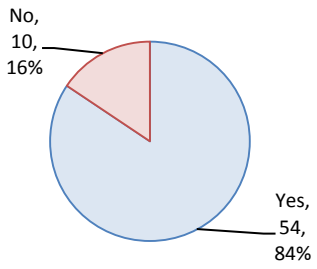


Figure 7. Does the MFI have a …

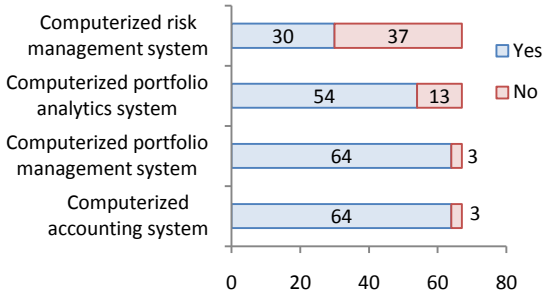


Figure 8. MFI has Risk Management Department (RMD)

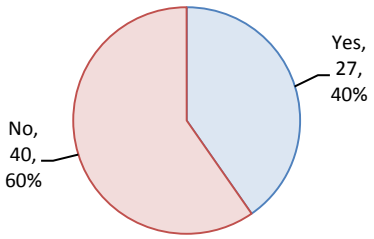
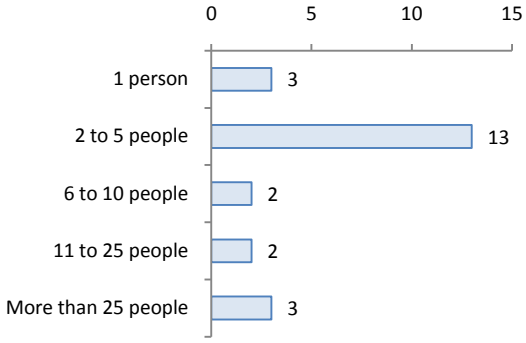


Figure 9. Number of RMD Staff



The use of a computerized risk management system does not seem to be correlated to the size of the MFI (Tables 3). The prevalence of a risk management division, on the other hand, is about twice as much for a large MFI as it is in a small or medium (Table 4).

Table 3. MFI has Risk Management System

	No	Yes
Large	9 (60%)	6 (40%)
Medium	11 (61%)	7 (38%)
Small	17 (50%)	17 (50%)

Table 4. MFI has Risk Management Department

	No	Yes
Large	4 (25%)	11 (68%)
Medium	12 (66%)	6 (33%)
Small	24 (70%)	10 (29%)

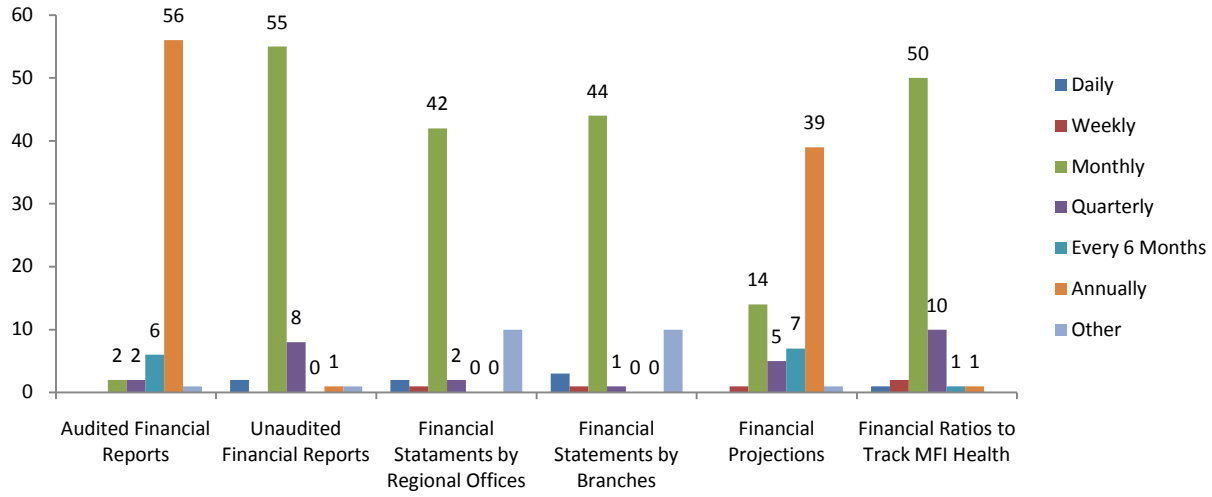
Caveat on Interpreting Results

While reviewing this report, the reader is requested to keep the issue of selection bias in mind. The respondents represent only those MFIs that were willing to take on the reporting burden of completing a 2-hour survey, engaging in follow-up discussions if necessary, and prior to that, providing MIX Market with financial data. We encourage the reader to draw his or her conclusion on what this implies about the motivation and resource availability of participating MFIs, and therefore whether the results may possibly represent an upward or downward bias.

Financial Reporting Practices

The profit-and-loss statement, balance sheet and cash flow statement represent the financial statements that form the bedrock of tracking the financial health of any company. We sometimes see MFIs substituting the trial balance for the balance sheet, and the receipt-payment statement for the profit-and-loss statement to reduce reporting burdens. Audited statements are typically produced once a year, in time for Board meetings and to satisfy regulatory reporting requirements. Unaudited financial statements are produced at much higher frequency.

Figure 10. Frequency of Generation of Financial Reports



Most of our respondents produced audited financial statements once a year, while they produced unaudited ones once a month (Fig. 10). More than three-quarters also produced financial statements broken down by regional offices and branch offices. It is important to produce these on a branch office level because that often represents the unit of replication from a financial institution point of view. Note that this is different from the unit of replication on the ground in terms of borrower organization, which is usually something more granular, such as a lending group of five.

Financial ratios are one of the simplest metrics that can be used to gauge the health of an MFI, and whether goals are being met. Ratios can often form the basis of a basic early warning system, where triggers are associated with ratios falling outside a pre-determined bound. Three-quarters of the respondents calculated ratios on a monthly basis, with most of the rest calculating ratios quarterly.

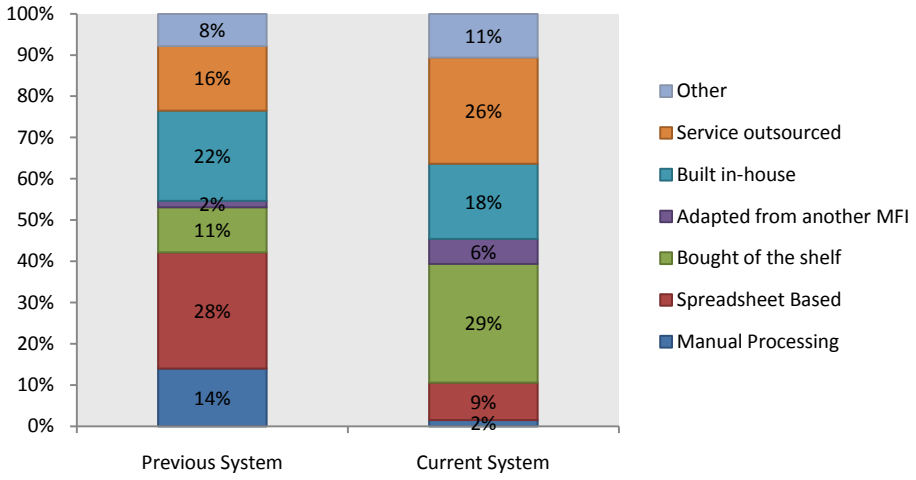
Financial projections not only represent the MFIs views of how it intends to shape its business in the future, but they also represents an opportunity to revise previous plans based on changing facts on the ground. Almost 60% of the respondents produced financial projections on an annual basis, while an impressive 20% did so monthly.

Portfolio Management System

Nature of PMS

The portfolio management system (PMS) maintains the loan portfolio of a MFI, and any other portfolio of products that it offers to its clients, such as savings and insurance. This involves maintaining client data, schedules of cash flows of principal, interest, commissions and penalties, recording transactions, and possibly outputting information to interface with the accounting system. MFIs that are small and have limited operating budgets often start out with manual bookkeeping, then graduate to a spreadsheet or off-the-shelf database product, and usually end up either designing their own system or outsourcing the portfolio management services. MFIs that design their own systems may either begin from scratch, or modify a system developed by a peer or software vendor.

Figure 11. Nature of Portfolio Management System



Three-quarters of the PMSs currently in operation have either been built in-house, adapted from another MFI, or are based on outsourced services (Fig. 11). At the other end of the spectrum, 1 MFI is performing PMS tasks manually, and 6 others use spreadsheets. The transition from previous to current system is quite revealing – 42% of the respondents had spreadsheet-based or manual PMSs before they switched over to their current system. That 26% of PMSs are outsourced implies a significant scope for software-as-a-service (SaaS) providers to serve this market. And that there has been an almost three-fold increase in off-the-shelf software also points to greater availability of MFI-oriented software compared to a just few years ago.

Most of the respondents have relatively new PMSs. A quarter of them are less than a year old, and half are less than three years old (Fig. 12). MFIs are often faced with the choice of upgrading or replacing their Management Information Systems (MISs) to keep abreast with the demands of a growing portfolio. While the benefits of trading up are self-evident, it often represents a significant expenditure, forcing many to defer such outlays to a future period. Some get stuck in the vicious cycle of continually patching the existing system to do increasingly disparate tasks, making it even harder to migrate to a better system by abandoning one where much effort has been put in. For others, a migration to a more appropriate system is complicated by the need to account for organizational idiosyncrasies – as generic and customizable as commercial MISs have become, some systems will continue to have to be built in-house to cater to those specializations.

Figure 12. Installation Date of PMS

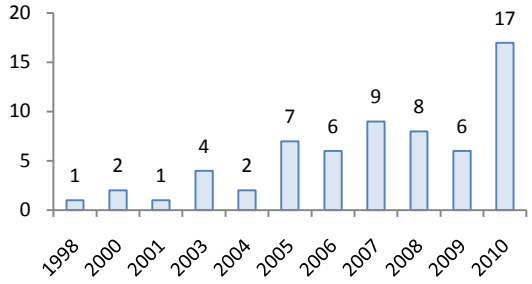
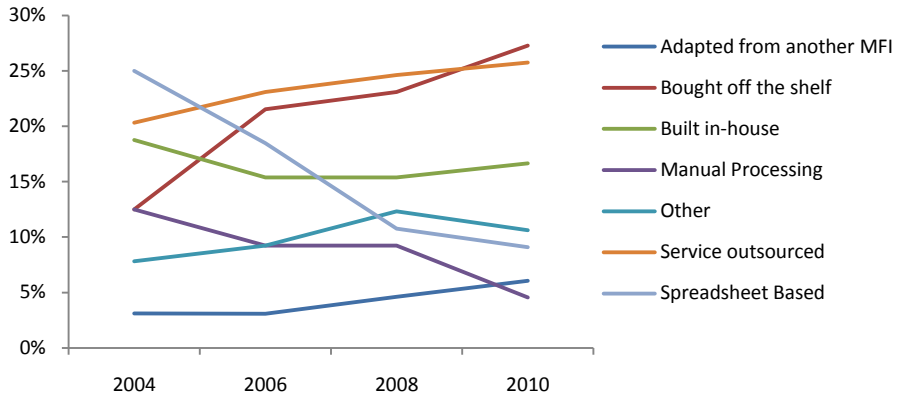


Figure 13. Change in Nature of PMS Over Time



The change in the nature of the PMSs over time is illustrated in Figure 13 – the downswing of the "spreadsheet-based" and "manual processing" trend lines are matched by upticks of the "service outsourced" and "bought off the shelf" one, with most of the transitions happening in the 2006-2008 time frame.

One would expect MFIs to adopt more sophisticated PMSs as they grow in size. We see use of all manners of PMSs across the board amongst the respondents (Table 5). Interesting, the only manual PMS in use is by a "large" MFI, as well as half of MFIs that use spreadsheets.

Nature of PMS	Large	Medium	Small
Adapted from another	0 (0%)	0 (0%)	4 (11%)
Bought off the shelf	3 (18%)	5 (29%)	11 (32%)
Built in-house	4 (25%)	3 (17%)	5 (14%)
Manual Processing	1 (6%)	0 (0%)	0 (0%)
Other	1 (6%)	1 (5%)	5 (14%)
Service outsourced	3 (18%)	6 (35%)	8 (23%)
Spreadsheet Based	3 (18%)	2 (11%)	1 (2%)

Table 5. Nature of PMS, by size of MFI
(Percentages in brackets denote prevalence of a certain type of PMS within MFIs of a certain size)

Data-Related Practices

Data collection begins at the field, but the analytics usually takes place at head quarters, or at regional hubs. Where data is entered and how it is transmitted determines how much data makes it through for analysis, and how quickly. Ideally, all data that is collected would be entered into the PMS, as close to the source as possible, and all of it would potentially be used for analysis.

In reality, there are multiple bottlenecks in this process:

- The computerized section of the PMS may not be accessible from the branch offices. In these cases, data is manually transcribed first, and then entered into the system upstream. This also introduces a time lag between when data is collected and when it is recorded.
- Even if data is entered into the PMS at the branch office, it may not make its way to headquarters. This may be because the branch offices do not have internet access, or they are generating data in such volumes that the available bandwidth is insufficient. In these instances, data is often sent by courier.

- In some cases, MFIs decide to electronically record only part of the data that is collected manually. In others, only part of the data recorded electronically is passed on to headquarters. In both cases, the reasoning is that the rest of the data is not useful, where usefulness is determined by applicability to generating financial statements.

Most of the respondents enter data in the branch offices (Fig. 14). Some enter data in the field, right at the point of data generation. Some also reserve some data entry functions for the headquarters. Note that one MFI may enter data into the PMS at multiple points.

Almost a quarter of the respondents do not enter *all* the data they collect into the PMS, and about 8% of them do not transmit all the data to headquarters (Fig. 15). While the motivation for this may simply be what was pointed out earlier, that it is not considered "useful," it has been our experience that information that is not recorded electronically or passed up the organizational structure often contain descriptive information about the borrower or the loan, and can be used in portfolio analytics as a discerning metric. An example of this would be the income level of a borrower, which has no conceivable role in the accounting practices of the organization, but can constitute an important dimension to understand borrower behavior over.

Figure 14. Location of Data Entry

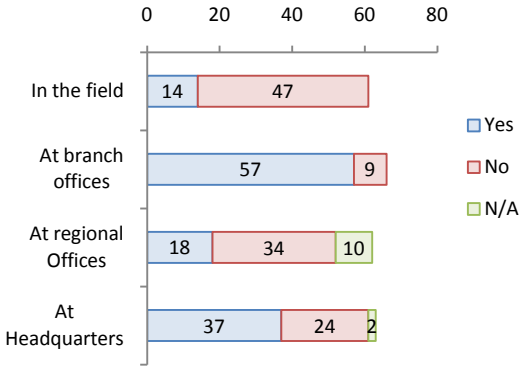


Figure 15. Transmission of Data

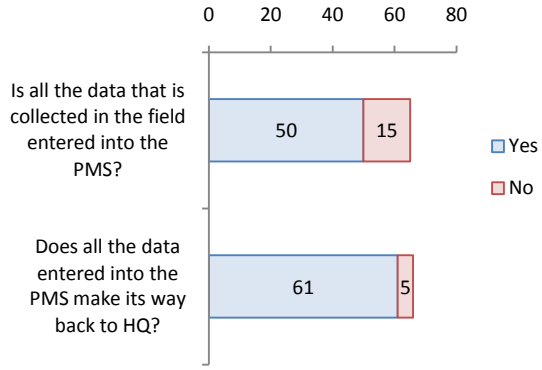
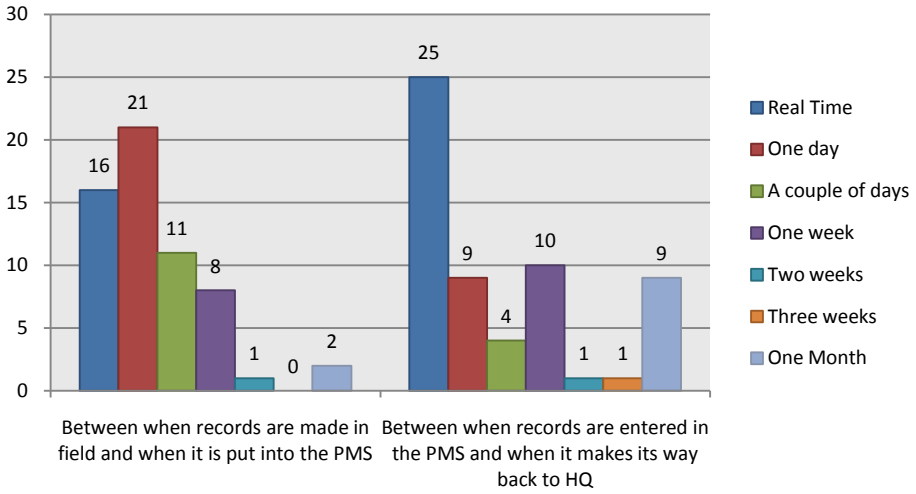


Figure 16. Time Lag in Data Proliferation



In about 60% of the MFIs, the time lag between when data is collected in the field and when data is entered into the PMS is a day or less; 95% of them have that data entered within a week (Fig. 16). Once the data is entered into the PMS, about 60% of them transmit that data to head quarters within a day; a fifth of the MFIs require more than a week to do so, with 15% taking a month or more (Fig. 16).

How fast data is transmitted to headquarters where organization-wide analytics can be performed has the obvious impact on the timeliness of reports generated, and subsequent decisions that are taken. An organization that enters data from the field within a day and transmits it to headquarters within another is theoretically only 2 days behind rectifying any situation. In contrast, a MFI that takes a week to transcribe data into an electronic form and then a month to pass it on to headquarters risks being a month-and-a-half behind on the state-of-affairs.

Neither time lags were significantly different based on the size of the MFI, nor were most of the other characteristics, except when it came to whether all the data that was collected in the field was entered into the PMS. While almost 90% of large and medium MFIs did so, a full third of the small MFIs did not (Table 6).

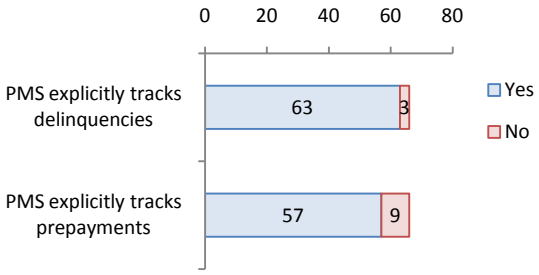
All data from field into PMS?	Large	Medium	Small
No	2 (14%)	2 (11%)	11 (33%)
Yes	12 (86%)	16 (89%)	22 (67%)

Table 6. Entry of all data from field into PMS
(Percentages in brackets based on total for a certain size of MFI)

Delinquencies and Prepayments

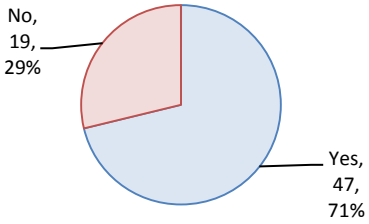
MFIs typically give loans of short duration. Timely tracking delinquencies and prepayments can be crucial to managing cash flow and maintaining the health of a portfolio. Delinquencies are a particularly pernicious issue for MFIs that schedule payback of principal and interest using the method declining balance, since more of the principal is tied up at the latter payment periods. Prepayments are not an issue of concern for MFIs that offer fixed-yield products. It is generally the case though that MFIs do not allow prepayments. Virtually all of the respondents track delinquencies, and most track prepayments (Fig. 17).

Figure 17. PMS and Accounting



Link with Accounting System

Figure 18. PMS linked with Accounting System



The PMS has a direct relevance to the accounting system, in that it manages much of the assets and records much of the cash flows that financial statements chronicle. A direct link reduces the time lag between when assets and flows are recognized by the PMS and when it is recognized by the accounting system. This reduces errors that are more prone to happen while manually transferring data between the two systems, potentially reducing the need for periodic reconciliation. 71% of the respondents had a PMS system that was directly linked to the accounting system.

Portfolio Analytics System

The portfolio analytics system (PAS) primarily uses information collected by the portfolio management system to provide an MFI with a granular understanding of portfolio behavior. In its basic form, portfolio analytics constitutes of dissecting performance and risk metrics across multiple dimensions, where a dimension is simply a factor by which such behavior can be classified. Thus, while following portfolio at risk (PAR) figures for the institution are useful, it is more useful to follow PAR figures by branch office, to see if delinquencies are localized, or by product, in case they are badly designed. Further granularity may be obtained by splitting the data across multiple dimensions, as well as superimposing data from other sources, such as accounting, HR, etc.

Dimensions of Analysis

The degree of granularity with which portfolio analytics can be performed is dependent on the number of dimensions available. This in turn is dependent on the number of characteristics of the loan and the borrower that the MFI collects, since each of those can be treated as a dimension of analysis. The metrics themselves can also be converted into dimensions, usually by creating buckets.

Figure 19. Portfolio Data Tracked

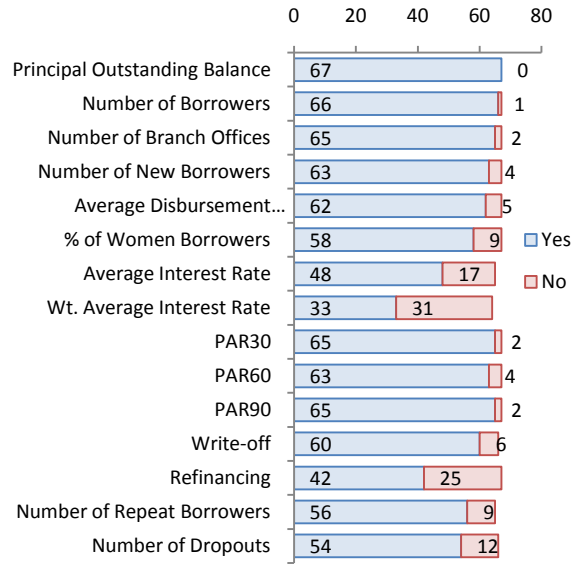
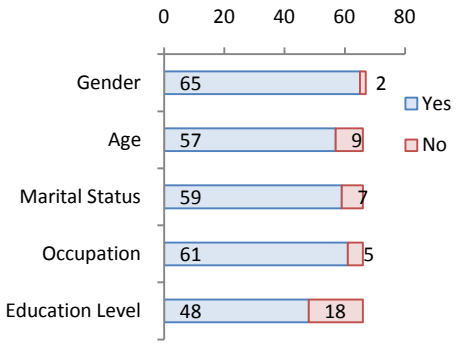


Figure 20. Demographic Data Tracked

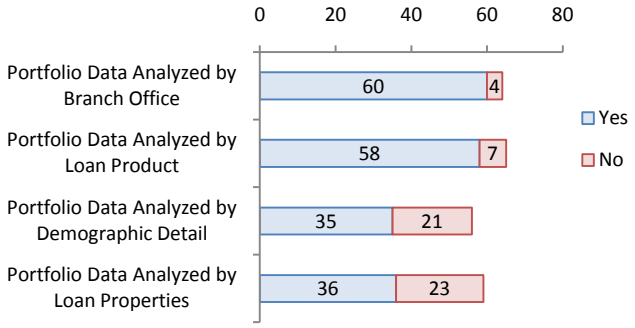


Some data is tracked by more MFIs than others. Not surprisingly, portfolio outstanding balance, number of borrowers, number of branch offices and various PARs are tracked by virtually all MFIs

as part of portfolio data tracked, since they are fundamental to tracking organizational structure and operations (Fig. 19). Metrics such as weighted average interest rate and refinancing are not tracked by more than half and more than a third of MFIs, respectively. As far as demographic data is concerned, most track gender, while education level is tracked the least (Fig. 20).

Most of the MFIs analyze data by branch office and loan product, arguably the two most important dimensions to perform analytics over (Fig. 21). This distribution does not change significantly when the size of the MFI is considered. A little over half utilize demographic details or loan properties for the same purpose though. The incremental effort to run the same analysis over different dimensions is usually not terribly high. The disparity in what is produced and what can be produced with existing data is often because different offices are responsible for different reports, and some report generation is hard wired, thus lacking the flexibility to plug-and-play dimensions at will.

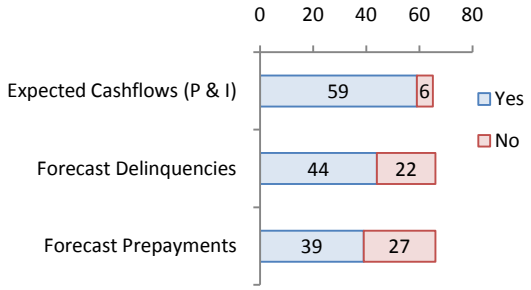
Figure 21. Portfolio Data Analysis by Dimension



Expected and Actual Cash Flows

Once an MFI has a good understanding of different compartments of its portfolio, it can build on that understanding to forecast various metrics. Accurately forecasting cash flows is particularly important. While every loan has a payment schedule, it is altered by delinquencies and prepayments, and often significantly so. Upon learning delinquency and prepayment patterns as they apply to loan products, branch offices or vintages, an MFI can superimpose this information on expected cash flows and predict principal and interest repayments more accurately.

Figure 22. Forecasting Practices



Amongst the respondents to this study, while more than 90% forecasted expected cash flows, only 67% forecasted delinquencies and 59% forecasted prepayments (Fig. 22). This distribution does not change markedly, depending on the size of the MFI.

Comparing the actual cash flows against expected is an involved exercise in itself, requiring diligence in weaning out the segments where the greatest divergence occurs. 70% of responded engaged in such comparative exercises (Fig. 23). Most of actual versus expected comparisons tend to occur on a period basis, where corresponding months are compared. Given the short duration of microfinance loans, it is useful to compare by vintage as well since anomalies do not often show up until loans have aged somewhat. When comparing vintages, loans are grouped by origination dates (usually by month), and then compared over corresponding seasoning periods. Despite the utility of decomposition by vintage, it is not frequently executed. Only half as many MFIs in our study performed actual versus expected cash flow comparisons by vintage (23), as opposed to comparisons by period (44) (Fig. 24).

Figure 23. Compare Expected vs. Actual Cashflows

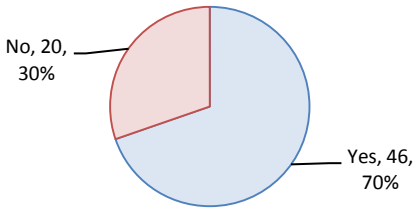
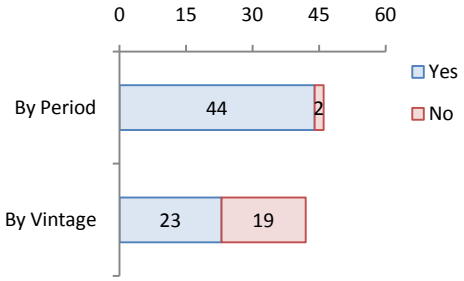


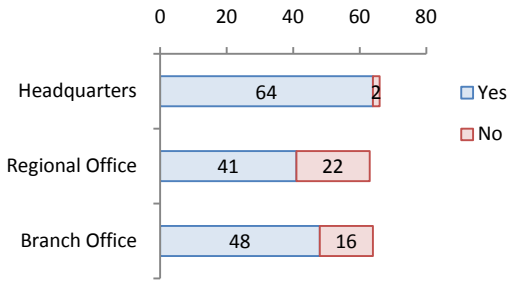
Figure 24. Basis of Comparison for Expected and Actual Cashflows



Granularity of Reporting

Portfolio analytics reports that are generated for smaller units of the MFI are better if generated for the entire organization, since more compartmentalized trends can be discerned. While virtually all the respondents ran reports at the headquarter level, 25% did not do so at the branch office level (Fig. 25). Generating reports at the branch level is more prevalent for small and medium MFIs compared to large ones (Table 7).

Figure 25. PAS Reporting Level

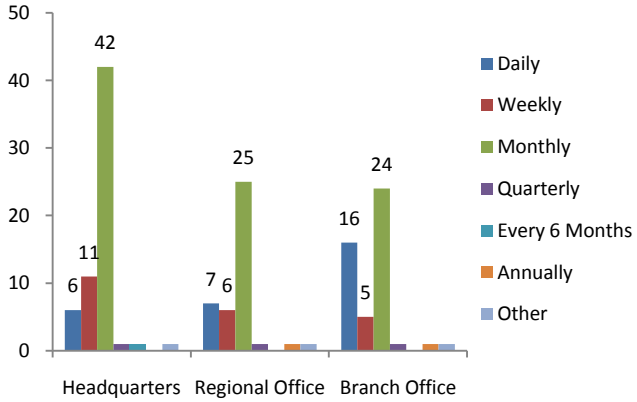


Reporting at Branch Office Level?	Large	Medium	Small
No	6 (43%)	2 (11%)	8 (26%)
Yes	8 (57%)	16 (89%)	23 (74%)

Table 7. Portfolio analytics reports generated at branch office level
(Percentages in brackets based on total for a certain size of MFI)

Interestingly, portfolio analytics reports are run at the branch office level more often than at the headquarter level. At the headquarter level, about 70% of MFIs report monthly and 10% daily (Fig. 26). At the branch office level, while 50% of the MFIs still report monthly, there is a threefold increase of those that report daily, at 33%. MFIs therefore seem to achieve both granularity and increased frequency of reporting at the same time.

Figure 26. Reporting Frequency



Linkages with Other Systems

The PAS can feed off of both the PMS and the accounting system. The more direct a link it has with the two, the less the time lag and overhead burden on generating reports, and subsequent surveillance and decision making. PASs are usually linked relatively better with the PMS than with the accounting system, since both of them are often part of the same system by design. Such organic linkages are not common with accounting systems, partly because they are designed to meet finance department requirements, and therefore have different prerogatives. We see this with our respondents, where 90% of the PASs are linked to the PMSs directly or through an intermediary system, while 68% are linked similarly to the accounting system (Fig 27 and 28).

Figure 27. Link between PAS and Accounting System

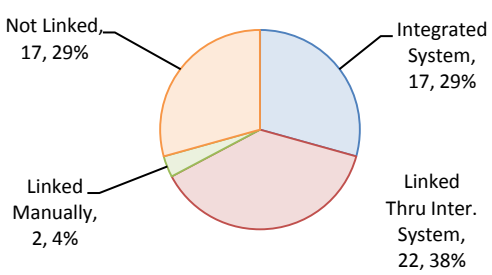
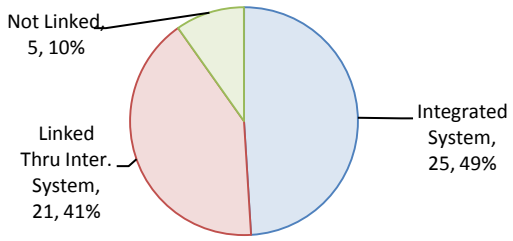


Figure 28. Link between PAS and PMS



The distribution of types of linkage between the PAS and PMS do not differ significantly by the size of the MFI; they do however vary much for the linkage between the PAS and the accounting system. Small MFI respondents had almost half of their accounting systems as part of an integrated system with the PAS, while half of the medium and large MFIs connected the two through an intermediary system (Table 8).

Type of linkage between PAS and Accounting System	Large	Medium	Small
Integrated System	1 (9%)	2 (13%)	14 (45%)
Linked Through Intermediary System	5 (45%)	8 (50%)	9 (29%)
Manually	2 (18%)	0 (0%)	0 (0%)
Not Linked	3 (27%)	6 (38%)	8 (26%)

Table 8. Portfolio analytics reports generated at branch office level
(Percentages in brackets based on total for a certain size of MFI)

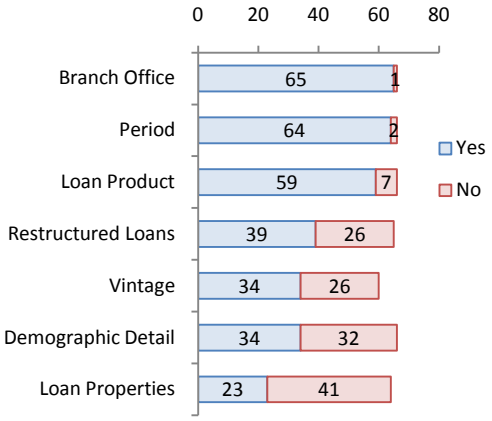
Risk Management System

The risk management system (RMS) in an MFI is responsible for identifying risk elements faced by it. The segment of the RMS dealing with loan portfolio oriented risk, our area of interest, is often a subset of the PMS. The most commonly used metric for portfolio risk is portfolio-at-risk (PAR), which is the sum total of the outstanding balances of loans that have any amount overdue for a certain number of days. This is different from arrears in that arrears tracks the exact amount that is overdue, and not the entire balance of the loan. While PAR is a much more conservative measure of risk than arrears, it is considered appropriate given the very short durations of micro-loans. While other measures such as over-indebtedness would also be useful, they are often not tracked given the lack of data.

Tracking Risk

As mentioned earlier, the more dimensions one tracks with a metric, the better – it is often not possible to know a priori where risk concentrations reside within a portfolio. 90% or more of the respondents track PAR by branch office, period, and product type. However, a smaller number use the vintage (57%), restructured status (60%), demographic details (52%) and loan properties (36%) (Fig. 29).

Figure 29. Tracking PAR By...



We have seen PAR characteristics vary greatly depending on the gender and education level of the borrower, the size of the loan, and the vintage, and would find it desirable that more emphasis is put on the parameters that are lagging in their use as a dimension, particularly when the underlying data is already collected. For example, 65 MFIs record the gender of the borrower and 61 collect the occupation, but only 34 break down PAR by demographic details.

Over-indebtedness is an increasing problem as microfinance markets becomes saturated, and multiple MFIs are pursuing the same borrowers. Borrowers are often taking this opportunity to take loans from one MFI to pay off loans they had taken from another. In many cases, market

growth has become a largely supply-driven activity. Two-thirds of MFIs track borrowers with multiple loans, and 24 actually track multiple loans when they are originated by other MFIs (Fig. 30 and 31). While it is always possible that borrowers may underreport over-borrowing on their part, the attempt of MFIs to track multiple loans across different MFIs is laudable, especially since many of these markets lacka credit bureau.

Figure 30. Track Borrowers with Multiple Loans

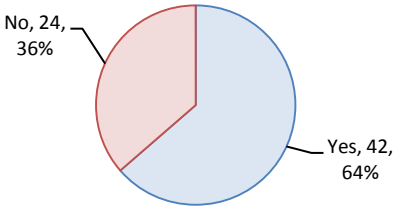
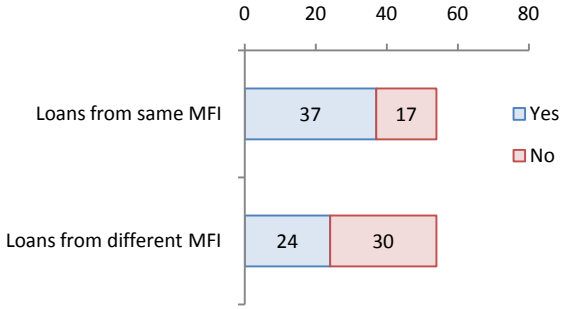


Figure 31. Tracking Multiple Loans When ...



MFIs often come up with their own metrics that are appropriate to better track the risks they face, given the markets they operate in. More than a third of the respondents had custom metrics for loan officers, branch officers and loan products (Fig. 32, 33 and 34, and Tab. 9, 10 and 11). This distribution does not differ significantly when the size of the MFI is considered.

Figure 32. Tracking other risk metrics for Loan Officers

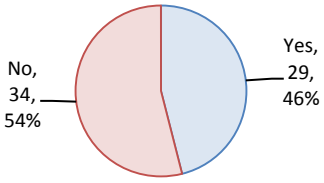


Figure 33. Tracking other risk metrics for Branch Offices

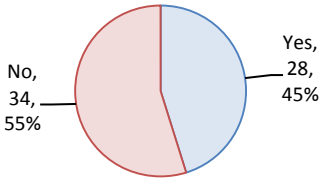


Figure 34. Tracking other risk metrics for Loan Products?

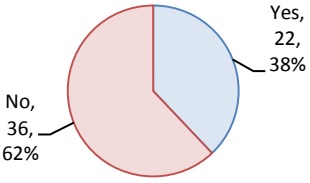


Table 9. Other Risk Metrics Tracked for Loan Officers
• Arrears and aging
• Case load
• Consistency between client records and active loans
• Drop-out rate
• Fraud
• Group meeting attendance

Table 10. Other Risk Metrics Tracked for Branch Offices
• Arrears and Aging
• Checks issued
• Competition in area
• Decision making ability
• Drop-out rate
• Gender balance
• Loan officer turnover

Table 11. Other Risk Metrics Tracked for Loan Products
• Agricultural loans
• Business sector loans
• Exit rates
• Number of accounts
• Number of clean groups
• Repayment methods
• Repayment rate

• Repayment rate	• Number of accounts • Portfolio concentration • Repayment rate • Rural vs Urban loans	• Savings coverage ratio

Early Warning Modules

How long it takes to identify an issue and take corrective action can have significant consequences for the health of an MFI. Early warning modules usually take the form of tracking indicators such as PAR, write-off amounts and product concentrations and setting off alerts if they fall outside a certain pre-determined bound. More advanced early warning systems that depend on stochastic modeling or intelligent systems are quite rare in the industry.

Figure 35. Early warning modules/alerts used

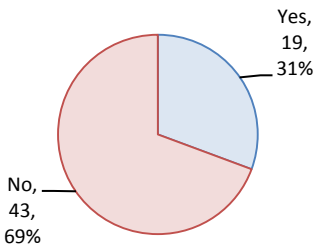


Table 12.Early Warning Indicators Used
• Bounced checks • Cashflow • Deterioration in branch performance • High demand for big loans • PAR • Recovery rate • "Unpaid" ratio

19 of the respondents have an early warning module in place, or use early warning alerts (Fig. 35). Some examples of what are used is listed in Table 12. Interestingly, the prevalence of use of early warning modules is much higher at small and medium MFIs, with about a third utilizing them, compared to large MFIs where a little over a fifth use them (Table 12).

Early Warning Modules Used?	Large	Medium	Small
No	11 (79%)	11 (65%)	21 (68%)
Yes	3 (21%)	6 (35%)	10 (32%)

Table 7. Use of early warning modules/indicators by MFIs
(Percentages in brackets based on total for a certain size of MFI)

Linkage with Other Systems

The RMS can feed off of the PAS, PMS and the accounting system. The more direct a link it has with the other three, the less the time lag between when issues surface and when they are discovered and acted upon. As before, one would typically expect a less direct linkage between the RMS and the accounting system, compared to the PAS or the PMS.

In more than 80% of the cases, the respondents had both their PMS and PAS linked to the RMS either directly or through an intermediary system, while 50% had the RMS linked to the accounting system in a similar manner (Fig. 36, 37 and 38). Indeed, a third of the RMSs were not linked to the accounting system at all. The distribution of the type of linkages does not differ significantly when the size of the MFI is considered.

Figure 36. Link between RMS and Accounting System

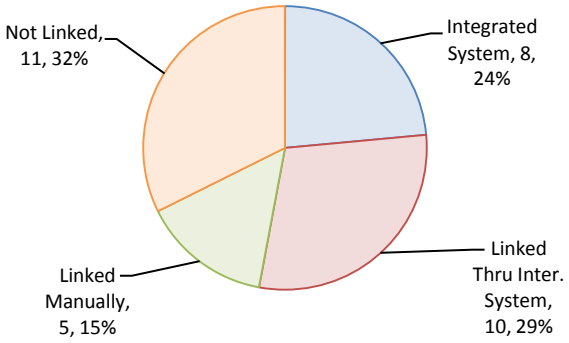


Figure 37. Link between PMS and RMS

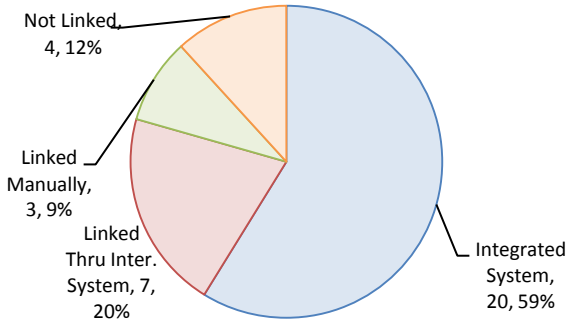
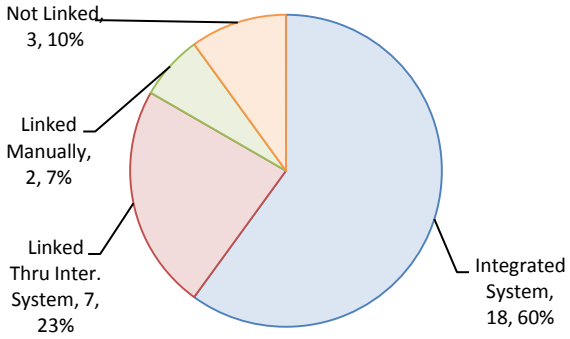


Figure 38. Link between PAS and RMS



Opinions

The respondents were asked if they were satisfied with the PMS, portfolio analytics practices and risk management practices they had in place. A third of them stated that they were not satisfied with the PMS and the portfolio analytics practices, and 42% were not satisfied with their risk analytics practices (Fig. 39, 40 and 41). This distribution of satisfaction versus dissatisfaction does not vary significantly, depending in the size of the MFI.

Figure 39. Satisfied with the PMS

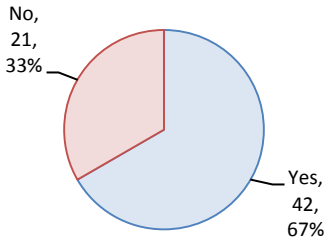


Figure 40. Satisfied with the Portfolio Analytics Practices

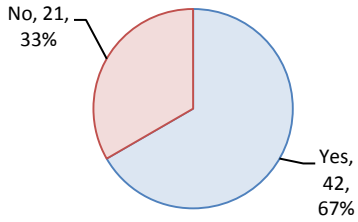
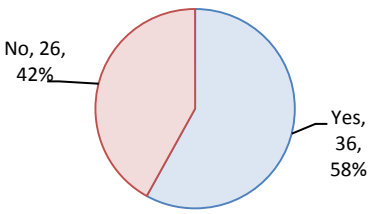


Figure 41. Satisfied with the Risk Analytics Practices



We asked the respondents how they would like to see their current practices improved. Responses are reproduced below with minimal changes, since we feel that this best captures opinions expressed. Editing has been restricted to similar points being consolidated into one, and verbiage being harmonized.

Desired improvements to PMS:

- Allow branch level access for data entry
- Automate partially manual and spreadsheet based system
- Computerized system that tracks day-to-day operational performance at all levels of the MFI structure.
- Design special software that serves MFI's purposes
- Develop web-based solutions to enable branches to have up-to-date access to portfolio information
- Establish connectivity between branch and head office
- Establish more flexible reporting and data entry capability
- Help measure social performance impact

- Link to accounting system
- Obtain data cleanup capability
- Tracking of individual clients
- Update SQL

Desired improvements to portfolio analytics practices:

- Build capacity of the staff at branches and sub-branches in risk analyzing and forecasting technique
- Calculate yield of microloans
- Deploy more robust software
- Develop more modules, analysis is basic now
- Enable tools to focus on demographic data
- Enable tools to generate information daily and weekly
- Ensure greater interactivity with the field
- Generate accurate reports
- Generate system level reports more efficiently and move away from manual and Excel heavy analysis
- Provide more details on portfolio
- Reduce dependence on IT consultants for service
- Reduce difficulty in accessing basic reports

Desired improvements to risk analytics practices:

- Combine other risk management areas, such as institutional risk, operational risk, financial management risk, and external risks
- Convert all manual processes into automatic ones
- Deploy a RMS, coupled with training
- Designate risk management person once institution breaks even
- Develop comprehensive tool to measure all related risks, which would, in turn, generate alerts
- Enable automatic classification of past-due accounts as per regulatory body requirements
- Enable instant alerts whenever client misses an installment
- Establish a risk department
- Finish going through the learning phase surrounding internal audits

- Focus on specific products, such as condominium housing and water pump loans
- Generate reports and analyses automatically
- Provide greater emphasis on branch level reporting
- Track multiple borrowers

When asked what the greatest risk was that their MFI faced, respondents noted the following:

- Business failure of clients
- Credit risk
- Cross-borrowing across MFIs
- Depressed financial markets
- Fraud and irregularities of staff
- Increase in arrears
- Lack of accuracy in data entry and data management by staff
- Lack of physical infrastructures such as transport for agricultural product disposal
- Lack of sector diversification
- Loan recovery ability
- Natural disasters, floods and droughts
- Operational risk
- Over-indebtedness
- Political turmoil
- Rural outreach
- Security risk
- Systemic risk

Some points such as over-indebtedness, volatility surrounding agricultural loans and staff fraud were mentioned multiple times. Some concerns were also relevant to a particular location – Palestinian and Iraqi MFIs identified security risk, Indian MFIs, systemic risk following the microfinance crisis in Andhra Pradesh, and MFIs in Madagascar, political turmoil brought on by trying economic times, as being top of their agenda.

Conclusion

We believe this study represents the tip of the iceberg in understanding current practices as far as portfolio analytics and risk management is concerned. Further analysis is required to help identify determinants of MFI behavior and cause-and-effect relationships. Risk tracking and early warnings is an area that needs attention, given its relative lack of usage in the larger MFIs.

If these respondents, who have internet access, email contact information and voluntarily report audited financials to MIX Market, have such a diverse range of capabilities and analytics, what will we find when we reach out to a larger sampling of the other hundreds and thousands of MFIs worldwide who are not so technically inclined? Does this represent an opportunity for technical assistance for MFIs that are growing faster than their systems can keep pace with? Would upgrading their systems allow for easier access to capital markets?

One thing is clear – there is significant scope for bettering portfolio analytics and risk management systems and practices, and this opportunity is matched by a desire on the part of MFIs to see that come to fruition. We look forward to collaborating with our partners in the microRISK Alliance and the greater community focused on financial services for emerging markets to help identify effective and replicable risk management practices and innovations.

Acknowledgements

We would like to thank the following MFIs for taking the time to diligently complete the survey that has allowed us to produce this report:

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Ameen, Lebanon
Amhara, Ethiopia
Ariana Financial Services, Afghanistan
Arohan, India
Bangko Mabuhay, Philippines
Berendina Microfinance Institute, Sri Lanka
BIMAS, Kenya
CBIRD, Cambodia
CCOM, Mozambique
Chaitanya, India
Chamroeun, Cambodia
CHF, Iraq
CREDIT, Cambodia
CSS, Bangladesh
DBACD, Egypt
DSPI, Philippines
Dwetire, Ghana
Finance Sudan Limited, Sudan
First MicroFinanceBank, Afghanistan
FMF, Egypt
Gamifi, Gabon
Growing Opportunity, India
Harbu, Ethiopia
HEED, Bangladesh
HFL, Afghanistan
IDF, Bangladesh
IMF Hekima, Congo
Juhudi Kilimo, Kenya
Khan Bank, Mongolia
KixiCredito, Angola
K-Rep, Kenya
Lak Jaya, Sri Lanka
LEAD, Egypt
Mahashakti, India
Makhzoumi Foundation, Lebanon
MCN, Haiti
MedNet, Uganda
MEMCO, Jordan
MicroCred Banque, Madagascar
MicroCRED, China
MicroLoan Foundation, Malawi
Mimoza, India
NEED, India
NWTF, Phlippines
Opportunity, Tanzania
Pak Oman, Pakistan
PASED, Sudan
PEACE MFI, Ethiopia
PRIDE, Tanzania

RCMEC, Ivory Coast
RYADA, Palestine
SEILANITHIH, Cambodia
Ujjivan, India
VisionFund, Cambodia
XacBank, Mongolia
Reef Finance, Palestine
SEAP, Nigeria
SKDRDP, India
Village Financial Services, India
VisionFund, Sri Lanka
PRIDE, Uganda