

**The Practitioner Learning Program
Putting Client Assessment to Work, Technical Note #2**

The Challenges of Measuring Client Retention

Author: Chuck Waterfield

Editors: Amy Davis Kruize, Jennifer E. Hansel, and Peggy McInerney



USAID
FROM THE AMERICAN PEOPLE

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The Practitioner Learning Program
Putting Client Assessment to Work, Case Study #2

The Challenges of Measuring Client Retention

Author: Chuck Waterfield

Contributing Editors: Amy Davis Kruize, Jennifer E. Hansel, and Peggy McInerney

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About the Author

Chuck Waterfield has 20 years' experience in microfinance, having served as microenterprise director for MEDA and for CARE International. He is the designer of Microfin, the de facto standard among MFIs for developing financial projections, developed the SEEP FRAME tool, pioneered the development of PDA-based software for use by loan officers, and has written extensively on Management Information Systems. Publications include the CGAP Business Planning Handbook, SEEP Financial Ratios Paper, CARE Credit and Savings Sourcebook, GEMINI Technical Note on Designing for Financial Viability, and CGAP Handbook on Management Information Systems. He is on the faculty of the Boulder Microfinance Training Program and Southern New Hampshire University's Microenterprise Development Institute.

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The author thanks Rich Rosenberg, Mark Schreiner, and Sean Kline for their valuable feedback and recommendations on how to make this paper more accessible to the reader and more practical in nature. With time, I could have gone even further in these directions, but thanks to their encouragement, the final paper is undoubtedly better in both respects.

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Acronyms

ACLAM	<i>Action Contre La Misère</i> (Haïti) (French) Action Against Misery
ASA	Activists for Social Alternatives (India)
CRECER	<i>Crédito con Educación Rural</i> (Spanish) Credit with Rural Education
FFH	Freedom From Hunger (Davis, CA)
MDF-Kamurj	Microenterprise Development Fund Kamurj (Armenia)
MFC/CEE/NIS	Microfinance Center for Central & Eastern Europe and the Newly Independent States
MFI	Microfinance Institution
PLP	Practitioner Learning Program
Pro Mujer	“Programs for Women” (Spanish)
SEEP	Small Enterprise Education and Promotion Network
URWEGO	“ <i>Ladder to Success</i> ” in Kinyarwanda language
USAID	United States Agency for International Development

Preface

The Practitioner Learning Program (PLP) is a SEEP Network initiative that explores key challenges facing the microenterprise field. A competitively run grants program, the SEEP PLP engages participants in a collaborative learning process to share and document findings and lessons learned, as well as to identify effective, replicable microenterprise practices and innovations to benefit the industry as a whole. The SEEP PLP is funded by the Microenterprise Development Division of the United States Agency for International Development (USAID). For more information on this and other SEEP PLP initiatives, see The SEEP Network website: www.seepnetwork.org.

The objective of “Putting Client Assessment to Work,” conducted from September 2002 through January 2005, was to encourage experiments in client assessment strategies, tools, and technologies.

During this SEEP PLP grantees focused on three major categories of client assessment: market research, client monitoring, and impact assessment. Market research refers to the systematic gathering, recording, analyzing, and applying of market intelligence collected from an institution’s clients or potential clients. Client monitoring looks at client well-being at various levels such as, business performance, income levels, and the ability to send children to school. Impact assessment tends to be more complicated than market research or client monitoring. It takes client monitoring a step further and attributes social outcomes to program participation.

As a result of their grants, the practitioners who participated in the SEEP PLP “Putting Client Assessment to Work” have improved their understanding of clients and markets as well as implemented changes in their operations, systems, and strategies to encourage innovation within their organizations.

This SEEP PLP focused on overarching questions of client assessment that were common to the various participant organizations. The participants themselves defined a specific learning agenda on the topic and during a face-to-face start-up workshop, developed learning questions and accompanying action plans. Participants then implemented the action plans in their respective countries and wrote periodic reports on their progress. The participants, the facilitators of “Putting Client Assessment to Work,” SEEP Network staff, and other experts shared information electronically over a SEEP Network web-based workspace and via listserv discussions throughout the duration of this initiative.

Table 1. Participants in the SEEP PLP in “Putting Client Assessment to Work” initiative

<i>Action Contre La Misère, Haïti (ACLAM)</i> Christon Domond	<i>Pro Mujer, USA</i> Jenny Dempsey
Activists for Social Alternatives, India (ASA) S. Devaraj Gaamaa Hishigsuren	<i>Pro Mujer, Bolivia</i> Andrea del Granado Carmen Velasco
<i>Crédito con Educación Rural, Bolivia (CRECER)</i> Gladys Flores Isabel Rueda Alfonso Torrico	<i>Pro Mujer, Peru</i> Demecia Benique Mamani Juana Coya Ticona Naldi Delgado Edith Vasquez Morales
Freedom From Hunger, USA (FFH) Bobbi Gray Christian Loupeda Lisa Parrot Beth Porter	Microfinance Centre for Central & Eastern Europe and the Newly Independent States, Poland (MFC/CEE/NIS) Michal Matul Katya Pawuluk Dorota Szubert
Microenterprise Development Fund Kamurj, Armenia (MDF-Kamurj), Margartia Lalayan Lusine Simonyan Gagik Vardanyan	“Ladder to Success” in Kinyarwanda language, Rwanda (URWEGO) Donat Nyilinkindi Willy Nzisabira

A second, or mid-term, workshop in September 2003 helped the team consolidate the learning process, extrapolate preliminary lessons learned, and identify new learning questions. As a result of the mid-term workshop, a rigorous and prolific listserv discussion was organized on the topic of research design—a challenge that was identified by all participants. Participants continued to submit periodic reports and shared lessons learned with each other after the mid-term workshop. Several organizations conducted “Peer to Peer” exchange visits with one another. In addition, during the grant period, facilitators and resource panelists were dispatched to visit participants’ sites to support meaningful dialogue and provide technical assistance. Finally, a closing workshop in January 2005 more concretely began the documentation process of capturing what participants had learned throughout this initiative.

The SEEP PLP “Putting Client Assessment to Work” was uniquely positioned to make crucial contributions to the microfinance industry on client assessment. As a result, it has provided source data to both The SEEP Network and ImpAct. The experience of the six MFIs that participated in this PLP program demonstrated that client assessment does make a difference. If carefully planned and implemented well, it enhances an MFI’s ability to achieve financial sustainability (by ensuring better-quality services) and helps maintain its social mission. The following are examples of some of the activities performed by participants:

- **Activists for Social Alternatives (ASA), India** designed and implemented a comprehensive client assessment strategy and cost-effective tools that strengthened its understanding of clients and markets.
- **Freedom From Hunger, USA** in partnership with *Action Contre La Misère*,¹ (ACLAM), **Haiti** and *Crédito con Educación Rural* ² (CRECER), **Bolivia** improved its responsiveness to clients in conflict and disaster zones, improved client retention, and reduced interest rates. ACLAM and CRECER then institutionalized their client assessment mechanisms by integrating them into their regular management systems.
- **URWEGO Community Banking**,³ **Rwanda** refined its initial action plan and provided managers with meaningful marketing and client impact data drawn from an integrated, cost-effective client assessment system. Eventually, URWEGO created a cross-departmental client assessment team that increased staff acceptance of the system.
- **PRO MUJER**,⁴ **Bolivia and Peru**, developed a specific focus on client assessment and research within their institutions, incorporated client response data into their respective management information systems, and strengthened the demand-driven nature of their services. Their client assessment efforts evolved from an externally driven impact assessment to an in-house capacity to conduct market research.
- **Microfinance Centre for Central and Eastern Europe and Newly Independent States (MFC/CEE/NIS), Poland**, worked in partnership with the **Microenterprise Development Fund (MDF-Kamurj), Armenia**, to jointly develop and implement a client tracking system and a new rural product, as well as increase regional knowledge about client assessment.

¹ Action Contre La Misère is “Action Against Misery” in French

² Crédito con Educación Rural is “Credit with Rural Education” in Spanish

³ URWEGO is “Ladder to Success” in Kinyarwanda language

⁴ Pro Mujer is “Programs for Women” in Spanish.

Forward

As the saying goes, we manage what we measure. That's why well-designed performance indicators are so powerful in microfinance, just as in any other business. They focus a manager's attention on the key dynamics driving a business, making those dynamics easier to understand and less time-consuming to track.

Client retention—keeping the customers coming back—is massively important in microfinance. Retention has a major impact on cost, income, and thus, overall financial performance. Furthermore, retention is a useful (though not perfect) proxy for client satisfaction. Clients “vote with their feet:” their decisions about continued use of microfinance services can tell us a lot about whether they think those services are helping them and their households. Any microfinance institution whose ultimate objective is client welfare will want to pay particularly attention to retention performance and how to measure it.

Unfortunately, measuring client retention has proved troublesome. All of the indicators in current use have problems and no consensus indicator has emerged that would allow standardized comparison of an MFI with other, similar institutions.

In this very useful paper, Chuck Waterfield goes well beyond anything published so far, laying out the problems associated with retention measurement and offering a new formula for a theoretically sound indicator. Any MFI designing a new management information system (MIS) might well incorporate this formula into their software. Managers of such MFIs can probably read the main body of this paper without lingering over the explanatory discussion in the Annex.

As the author points out, however, the existing systems of many MFIs cannot produce all the information needed for the client retention formula. Managers of such MFIs need a detailed grasp of the issues involved in measuring client retention in order to understand the limitations of their current systems and to design changes that will approximate a correct formula as closely as possible. For these managers, a careful reading of the details contained in the Annex is advised.

*Richard Rosenberg
Senior Adviser, CGAP
May 2006*

Introduction

A primary responsibility of management is to monitor the performance of an institution to determine whether it is reaching its goals. To do so, managers generate ratios to monitor important aspects of performance. In microfinance, a very well-developed set of financial ratios exists to monitor profitability, efficiency, growth, and portfolio quality, among other areas. Yet one area of prime importance generally goes unmeasured: client satisfaction. Managers are clearly very interested in knowing whether their clients are satisfied, but because measures of client satisfaction cannot be directly derived from financial statements, this area is much more difficult to monitor. A popular surrogate for client satisfaction is client retention, yet even this indicator proves difficult to measure. This paper evaluates the history of the microfinance industry's efforts to measure client retention and proposes several options for improving how this key aspect of a successful business is measured.

Section 1

Why Measure Client Retention?

Throughout the 1980s and early 1990s, there was a common belief that the microfinance market was virtually infinite. Client retention was rarely discussed or measured; some institutions were even willing to ban clients for the slightest infraction of rules. Managers of these MFIs believed that there would always be a long line of new clients ready to step in and replace discarded clients. Within the past 10 years, however, market saturation has become a reality recognized by even the strongest skeptics. As a result, most MFIs now understand the importance of client retention to the future viability of their institutions.

Client retention (and its complement, client desertion) have significant wide-ranging implications for an institution. MFIs that improve client retention see the following positive changes:

- **institutional costs** decrease as the institution needs to do less marketing, less new client orientation, and fewer new client background checks
- **staff productivity** increases because loan officers work with established clients whom they know well
- **loan risk** generally decreases, as clients with an established credit history normally have good repayment records
- **income** increases as loan sizes generally increase with experienced clients
- **market saturation** decreases as there is less need to bring new clients into the institution

- **public image** improves with satisfied clients. If desertion is high, it is possible to have a market filled with more ex-clients (many of whom are likely complaining about your institution) than current clients!
- **staff morale** improves as staff members work with satisfied clients all day rather than hearing criticism from dissatisfied clients
- **financial sustainability** increases as costs go down and income goes up!

In fact, most analyses show that an MFI loses money on the first three or four loans it makes to a client. Without high client retention, an MFI will thus find it impossible to reach sustainability.

Before proceeding, it is important to acknowledge that client retention is not the same as client satisfaction.⁵ Client satisfaction is a difficult concept to measure precisely. Ideally, an institution would use a well-designed opinion survey to measure it, but such surveys can be both difficult and costly to implement. Although far from an ideal measure of client satisfaction, client retention is monitored by many MFIs partly because this indicator also provides information critical to their long-term financial performance.

⁵ This paper was created as a part of the SEEP Practioner Learning Program (PLP) in “Putting Client Assessment to Work.” Other resources developed under this Program would be useful references and may be found at www.seepnetwork.org.

Section 2

More complex than it seems

At first glance, client retention seems to be a straightforward concept: Are we keeping our clients? Client retention is expressed as a percentage, with clients either being retained or deserting, with the total adding to 100 percent, as shown in figure 1. Upon further reflection, however, things are not so straightforward.

Figure 1. The Simple Approach

Retention	80%	(do our clients remain?)
Desertion	20%	(do our clients leave?)

Total	100%	

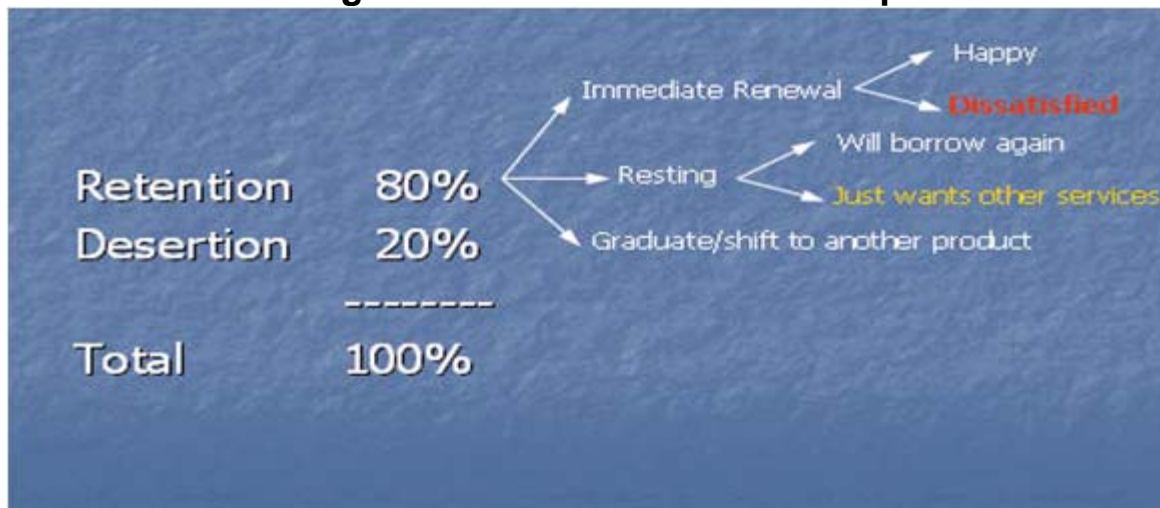
Complications in retention

Once a loan is paid back, a client may choose to immediately renew their loan (a clear case of client retention). Although a positive decision for the institution, management cannot confidently conclude that the client is satisfied; it may be that the client needs the product and has no alternative due to lack of competition.

Alternatively, a client may choose to postpone his or her decision for legitimate reasons, with the intention of borrowing again soon (this postponement is commonly called “resting;” see explanation in box 1 of this article). Or he or she may choose to remain a client for other services offered by the institution, such as savings. Clearly we need to clarify how we define an “active client.” Do we mean a client who has a loan? A client who uses other services, but does not have a loan? A client who does not currently access any services, but indicates an intention to return in the future (if so, within what timeframe)?

Another difficulty also exists. If our indicator is a measure of *product* retention, as distinct from *client* retention, a client may choose to shift to a different product (commonly called “graduation”). In this case, low *product* retention rates may not be an indicator of client dissatisfaction. MFI managers may thus need *client* retention as well as *product-specific* retention rates.

Figure 2. Retention is More Complex



Complications in desertion

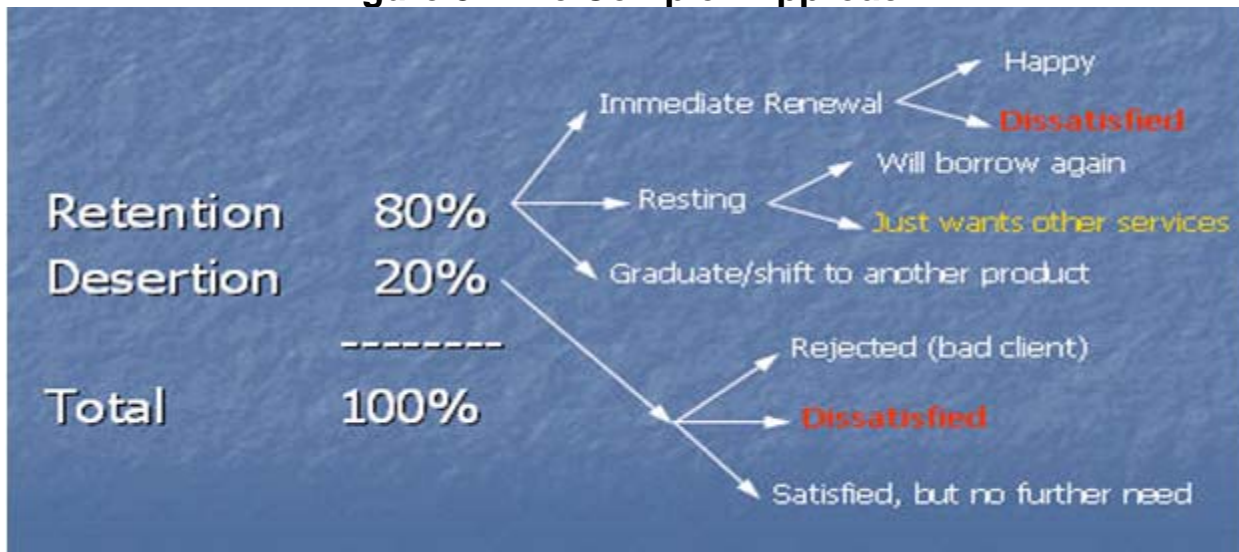
Similar complications arise when evaluating client desertion. We often assume that a client's decision not to continue borrowing indicates some kind of dissatisfaction. Often this assumption is true. However, client desertion is not perfectly correlated with client satisfaction.

Was the client rejected by the institution due to a poor repayment history or some other factor? If so, the client may actually have been satisfied with the services and interested in continuing as a client.

Or did the client desert because she has succeeded? Perhaps the client has been very happy with the institution's services, but currently finds she has no further need of its services.

In the end, our "simple approach" no longer looks so simple!

Figure 3. The Complex Approach



Box 1. The phenomenon of “client resting”

Many times, clients do not immediately renew their loans, a postponement that the microfinance industry has taken to calling “resting.” This resting time is financial “down time” for the MFI because it does not earn any income from the client during this period. However, resting is a natural phenomenon that is not necessarily linked to client satisfaction.

Measuring client retention requires a timeframe that distinguishes between clients who are legitimately resting and clients who probably won’t return to an MFI. For village banking methodologies, where decision points are tied to a group lending cycle, a reasonable timeframe might be a single lending cycle. If a client decides not to renew at the second opportunity, for example, we may decide to consider that client a deserter in credit terms.

As described in a MicroFinance Centre (MFC) *Spotlight Note*,^a some institutions have found that clients sit out for up to a year before returning to take out a new loan. As the MFC rightly points out, such a long definition of resting means that the retention indicator becomes very slow to respond to changes in client behavior and therefore loses its value to MFI managers. If it takes a full year to detect that client retention is dropping, managers have lost an opportunity to do something about it.

An alternative approach is to develop “aging categories” to measure the risk of losing clients, just as MFIs do for the risk of loan defaults. By developing different client aging categories, we can generate different retention rates that can tell us things about client behavior in a more responsive fashion. We may therefore choose to define two or more retention ratios, each with a different cutoff date for resting. Such ratios could, for example, track:^b

- Regular clients (borrow again within 2 months)
- Resting clients (2–6 months)
- Likely deserters (7–12 months)
- Confirmed deserters (more than 12 months without a loan)

As pointed out by the MFC, an additional advantage to this type of client segmentation is that the institution can then target specific marketing strategies to each of these groups, employing such techniques as the frequency of follow-up visits, use of mailings, and possible promotions or special offers to bring clients back.

^a Katarzyna Pawlak and Michal Matul, "Client Desertion in Microfinance: How to Diagnose it Successfully?" *MFC Spotlight Note*, no. 11 (April 2004), <http://www.mfc.org.pl/index.php?section=NET&page=Other> (accessed February 2006).

^b The formulas used in this paper can be explicitly modified to allow for resting, as shown in footnotes 6 and 8.

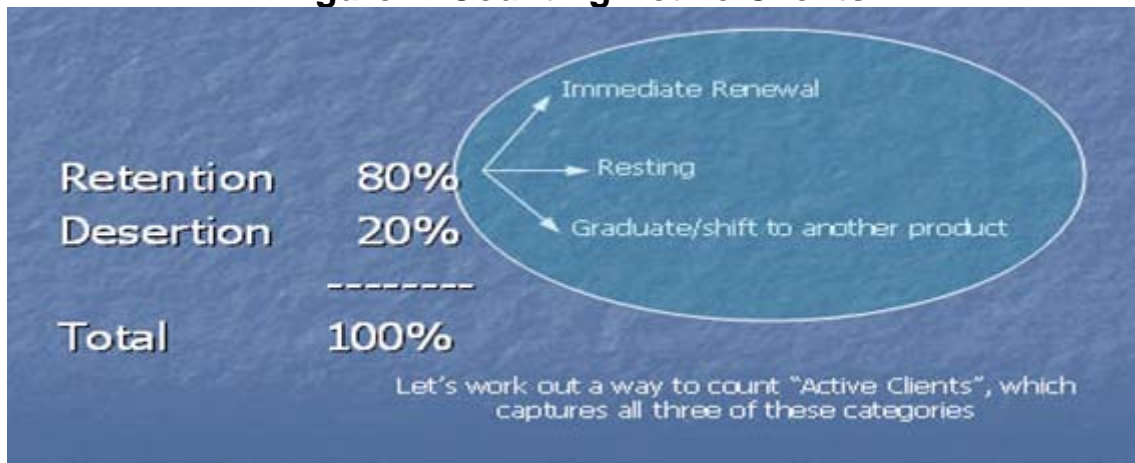
Section 3

A simple example

Before we continue, we need to agree on the definition of a "client." What determines if someone is a client?

- Do they need to have a loan at the time they are identified as a client? If so, we would have an extremely strict measure of credit retention. If our primary concern is revenue generation, this may be an appropriate definition, but it will be a relatively weak measure of client satisfaction.
- Can "clients" rest between loans? If so, we have included some latitude in our measure. How long can they rest, however, before they are considered deserters?
- Can they be receiving *other* services, even though they are no longer borrowing? If so, we have a much broader measure of client retention, but one that may be meaningless with respect to an MFI's income.

Figure 4. Counting Active Clients



Once we move beyond definitions, we face still more challenges. (Measuring things in real life is often more complex than it first appears in theory.) Let’s look at a simple example:

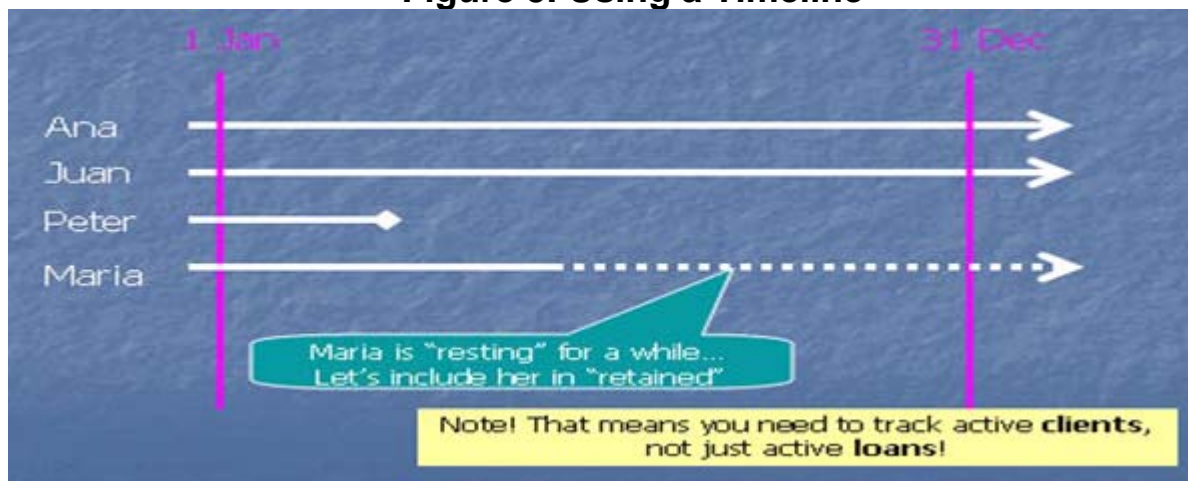
Table 2. Defining client retention

Name	Situation	Retained?
Ana	Recently paid her loan and received a new loan	Yes
Juan	Recently paid his loan and received a new loan	Yes
Peter	Defaulted on his loan and has been banned from the institution	No
Maria	Recently paid her loan but has indicated that she wants to wait 2 months before taking out a new loan	Yes, if resting is included in ratio definition
Summary	3 out of 4 clients are retained	75%

As shown, the data indicates a retention rate of 75 percent. When collecting and analyzing client retention data, however, we need to establish a retention calculation that includes a timeframe for resting clients. Figure 5 portrays the same information on a timeline with beginning and ending dates.⁶

⁶ Data for specific a point in time, such as balance sheet data, are called “stock” variables and need only one indicated date. Client retention is a “flow” variable, as are income statement data, and therefore needs beginning and end dates. As we will see, it is the mixture of stock and flow variables in retention ratios that contributes to the problems in measuring client retention.

Figure 5. Using a Timeline

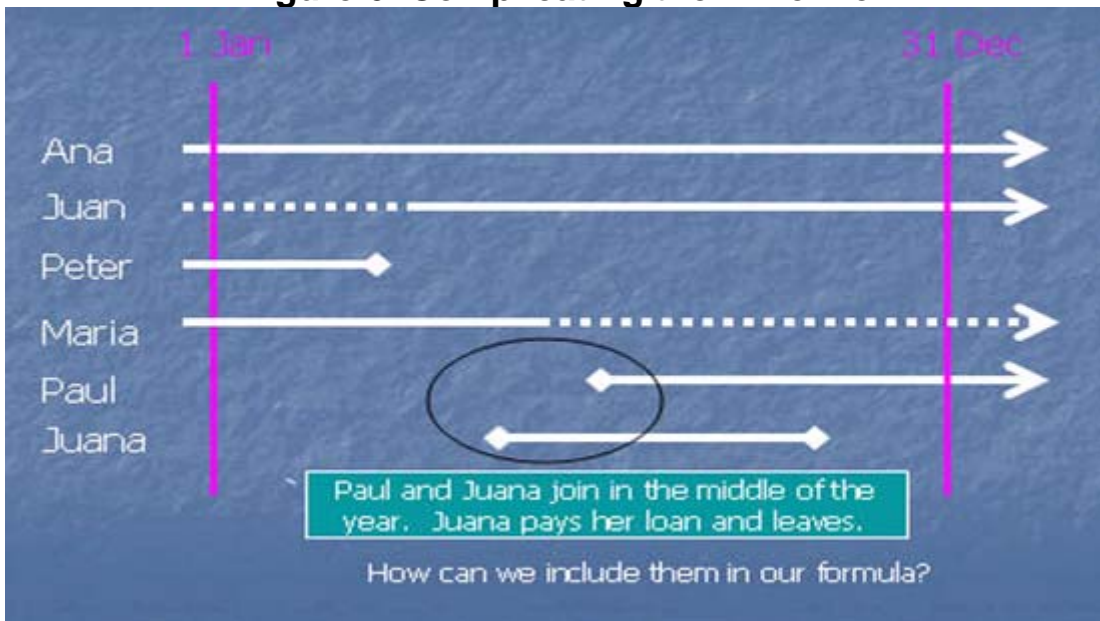


If we define “clients” to include resting clients, we can then show the retention rate via a simple formula:

$$\text{Retention Rate} = \frac{\text{End Clients}}{\text{Beginning Clients}} = \frac{3}{4} = 75\%$$

To demonstrate that resting can also happen at the beginning of the cutoff dates, let’s modify our initial data to say that Juan was resting at the beginning of the period and took out his new loan during the period measured. Note that the examples thus far have not considered clients who joined the MFI for the first time during the period under analysis. When we include this common reality, things change quite significantly—our simple formula no longer works. Consider the case shown in figure 6, where Paul joins in the middle of the period, and Juana both joins and leaves during the period. How can we measure overall retention in this scenario?

Figure 6. Complicating the Timeline



We need to modify our formula. Since the concept of retention is to determine “how many clients an MFI retained of those that were clients during the year,” it makes most sense to state the number of “clients during the year” in the *denominator* rather than the numerator.⁷ Our formula would thus state:⁸

$$\text{Retention Rate} = \frac{\text{End Clients}}{\text{Beginning Clients} + \text{New Clients}}$$

⁷ Although perhaps obvious, the most common early retention rate used by the microfinance industry did the opposite. For a detailed explanation of both alternatives, please see the annex.

⁸ The issue of resting can be explicitly incorporated into this formula via the following adjustment:

$$\text{Retention Rate} = \frac{\text{Active Loans}_{(\text{End})} + \text{Resting Clients}_{(\text{End})}^{[\text{x days}]}}{\text{Active Loans}_{(\text{Begin})} + \text{Resting Clients}_{(\text{Begin})}^{[\text{x days}]} + \text{New Clients}}$$

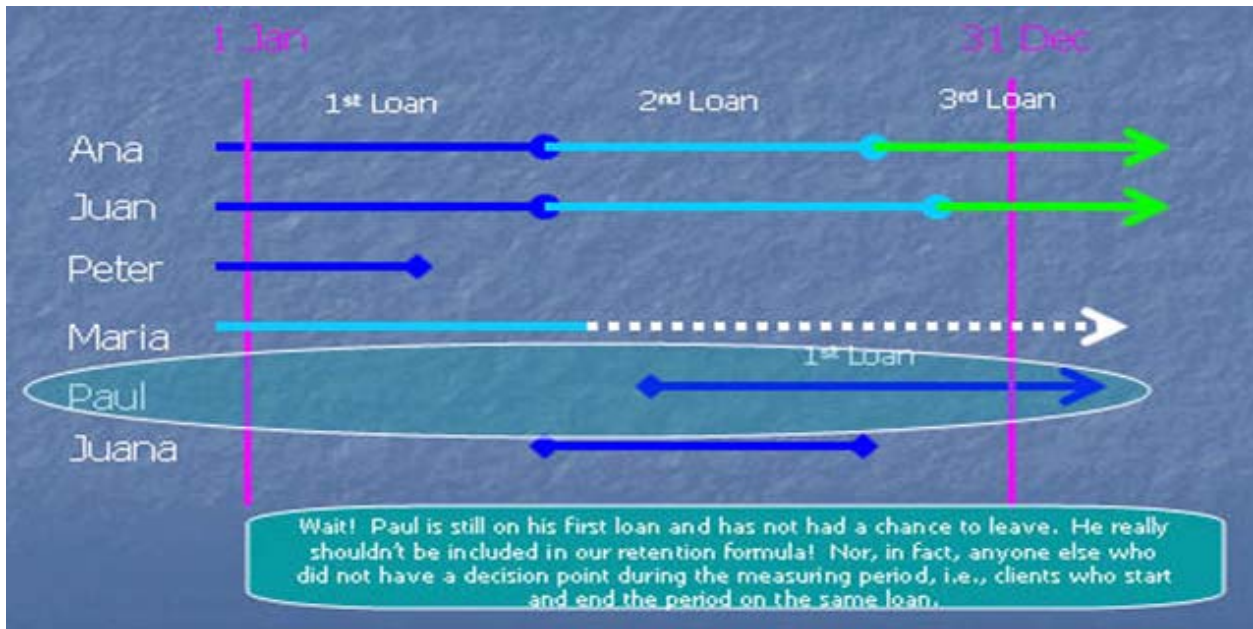
Figure 7. Including Clients in the Timeline



With the data shown in figure 6, the rate would be $4 / (4 + 2)$, or 66 percent. This appears logically consistent with the data, as two clients have clearly deserted.

Yet there is another logical inconsistency in this formula. The goal of the formula is to measure client retention, but clients really need to have reached a **decision point** during the measurement time frame in order to be included in the retention rate calculation. In figure 7, we see that Paul received a loan (and is thus considered a “new client”), but has not yet finished his loan and therefore hasn’t actually decided if he will renew it. In other words, he hasn’t actually been “retained” yet. The same could be said of any other client who has not reached a “decision point” during the measurement period.

Figure 8. A Problem with the Timeline



Adjusting the formula for decision points

What we really need is a formula that compares the following:

Clients that had a decision point during the period **and remained**

 Clients who had a decision point during the period

Such an approach would compensate for clients that have not yet faced a “decision point” during the measurement period.⁹ We can integrate this concept into our existing retention rate formula

by excluding from both the numerator and denominator all clients who have been repaying the same loan during the measurement period:¹⁰

End Clients – Clients with Same Loan

Retention Rate = -----

⁹ Note that if our definition of “client” is broadened to incorporate other services, we would also need to define “decision points” for those clients.

¹⁰ The issue of resting can be explicitly incorporated into this formula via the following adjustment:

Active Loans_(End) + Resting Clients_(End)^[x days] - Clients with Same Loan

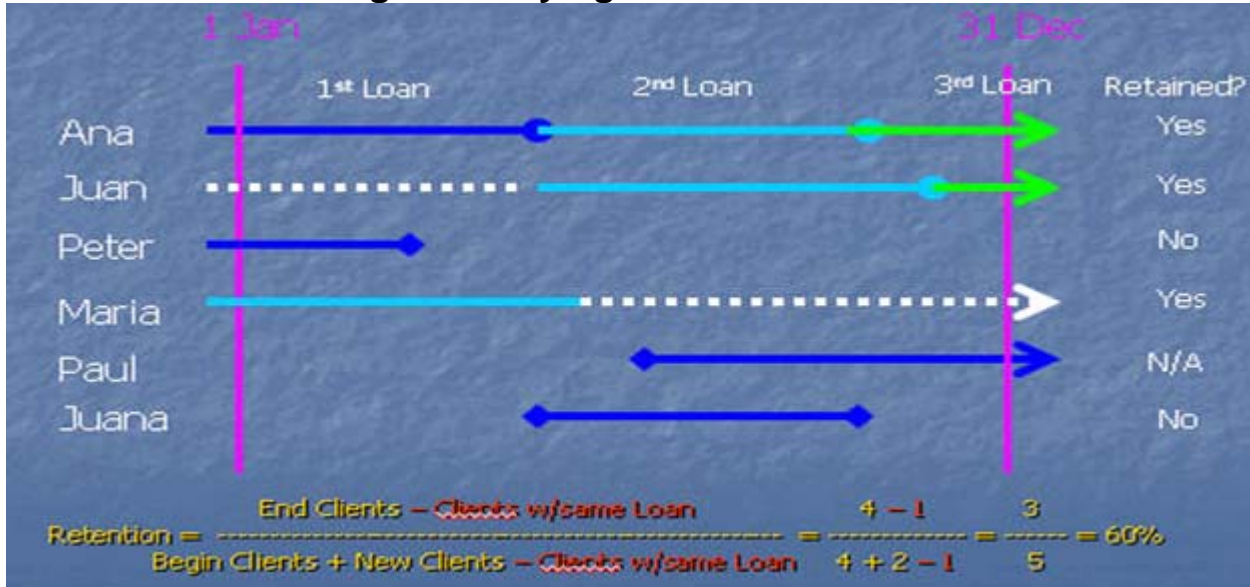
Retention Rate = -----

Active Loans_(Begin) + Resting Clients_(Begin)^[x days] + **New Clients** - Clients with Same Loan

Begin Clients + New Clients – Clients with Same Loan

Trying this new formula on our standard data, we find that Paul is still repaying the same loan and needs to be excluded from the measurement. With the previous formula, four out of six clients are retained, or 66 percent. With the revised formula, three out of five clients are retained, or 60 percent. This formula seems intuitive, consistent, and addresses all the logical issues that we have encountered in our analysis.

Figure 9. Trying the New Formula



Applying the retention rate formula

If an MFI can produce the necessary data, it seems this final formula would be as accurate a measure of client retention as can be produced. In the absence of the same-loan correction factor we have added, an MFI can come up with a reasonable approximation using the simpler adjusted formula. The degree of error will increase, however, if:

- the loan term is long relative to the measuring period (i.e., more clients are included who have not yet reached a decision point)
- the institution is growing significantly and there are a large number of first-time clients who have not yet reached a decision point

Box 2 describes the abilities of several MFIs to generate the necessary information for these retention ratios. As expected, although all can generate the basic ratio, only a few can generate the more advanced ratio, mostly due to constraints imposed by their portfolio software. If MIS programmers can make improvements in this area, we can look forward to a day when our ability to quote and compare retention rates is at the same level as our financial sustainability and portfolio at risk levels.

Box 2. Getting the data in real life

Just how feasible is it to obtain data for either of the adjusted client retention formulas? The answer depends on the definitions employed by an institution's information system, as well as the design of that system. Consider the situations of the following MFIs that participated in the SEEP PLP in "Putting Client Assessment to Work" under which this paper was developed:

- ProMujer programs (in Peru, Bolivia, Nicaragua, and Mexico) use a village banking lending methodology. Clients reach decision points at specific points in time, making it potentially easier to collect client resting data. However, ProMujer uses a definition of "active clients" that includes clients receiving *any* service, not just credit. Due to the broader definition, defining a "decision point" becomes more complicated. If ProMujer measured "credit retention," its system could generate data on active loans, but would be unable to isolate the number of clients on the same loan. The MFI could not, then, apply the more accurate formula.
- URWEGO (in Rwanda) also uses a group lending methodology. Although it limits the definition of "client" to credit services, URWEGO's MIS is similarly unable to generate information for clients with the same loan. Accordingly, the MFI cannot use the more accurate formula.
- MDF (in Armenia) uses an individual lending methodology and a sophisticated MIS that can extract data on a much wider array of criteria than any of the other MFIs surveyed. MDF can generate data for the "improved" formula, as well as different resting "cut-off" dates.
- CRECER (in Bolivia) uses a village banking methodology and has recently developed a new MIS that is capable of tracking all data needed for any of the formulas outlined in this paper, including different resting "cut-off" dates.
- ACLAM (in Haiti) uses a group lending methodology and defines active clients as clients who have loans. However, its MIS is not capable of generating data for the more precise retention rate formula.

Table 3. A comparison of the client retention data generated by 5 MFIs

Data Point	Pro Mujer	Urwego	MDF	CRECER	ACLAM
Begin clients	Y	Y	Y	Y	Y
End clients	Y	Y	Y	Y	Y
New Clients	Y	Y	Y	Y	Y
Clients with same loan	N	N	Y	Y	N
Resting Clients	Y	Y	Y	Y	Y
Resting within "x" days	N	N	Y	Y	N

In summary, the five institutions are capable of the following:

- Completing only the basic retention rate formula: ProMujer, Urwego, ACLAM
- Completing the advanced retention rate formula: MDF, CRECER
- Completing the advanced retention rate formula with aging categories: MDF, CRECER

Annex. The History, Evolution, and Limitations of Retention Rate Formulas

Despite the importance of client retention and the prolonged awareness of this performance indicator within the microfinance industry, there has been surprisingly little written to date on this topic.¹¹ Three main formulas have emerged in the literature and in practice:

- 1) **The “old” formula:** This formula has become known in the literature as the “ACCION” formula. Initial attempts measured the “desertion rate,” or the percentage of clients who did not continue to borrow for some reason. ACCION conducted the first widely recognized effort to measure desertion, partly in reaction to one of their affiliates losing 50 percent of its clients per year in the mid-1990s as competition heated up in Latin America. We will refer to this as the “old” formula because ACCION stopped using it in 1997 (though many other networks continue to use the formula).
- 2) **The “new” formula:** This formula is often referred to as the “Schreiner” formula. In 1997, Mark Schreiner, a research consultant in microfinance, proposed an alternative measure in his Ph.D. dissertation. ACCION later converted to using this formula.
- 3) **The “Microfin” formula:** Sometimes referred to as the “Waterfield/CGAP” formula, this alternative approach was developed in 1997 and incorporated into CGAP’s “Microfin” business planning tool. It used a substantially different approach to measuring retention to overcome the limitations of the two other formulas, but in so doing, introduced a new set of limitations.

This annex reviews how these three formulas handle two major complications, highlighting their strengths and weaknesses.

¹¹ Historically, the two most notable publications are: Rich Rosenberg, “Measuring Client Retention,” *MicroBanking Bulletin*, no. 6 (April 2001), and Craig F. Churchill and Sahra S. Halpern, “Building Customer Loyalty: A Practical Guide for Microfinance Institutions,” *Technical Guide No. 2* (Washington, DC: MicroFinance Network, 2001), 39 and appendix 4. Within the past year, the MicroFinance Centre has begun producing analytical documents on client satisfaction and loyalty that address the issue of measuring retention. Most notable are: Katarzyna Pawlak and Selma Jahic, “Promoting Client-Focused Organization – Partner’s Exit Monitoring System,” *MFC Spotlight Note*, no. 9 (February 2004), <http://www.mfc.org.pl/index.php?section=NET&page=Other> (accessed February 2006), and “Client Desertion in Microfinance” 2004 (see box 1).

Complication 1: Clients joining during the measurement period

The main body of the paper raised the issue of clients who join an MFI for the first time during the period under analysis. How can MFIs account for such “new clients” in retention rate calculations? Let’s first look at the “old” formula used by ACCION in the mid-1990s. The focus at that time was on client “desertion” and the formula was expressed as:

$$\text{Desertion Rate} = \frac{\text{Beginning Clients} + \text{New Clients} - \text{Ending Clients}}{\text{Beginning Clients}}$$

Using some basic algebra,¹² this can be converted to:

$$\text{Retention Rate} = \frac{\text{Ending Clients} - \text{New Clients}}{\text{Beginning Clients}}$$

We’ll test this formula in a moment. However, since the concept of retention is to determine “how many clients does an MFI retain of those people who were clients during the year,” it makes most sense to state the number of clients during the year in the *denominator* rather than the numerator. The reconstituted formula would thus be:

$$\text{Retention Rate} = \frac{\text{End Clients}}{\text{Beginning Clients} + \text{New Clients}}$$

This is, in fact the “new” formula that appeared in microfinance around 1997. In Table 3 below let’s see how the two formulas behave under different conditions.

¹² The calculations are as follows:

$$\text{Retention Rate} = 100\% - \text{Desertion Rate}$$

$$= 1 - \frac{\text{Beginning Clients} + \text{New Clients} - \text{Ending Clients}}{\text{Beginning Clients}}$$

$$= \frac{\text{Beginning Clients} - (\text{Beginning Clients} + \text{New Clients} - \text{Ending Clients})}{\text{Beginning Clients}}$$

$$= \frac{\text{Ending Clients} - \text{New Clients}}{\text{Beginning Clients}}$$

Table 3. Three scenarios for client retention

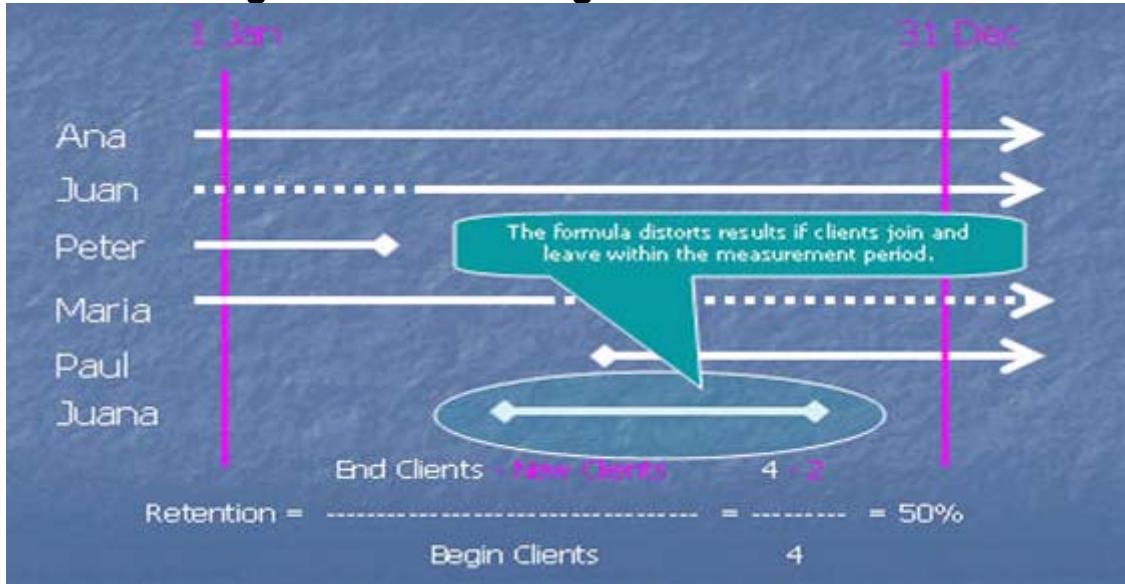
<i>Data</i>	<i>"Old" formula</i> $\frac{\text{End Clients} - \text{New Clients}}{\text{Beginning Clients}}$	<i>"New" formula</i> $\frac{\text{End Clients}}{\text{Begin Clients} + \text{New Clients}}$
Case 1 Begin = 4 New = 2 End = 4	$\frac{4 - 2}{2} = \frac{2}{2} = 50\%$	$\frac{4}{4 + 2} = \frac{4}{6} = 66\%$
Case 2 Begin = 1000 New = 2000 End = 2000	$\frac{2000 - 2000}{1000} = \frac{0}{1000} = 0\%$	$\frac{2000}{1000 + 2000} = \frac{2000}{3000} = 66\%$
Case 3 Begin = 100 New = 2000 End = 1900	$\frac{1900 - 2000}{100} = \frac{-100}{100} = -100\%$	$\frac{1900}{100 + 2000} = \frac{1900}{2100} = 90\%$

The first case shows our example data from the timeline. The “old” formula gives a retention rate of 50 percent whereas the new formula gives a rate of 66 percent. In studying the timeline, we see that out of the six clients, the MFI lost two (Peter and Juana), so the 66 percent rate appears more accurate.

Things become even clearer when we experiment with more extreme data. In the second case, we start with 1,000 clients, add 2,000 new clients, and end with 2,000, implying that 1,000 clients have deserted. The “new” formula gives the expected rate of 66 percent, but the old formula gives a retention rate of 0 percent! And a third case, showing a young-but-growing program that adds a considerable number of new clients during the measurement period, gives a retention rate of *negative* 100 percent, which would indicate a complete collapse, whereas the new formula gives a more intuitive 90 percent figure.

Figure 12 demonstrates the flaw in the logic of the “old” formula. If clients join *and* leave during the same measurement period, they distort results because they are deducted from the numerator (End Clients) but are not included in the denominator (Beginning Clients), making their impact on the results inconsistent and unpredictable. Because the “new” formula includes new clients in both the numerator *and* the denominator, it seems much more promising.

Figure 10. Visualizing the “Old” Formula



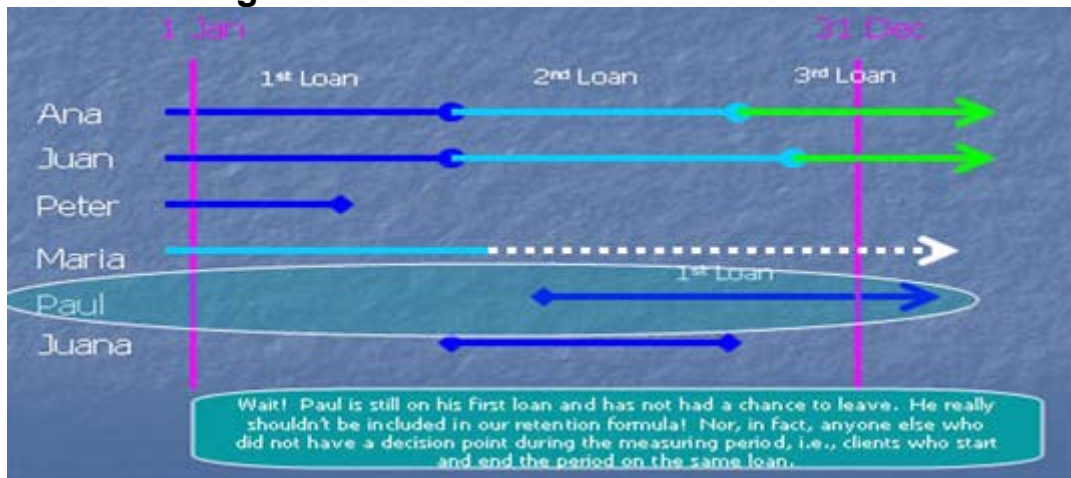
Complication 2: Giving clients a chance to renew

The main body of this paper pointed out a second logical inconsistency in both formulas.¹³ The goal of the formula is to measure client retention, but clients need to have reached a decision point during the measurement time frame to be considered in the calculation.

Concerned with this weakness while developing the “Microfin” business planning tool for CGAP in 1997, I developed a retention rate formula that looked exclusively at decision points. The point of measuring retention is to know “*will a client buy our product when they have used up their previous purchase?*” In other words, “*when a client finishes paying back a loan, will she request and receive a second loan?*” If during the measurement period, 100 clients pay off their loans and 80 receive new loans, the result would be an 80 percent retention rate.

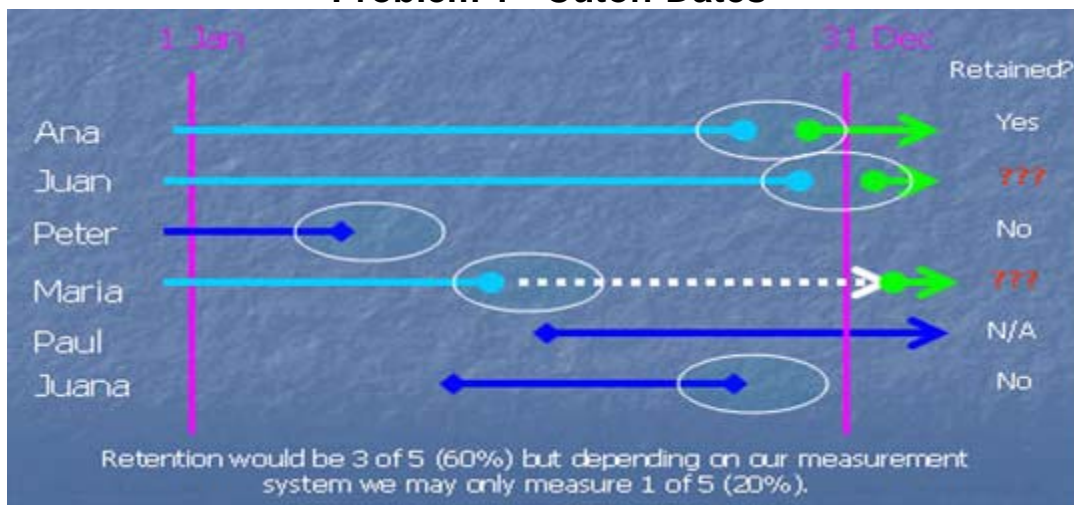
¹³ I first pointed out this flaw in a 1998 USAID/ACCION Matching Grant Mid-term Evaluation (USAID, Washington, DC, 1998, Annex 4): “Both the desertion formula [“old” formula] and the retention formula [“new” formula] inherently overstate client retention rates because they include new clients in their calculations that have not yet had a chance to either be retained or to desert. For example, in an institution with 5,000 new clients during the year and an average initial loan term of six months, half of the clients, or 2,500, are considered to be retained by the institution even though they have not yet finished their first loan cycle. The longer the initial loan term, the more pronounced this effect.”

Figure 11. A Problem with the Timeline

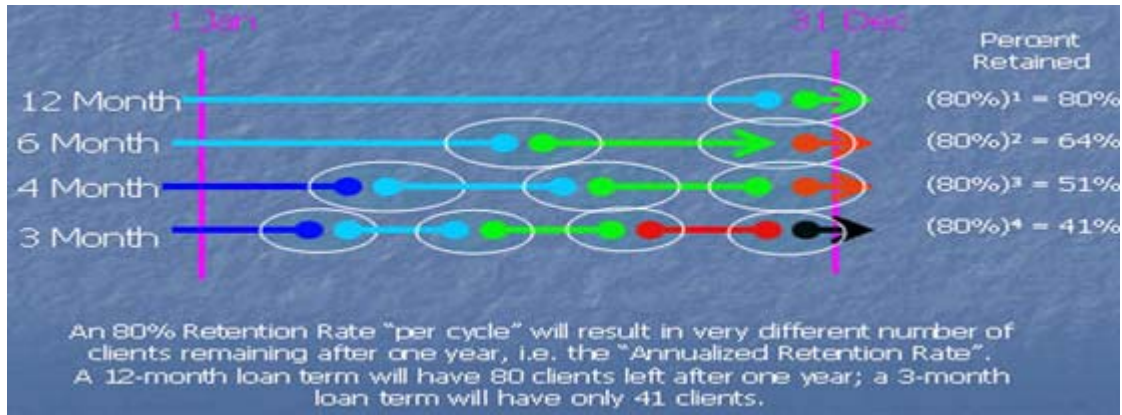


While simple in theory, this alternative approach presents two problems. The first problem is clients without active loans. As shown in the diagram, if a client is waiting for a new loan to be disbursed (Juan), or a client is still resting at the end of the measurement period (Maria), it is not certain if they will renew. The data would thus need to be adjusted for waiting and/or resting to make any sense.

**Figure 12. Microfin Formula
Problem 1 - Cutoff Dates**



**Figure 13. Microfin Formula
Problem 2 – Loan Term**



The second problem is more serious. Because a client may have more than one decision point a year, the retention rate calculated with our new approach can vary with the frequency of the loan term, making comparisons difficult. As shown in figure 15, if 80 of 100 clients renew their 12-month loans, there will be 80 clients remaining after one year. However, if the loan term is 6 months and the stated retention rate remains 80 percent, there will be 80 clients after 6 months, and only 64 clients (80% of 80) remaining after 12 months.

As the loan term shortens, the situation becomes more drastic. If only 80 percent of clients renew their 3-month loans, the institution will only have 41 of its original 100 clients at the end of the year ($80\% \times 80\% \times 80\% \times 80\%$). In other words, as the loan term shortens, the institution needs increasingly higher nominal loan retention rates to have the same number of clients retained at the end of the year because the Microfin definition is based on "loan cycles" rather than time periods. To account for this, Version 3.0 of Microfin introduced the concept of "annualized retention rates," which calculated the number of clients that would remain after 12 months for a given retention rate and loan term. As might be expected, this approach becomes very difficult to implement using actual data, especially in institutions that offer products with a variety of loan terms.

Fortunately there is a solution to this dilemma. The advanced formula developed in this paper incorporates the issue of "decision points" into the simplicity of the earlier formula:

$$\text{Retention Rate} = \frac{\text{End Clients} - \text{Clients with Same Loan}}{\text{Begin Clients} + \text{New Clients} - \text{Clients with Same Loan}}$$