

# **Making a Difference:** **An Impact Survey of Ganesha** **Microfinance Foundation, Indonesia**

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## **Abstract**

In a random sample survey of some 180 borrowers of the Ganesha Microfinance Foundation – all women, with a maximum loan size of US\$50, 100 and 150 in respectively the first, second and third years – the personal income of borrowers increased by 36 percent on average between the first year and the second year in the program (unadjusted for inflation). The total income of their households, which includes the earnings of the husband, rose by 20 percent on a per capita basis and in nominal terms, in part due to the increase in household size. ‘Before and after’ data indicate that borrowers more than doubled their nominal income between early 2003, the start of the program, and April 2005, the time of the survey. As a result, the share of households below the official urban poverty line declined from 86 to 38 percent, with the biggest change occurring during the first loan, and being sustained over the next two years. However, ‘before and after’ comparisons are subject to the accuracy with which the program collected baseline administrative income data. Members’ participation in the program led to an increase in hours worked from 30 to 35 hours per week on average. Their housing also improved, especially in the second year, with the number of very poor houses declining from 84 to 69 percent. Qualitative data support these gains. Over 70 percent of the surveyed households reported a significant increase in income, and 45 percent of members reported undertaking significant housing improvements. Most members reported high satisfaction with the program and planned to remain in the program to expand their businesses by borrowing more. The women played a leading role in utilizing the loan and deciding how additional income was spent in the household.

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## Overview of Ganesha

Ganesha Microfinance Foundation (*Yayasan Ganesha Keuangan Mikro*) is a non-profit, non-governmental Micro-Finance Institution (MFI) founded in 2003, whose purpose is to: “lift poor people in Indonesia above the poverty line, directly and sustainably” (Ganesha Microfinance Foundation, 2004:1). Essentially, Ganesha makes unsecured loans of Rp 500,000 to Rp 1,500,000 (US\$ 50-150) to poor women to use in micro-enterprises. Women repay at the weekly meetings held near their residence. In this way the bank comes to the customer rather than the customer going to the bank. There are two keys to sustaining the program. First, women must repay their loans, and second, the money must be invested in activities that yield enough profit to repay the loan and improve the financial circumstances of the women. Ganesha only lends to women who mostly live in absolute poverty. To guide its development, Ganesha has modeled its program on the successful and internationally renowned Grameen Bank of Bangladesh. (For a complete description of the Grameen model, see Yunus & Julis, 1999). The central assumption of this model is that, paraphrasing Yunus, “the poor have developed survival skills and work extremely hard. However, they have more time and skills than they can use.” (Ganesha, 2004:2). Ganesha believes that if these poor women have access to credit at reasonable rates, “...they will be able to identify and engage in viable income generating activities—simple processing such as tofu making, paddy husking and food preparations; manufacturing such as pottery, weaving and garment sewing; and petty trading, storage, marketing and transportation services...” (Ganesha, 2004:2).

The Ganesha process works by targeting villages with large populations of poor people. Villages are identified through administrative data and through field work. Once a village is targeted, field workers, all women, talk with residents and explain the lending program. Groups of borrowers are formed until there are enough to form a Center, which is made up of 15 to 25 members. Eligibility to join is determined by assessing the member’s assets, income and business idea. A key aspect of the assessment is evaluating the member’s house to make sure that the member is living in poverty. Senior Ganesha staff, also all women, visit the houses of each of the members to make sure that that the program is reaching the poorest of the poor. Members then undergo five days of training where the groups meet for one hour a day and learn about the opportunities and obligations involved in joining Ganesha. Training is verbal and interactive, since many members are illiterate. At the end of the training group, members are tested by senior Ganesha staff by asking them questions about membership and Ganesha policies and procedures.

After the five-day training is completed, women receive up to Rp. 500,000 (\$50) for their first loan. They are expected to repay the loan over 50 weeks in equal weekly installments, which are collected at the weekly Center meetings. A fixed interest rate of 30% is charged on the loan. This interest covers the cost of capital and the cost of servicing the loan. While the rate looks substantial, it is far less than what village money lenders charge. If members complete repayment on time, they may borrow a second loan of up to Rp 1,000,000 (\$100); if that loan is successfully repaid they may borrow a third loan of Rp. 1,500,000 (\$150). The vision is that members will continue to borrow from Ganesha as they build their enterprises and increase household income over the long term.

The Centers are encouraged to be collectively responsible for repaying all the loans. Each Center has a reserve fund to which each member has contributed. If a member is unable to pay or is absent any week, the group must pay for that member out of their reserve fund.

The social pressure of other group members who are friends and neighbors, as well as the incentive provided by the chance to get a larger loan after successful repayment are what secure the loans. In addition, Ganesha holds 5% of the original loan as a guarantee of payment.

### ***Rapid Growth and Ambitious Goals***

Since launching its operations in early 2003, Ganesha has experienced rapid growth. In April 2003 it had 148 borrowers (always referred to as members). By the end of 2003 it had 2,413; at the end of 2004, 3,274; and by the end of the August 2005, nearly 9,000 members. This explosive growth pales in comparison to the organization's plans. The Ganesha strategic business plan calls for reaching 30,000 members by the end of 2007, 100,000 members in 5 years, and a million members within 10 years (Ganesha 2005b). Ganesha believes these ambitious goals can be achieved due to the large population living in absolute poverty in Indonesia (Dhanani and Islam, 2002).

Ganesha's financial success and productivity indicate that it has moved quickly towards sustainability. Ganesha had revenues exceed expenses for the first quarter in June 2004, less than 18 months after its start up. Revenues have continued to exceed expenses for the rest of 2004, by 2% to 8%, indicating that the Ganesha model is very sustainable. In the first quarter of 2005, revenues fell below expenses due to the costs of launching a second branch and opening a third (Ganesha, 2005).

Perhaps a better indicator of success is the exceptionally high repayment rate Ganesha has achieved. In the first quarter of 2005, no loans were in arrears of more than four weeks. The highest percent of the total loan portfolio ever at risk (in arrears over 4 weeks) in any one quarter was 0.03%. In addition, after completing repayment of one loan, the vast majority of borrowers continue on to a larger second loan. Annually 83% of borrowers who complete payment move on to another loan. While this performance is good, it does not meet the expectations of the founders who want to see all members continue in the program. Anecdotal reports from the field suggest one reason that members do not continue is that they want a break from the pressure of repaying and may rejoin later.

Ganesha's long-term goals are ambitious but not unrealistic. Ganesha began with \$200,000 of capital provided by the founders. It received an infusion of \$470,000 of capital, which is the equivalent of 9,400 first loans, from Hivos, a Dutch foundation. It received a start-up loan of \$40,000 from the Grameen Trust in Bangladesh for the third branch. Other major donors and commercial banks are interested in Ganesha because of its short but remarkable track record and the commitment, energy and talent of its founders.

Ganesha's success is due in large part to the high level of productivity it gets from its field workers. Field workers are front-line employees who recruit and train members, disburse loans and lead the weekly meeting where loans are collected. They are all women and mostly recent secondary school graduates from the local area. A field worker is expected to manage 14-16 Centers (groups of 15-25 women) and thus service 400 members. This number far exceeds the productivity of most other microfinance programs. For example, a worldwide survey found the average number of borrowers per field staff was 142, while the highest performance they found was 275 borrowers per field staff (Micro-Rate, 2005). In addition, Ganesha field officers are expected to form new groups and receive financial incentives for doing so.

## ***Purpose of the Impact Survey***

Ganesha has grown rapidly and has a strong record of repayment and retention of members, but the impact of joining Ganesha on members has not been clearly documented. Anecdotal reports and the fact that over 85% of members return for an additional loan suggest strongly that members experience benefits. To objectively assess if members were benefiting from participation in Ganesha, Ganesha's management engaged a team of volunteers from the School of Business and Management, Bandung Institute of Technology, and Microfinanza of Italy to conduct an impact assessment of the Ganesha program. In this study we measure the impact of joining Ganesha on its members. Specifically, we look at five dimensions to measure Ganesha's impact:

1. Finance: Have members' individual and household income increased and have members moved above the poverty line since joining Ganesha?
2. Housing: Has the condition of members' housing improved since joining Ganesha?
3. Welfare: How good is members' and their families' diet?
4. Empowerment: Do members have control over economic decision making in their household? How was the loan used?
5. Satisfaction with program: Are members satisfied with Ganesha's services?

## **Method**

### ***Overview***

To assess the impact of participating in Ganesha, we compared administrative data collected when the women joined Ganesha with survey data collected from a random sample of 182 members who had been in the program from one month to a few months over two years to measure changes in their well-being. The survey questionnaire was designed specifically for this study as described below.

Because we were not able to assemble a control group and faced a variety of time and resource constraints, we decided to use a *quasi-experimental design* based on a *pre-post analysis* (measuring variables before and after joining Ganesha) and a *longitudinal analysis* where we compared the experience of women who had been in the program for different lengths of time, to see if women who had been in the program longer had outcomes different from those who were in the program for a shorter period of time. The longitudinal analysis gives us an understanding of whether additional lending and persistence in the program leads to further improvements in the well-being of the members.

### ***Data***

#### **Sample**

Data were collected in March and April 2005 when Ganesha had a single branch in Teluk Naga sub-district in Rural Tangerang District, and had a total of 3,813 members. The program had been running for 25 months. The loan repayment period is 12 months. In selecting the sample we had multiple goals. First, we wanted to select a sample that was representative of all Ganesha members. Second, we wanted a sample that represented each of the three loan groups. To do this we divided the total population of members into the three

loan groups according to the number of loans they had received (1, 2 or 3)<sup>1</sup>. We initially selected at random 60 members from each loan group. At the interview stage, which occurred three weeks after the sampling, some of the members had already received a new loan thus moving to another group. The final sampling is also shown in table 2.

**Table 1: Sample size and estimated population**

<i>Loan Group</i>	<i>Estimated Population</i>	<i>Sample Size</i>	<i>Percent</i>
<b>First Loan</b>	1,629	58	3.6%
<b>Second Loan</b>	1,997	60	3.0%
<b>Third Loan</b>	187	64	34.0%
<b>Total</b>	3,813	182	4.8%

As the table indicates, we over-sampled the Third Loan group, selecting 34 % of third loan members, compared with about 3% for the other two groups. We did this for two reasons. First, we wanted to have a representative sample of each group and wanted to have 60 respondents to insure we could draw valid inferences about subgroups within the loan groups. Second, we particularly wanted to study the experience of the Third Loan group as they had been in the program the longest and we believed best represented the experience that most women would encounter.

In most of the analysis we present the experience of each loan group separately so that the skewed sampling is not an issue. In interpreting the overall results for the survey population, however, it is important to remember that the Third Loan group is over-weighted.

A final caveat on the sampling is that while members are separated into the three loan groups for analysis purposes there are still important differences in how long members were in the program within the groups. For example, in the Loan 1 group some members will have just joined and others may have almost completed a full year and be ready for a second larger loan. So we would expect a range of impact within each loan group as well as between loan groups. The average days in program and the standard deviation of this figure give a sense of the range found in each group.

The table below profiles the sample population with data from the administrative records and provides a snapshot of their status upon entering the program, how long they have been in the program and the cumulative total amount borrowed.

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<sup>1</sup> It is important to note that each group receives a different loan amount: first loan group Rp. 500,000, second group Rp. 1,000,000 and the third group Rp. 1,500,000. Members must move through the stages in order: all members initially receive a loan of up to Rp. 500,000. After they complete that repayment they may receive the second larger loan. Thus loan amount and time in the program move together.

**Table 2: Initial socio-economic conditions by loan group**

	<i>LOAN 1</i>	<i>LOAN 2</i>	<i>LOAN 3</i>
Total population	1,629	1,997	187
Sample size	58	60	64
Average age	32	33	36
Average total income (Rp 000)	443	438	491
Average per capita income (Rp 000)	103	103	97
Average personal income for members with earnings Rp. 1,000	233	239	229
Average housing index	6.20	5.59	6.54
Households below poverty line <sup>2</sup>	90%	80%	83%
Average days in program	196	575	731
(Standard Deviation)	(139)	(138)	(24)
Average cumulative amount borrowed (Rp 000)	500	1,343	2,687
(standard deviation)	(0)	(211)	(204)
Average household size	4.72	4.73	5.50
<u>Schooling</u>			
Illiterate	21%	49%	43%
Below primary	24%	21%	18%
Primary	44%	24%	31%
Junior secondary	11%	6%	8%

Data sources

Data came from three sources: the Ganesha MIS system, which stored descriptive data on the members; the original membership application forms; which included additional data not stored in the MIS system; and the present survey, which consisted of face-to-face interviews using a structured questionnaire shown in Appendix B. The table below shows which variables came from which source. For each sample member we extracted the following data from Ganesha records:

- general information about the members
  - name
  - age
  - marital status
  - income
  - working capital
  - literacy and schooling
- general information about members' households
  - names
  - age
  - personal income, total income and per-capita income
  - literacy and schooling
  - housing index
  - assets
  - livestock

<sup>2</sup> Rupiah 143,455 in 2004, see income section for more information

**Table 3: Data Sources**

	<i>BEFORE</i>		<i>AFTER</i>	<i>Purpose</i>
	<i>MIS</i>	<i>Review Application Forms</i>	<i>Questionnaire</i>	
<b>Financial</b>				
Income	X	X	X	Assess change in income
Assets	X	X	X	Assess change in ownership of assets
Livestock	X	X	X	Assess livestock turnover
Working capital		X	X	Assess change in working capital
Savings			X	Assess change in savings
<b>Housing</b>				
Housing Index quantitative	X	X	X	Understand change in housing condition
Housing qualitative			X	
<b>Well-Being</b>				
Food consumption			X	Assess improvement in food consumption
Literacy and schooling	X	X	X	Evaluate change in the schooling level of children
Health			X	Check for improvement in household health
<b>Empowerment</b>				
Personal income quantitative	X	X	X	Check for changes in members' personal income
Personal income qualitative			X	Double-check quantitative data on personal income
Personal savings			X	Check for changes in members' savings
Decision making			X	Assess women's role in the household
Ownership of the loan	X		X	Assess women's role in the economic activity
<b>Members' satisfaction</b>			X	Evaluation of members' overall satisfaction with the program

### **Questionnaire Design**

The questionnaire used in the follow-up interviews covered seven topics: customer satisfaction, loan purpose/use, household well-being, empowerment, general information about members' households, financial information and housing information. We included in the questionnaire both quantitative and qualitative questions, in order to cover exhaustively the areas researched. We based some of the questions on food consumption on a questionnaire presented in a discussion paper produced by the International Food Policy Research Institute (Lapenu *et al.*, 2001). For questions about loan use and consumption we took inspiration from an impact survey report of the Mercy Corps International program in Bosnia–Herzegovina (Muench, 2000). We involved field staff and managers in designing the

questionnaire as we wanted the questions to be clear, effective, and acceptable from a cultural point of view. When the questionnaire was completed and translated into Indonesian, we ran four pilot interviews in order to better understand whether there existed weaknesses in the general structure and in any of the questions, from either a translation or a comprehension point of view, and we corrected the questionnaire accordingly.

## ***Data Collection, Validation and Analysis***

### Data collection

The interviewers were all Ganesha field officers. We decided to use Ganesha staff as enumerators because members trusted them and were more likely to answer sensitive questions, such as the ones regarding food or family planning. Interviewers attended a one-day training in which the purpose of the questionnaire and of single questions was explained and they were briefed on how to record the answers properly and to handle possible queries from members. The interviews took place in members' houses or workplaces, lasted between 45 minutes and 1 hour and were carried out over two weekends in order not to hamper the daily activity of members and staff. After the first round of interviews, questionnaires were rechecked and some of the answers modified accordingly. Some of the difficulties in collecting earnings data in micro-enterprises are described in text box 1 below.

### Data validation

In order to avoid the possibility of Ganesha staff bias, we validated the questionnaires by having a staff member from the School of Business and Management, *Institut Teknologi Bandung* (ITB), re-interview respondents. Two weeks after the last interview was completed, the ITB staff member visited Teluk Naga to undertake the validation of the questionnaires. He re-interviewed about 5% of the sample (10 members) and checked the results against the ones obtained by Ganesha staff. The outcome of the validation was positive as the answers given to the independent interviewer were substantially the same as the ones obtained by the staff in the initial interview. Enumerators knew from the beginning that a random sample of their respondents would be re-interviewed to validate results.

### Data analysis

Three Ganesha staff entered the data into an Excel file prepared expressly for this purpose. After editing, the data was transferred into the *Statistical Package for Social Sciences* (SPSS) to begin the second stage of the data cleaning process. We checked the data using SPSS and we went back to the members to confirm or modify the records that were not consistent with typical patterns and expectations.

The data analysis had two primary approaches. First, we compared the status of members and their households before and after joining Ganesha to determine whether there had been statistically significant improvements in income, housing quality and food consumption. Next, we compared the experiences of members in loans 1, 2 and 3, to see if there were changes the longer the members were in the program and the more they borrowed. The results of these analyses are presented in the next section.

### **Text Box 1: A Note on Collecting Micro-enterprise Earnings Data**

Collecting earnings data in micro-enterprises is a difficult task that needs to be done carefully, and the analysis of the data collected needs to be done cautiously to get valid results. Members do not keep accounting records, so income data must be self-reported. We first ask the members how much they earned per month. Their first reaction is often: "I do not know, it varies from day to day, it depends on daily sales, it depends on the weather (whether I can go out in the rain, or customers want to come out), it depends on public holidays", and so on. So we then ask them how much they earn per week. This also frequently draws a blank. Finally, we ask them how much they earn per day, how many days they work per week or month, or if they do not know, how many days of rest they take per week. At this stage, another difficulty arises, because they report sales or turnover rather than income. So we also need to make sure they are subtracting from their sales the cost of loan repayment and other business expenses such as the cost of goods sold. So we check again the turnover versus income data. Finally, we deduce their monthly income from this information, and for each income-generating activity they (and their family members who use part of the loan) are involved in.

To be particularly conservative in estimating income, in the statistical analysis we deducted the cost of repayment from the reported monthly income, even though the cost was supposed to already be accounted for. While this likely created an underestimate of the actual income of the group it ensured that we were not overestimating income.

Another set of difficulties arises when the borrowers do not earn a regular income. Livestock purchases of chicken and ducks only yield an income stream after some time when they are ready to produce eggs or chicks, and even this is not predictable. The purchase of a goat only yields an income several months down the line when the goat is sold or produces a kid. There are also households who earn their income on a contract basis, as when a joint husband and wife team agree to harvest a piece of land producing garden vegetables for a fixed price. Their income is generated only when the harvest is collected and the produce sold in the market. Often the price varies enormously from one day to the next depending on the supply conditions of such perishable commodities, and may be very different from the time they entered into the contract. There are also borrowers who produce snacks at home and ask a number of kiosks to sell their produce on their behalf for a fixed fee. Unsold snacks are returned, and they collect their money only once a week. Borrowers who sell kitchen and other house wares or clothes on credit can also only expect their repayments once a week or month.

We validated the income data collected here by correlating change in income with changes in the housing index<sup>3</sup>. We found a strong positive correlation which validates, in our view, the income measures. We also compared the ratio of reported sales to earnings and found reported earnings ranged from about 15% to 25% of sales, which seemed reasonable to us. Finally, the fact that number of members in the first loan group, who were in their first six months of repayment and who reported a decline in income, convinced us the income reported accounted for the cost of loan repayment and was a good representation of real earnings.

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<sup>3</sup> The Pearson correlation between change in personal income and change in the housing index was .21 with a statistical significance of .005, two-tailed test. We considered this a particularly good test because the housing index data were collected directly by enumerators and did not rely on members' self reporting.

## Limitations of the Method

This study faced two main limitations. First, much of the data, particularly on earnings, were collected through self-reporting. Hence, we could not independently verify how much money members were actually earning or spending. Members do not keep written financial records so the data were simply recalled for the recent days or weeks, and then turned into monthly estimates. Data on housing quality, however, were collected through direct observation of the housing, before an after joining Ganesha. The second major limitation is inherent in the quasi-experimental design we employed. In this design we do not have a control group against which we can compare the experience of members and thus estimate what would have happened to members had they not joined Ganesha. Thus we recognize that factors other than joining Ganesha, such as self-selection or other changes in the local economy, may account for the changes we measured in our research.

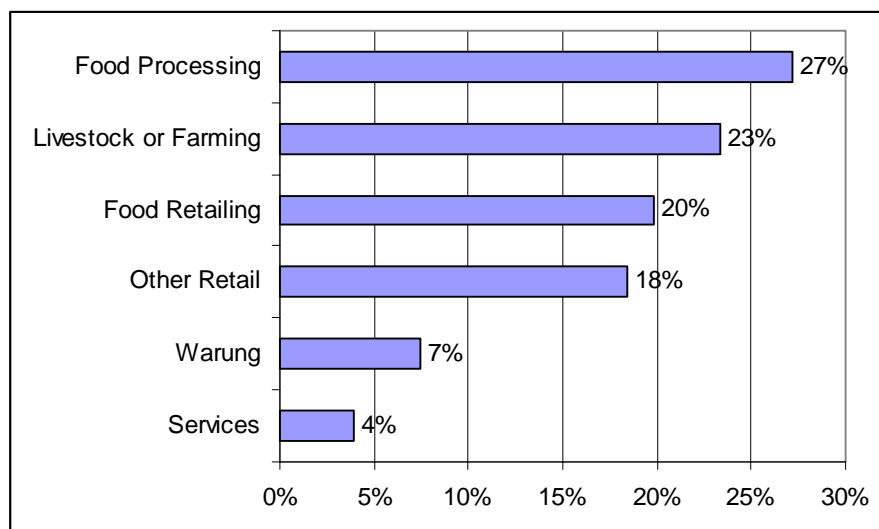
## Results

### Members

All Ganesha members are women. They range in age from 15 to 60, with an average age of 34. Over 90% are married, with 7% widowed, and most are in households with four to five people. About a third of the women are illiterate, and another third had not completed primary education.

The figure below show the types of businesses in which Ganesha's members are engaged. Most members are engaged in more than one activity. Food processing and livestock or farming account for half of all the business activities. As these are rural women living in small villages, this is to be expected. A substantial number of women are engaged in retailing, and only a few in services. It is important to note that about half of the survey respondents reported two or more business activities. So, for example, a member may be running a *warung* (a small store) everyday while also raising chickens or goats for occasional sale. We compared the mix of activities across the three loan groups and found no significant differences.

**Figure 1: Ganesha member business activities**



Ganesha members reported working about 35 hours a week. This is a substantial, and statistically significant, increase over the 30 hours they reported working before joining Ganesha. Thirty percent of members said they worked more than 40 hours a week.

Many Ganesha members do not invest the entire loan amount in their businesses. We found that 54% of members use some of the loan for immediate consumption. Across all three loan groups we found that members report using 17% of the loan funds for immediate consumption. The most common uses of the money are keeping money on hand for emergencies (28% of members), food (18%), education fees (14%), loan repayment (11%), health expenses (10%), household debts (8%) and home improvements (6%).

## ***Financial Impact***

Ganesha sets out to improve members' incomes by lending them the capital they need to increase their productivity and improve their households' well-being. A key measure of Ganesha's success is the degree to which members are able to use the capital effectively to increase their income. To assess the financial impact of joining Ganesha, we looked at members' earnings before and after joining Ganesha. We also examined their household's income and how they actually used the money they borrowed from Ganesha. The focus of the analysis is on member income rather than family or household income, because the loan was made to the member and she was responsible for repayment. In addition household income is affected by many variables such as change in household membership, or change in husband's employment which the program was not designed to influence. We recognize that in some cases other household member's made use of loan funds, so that by focusing on member income we are being conservative in estimating the program participation.

We measured Ganesha's financial impact in several ways. First, we compared individuals' earnings before joining Ganesha with current earnings. Then we compared the change in earnings for members who were using their first loan against those who were using their second loan, and then we compared second time borrowers against third time borrowers. The comparison was to test if additional lending and persistence in the program led to additional earnings. Next, we simply asked members if their personal income had increased since joining Ganesha. Again, we also asked members if their household income increased. Finally, we looked at changes in per capita income within Ganesha households to see if households were able to move out of poverty since joining Ganesha.

### Member Income

As the graph below shows, on average Ganesha members experience substantial increases in individual earning from before they joined Ganesha to the time of the survey. For the entire population of members average earnings increased from Rp. 129,000 before joining to Rp. 321,000 at the time of the survey<sup>4</sup>. We then broke this population into groups based on whether they had received one, two or three loans<sup>5</sup>. Again in every case we found that members earned substantially more after joining Ganesha than they did before. As the graph indicates, the longer members were in the program the more their earnings increased. All the

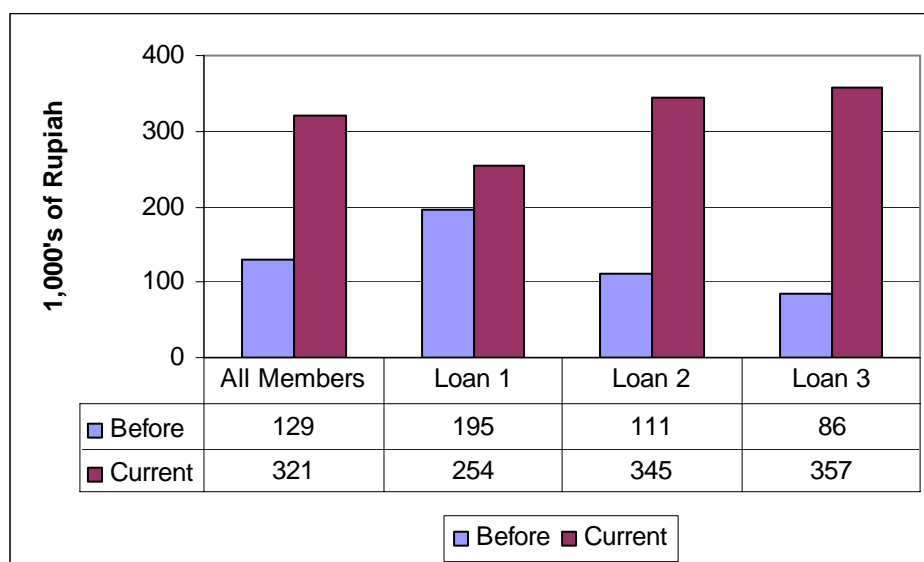
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<sup>4</sup> At the time the survey data were collected, the value of the Rupiah was 9,300 to the US dollar.

<sup>5</sup> First loans are typically Rp. 500,000, second loans Rp. 1,000,000 and third loans Rp 1,500,000.

differences shown in the graph are statistically significant<sup>6</sup>. These figures are supported by the fact that 66% percent of members reported that their incomes had increased since joining Ganesha, while 29% reported they remained the same and only 3% reported they declined.

**Figure 2: Members’ average monthly earnings before joining Ganesha and currently  
By loan number**



To test if members who were in the program longer and borrowed more had greater gains in income, we compared the change in earnings of members in the first loan group with members in the second loan group, and members in the second loan group with members in the third loan group. We were also interested in the range of change of earning found within each group. The following graph shows the median change in earnings, and the range from 25<sup>th</sup> percentile to the 75<sup>th</sup> percentile, or in other words the range in change of earnings for the middle 50% of the population.

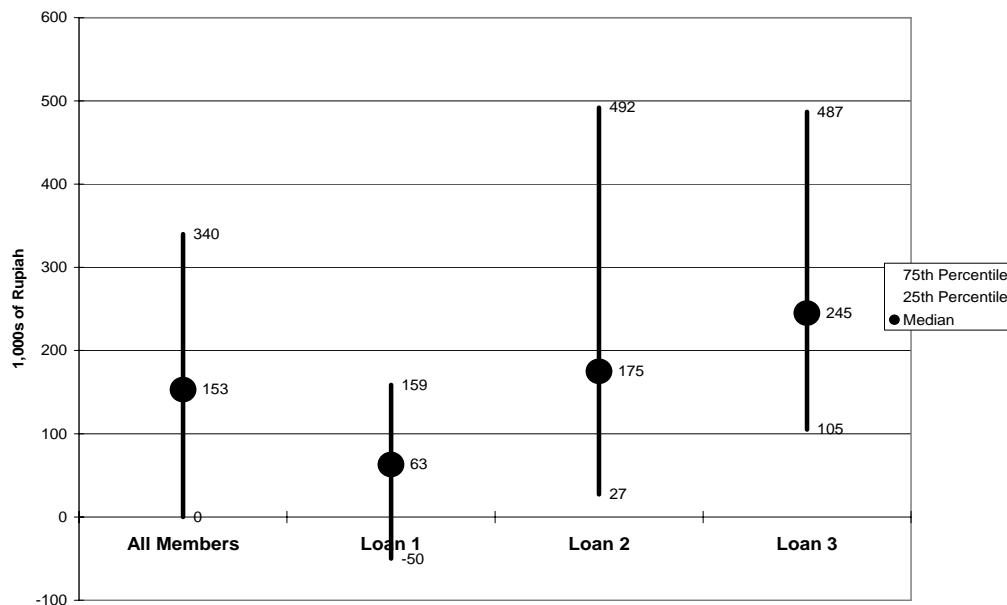
As the graph below shows, for the entire population of borrowers the median change in earnings was Rp. 153,000. Gains grew larger the longer members were in the program. From Rp. 63,000 for first time borrowers who were still repaying the first loan, to Rp. 175,000 for second time borrowers, to Rp. 245,000 for third time borrowers. There is some evidence that first-time borrowers take time to increase their incomes after receiving their loan, as a full 38% of first time borrowers reported a decline in income, which may be attributable to the cost of repayment which begins immediately when the loan is dispersed. This may also be due to the purchase of livestock, and to immediate higher expenditures on feeding and maintaining the livestock, while the income from livestock activities would only be generated after a time lag. The medians show larger increases in earning between Loans 2 and 3 than the comparisons of means in Figure 2. This is because the averages are affected by a small number of extreme changes such as members with dramatic increases in earning or losses of earnings, while the medians are not affected by the outliers. Our interpretation of this is that most members in Loan 3 have had larger earnings increases than most members in Loan two, but a few extreme large gains or losses in either group reduce the differences in the

<sup>6</sup> Differences in earnings were tested using a two-tailed t-test. Probability statistics of 0.05 or less were required before significant differences were reported here, t-test results are in Appendix A.

means shown in Figure 2. It also important to remember that almost all Loan 3 members are at the beginning of the Loan 3 and may not yet be experiencing the benefits of an increased investment, see Table 2.

We also compared the mean change in income of first-time borrowers and second and third-time borrowers. Average monthly income increased from Rp 254,000 to 345,000 or by 36% between borrowers in Loan 1 and Loan 2, and by 3% from Rp 345,000 to 357,000 between loan 2 and loan 3. A t-test revealed that the income increase was significant between first time and second time borrowers. However, it was not a significant between second and third time borrowers. But this analysis is limited by the problem identified earlier, that many members in Loan 3 have just completed year 2, and thus have not had a long period of time to benefit from loan 3. In fact, as Table 2 indicates, the average period in the program for Loan 3 members is just about two full years. To further explore the relationship between time in the program and earnings increase, we regressed the number of days members were in the program on change in personal earning, in this case we found a strong positive relationship (see Appendix A table A3), indicating that the longer members persisted in the program the larger their income increase.

**Figure 3: Change in Personal Income, Descriptive Statistics by Loan Number**



Finally, we broke down average monthly income by type of business activity. As the table below indicates some business activities generated much more income than others. For example, food peddling and *warungs* (small shops) each generated over Rp. 500,000 in monthly income compared to less than Rp. 200,000 for livestock and farming.

**Table 4: Monthly Income by Loan Activity**

Loan Activity	Average monthly income	Median monthly income	Average monthly sales	Total number
Warung	573	560	4,049	21
Food retail, peddling	626	560	4,672	56
Food processing	403	375	1,970	77
Livestock & farming	186	120	651	66
Other retail	376	265	1,717	52
Services	285	250	995	11

Change in Per Capita Income

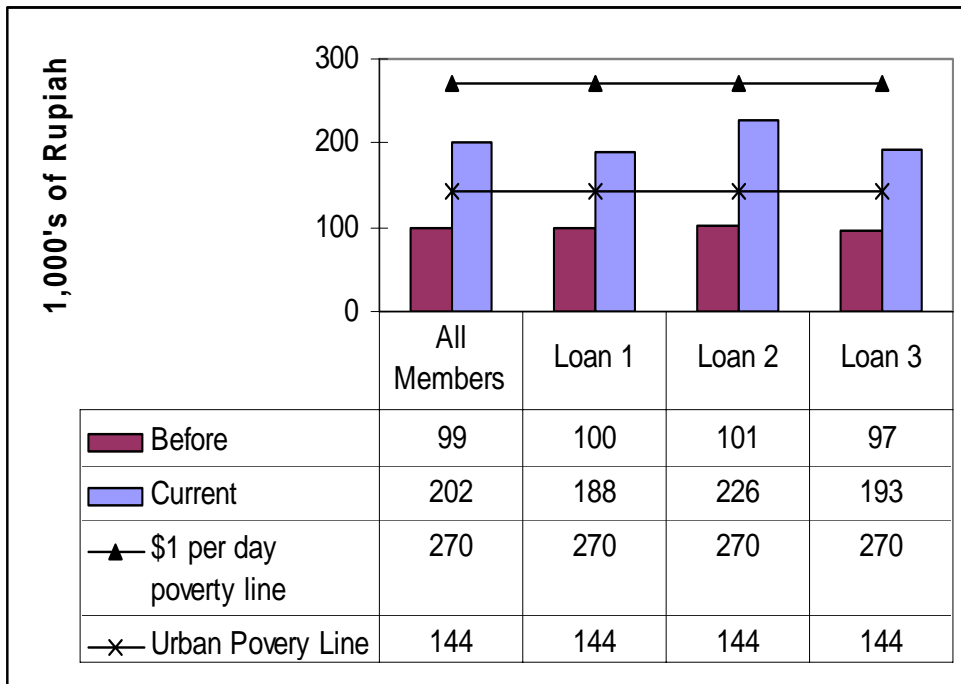
We also collected data on total household income before joining Ganesha and at the time of the survey. By dividing this figure by the number of household members, we were able to calculate the per capita income for the household. We know that in some cases husbands and other relatives use some of the loan money for their own business enterprises and thus Ganesha lending has an impact on household income beyond changes in the personal income of the member. To attempt to examine the impact of joining Ganesha on household well-being and account for changes in household structure (adding or dropping household members), we compared before Ganesha and current per capita income. To be as conservative as possible in estimating the impact of Ganesha, we reduced the total household income by the cost of repaying the loan, before calculating the after joining Ganesha per capita income. While we believe many members reported their net income, we cannot be sure that every household deducted the cost of repayment from their household earning.

As part of the analysis, we benchmarked this data against the “Urban Poverty Line” for Indonesia, which was Rp. 130,499 when Ganesha started in 2002, and Rp. 143,455 in 2004, the most recent data available from the Central Bureau of Statistics (Maksum, 2005:4). A second benchmark is the US \$1 a day per person poverty line, which would be Rp. 279,000<sup>7</sup> when the post-Ganesha household income data were collected. We chose the Indonesian urban poverty line, which is substantially higher than the rural poverty, because the Tangerang region, while rural in character, is adjacent to Jakarta and hence we believe prices to be higher. We also wanted to be conservative in estimating Ganesha’s impact so as not to exaggerate the program’s benefits. The results show dramatic increases in average per capita income for the entire population, more than doubling from Rp 101,000 to Rp 202,000. Statistical tests show that these changes are significant for the overall population and for each group of borrowers (see Appendix A for statistical tests). In essence the average Ganesha household moved from below the Indonesian Urban poverty line to above it after joining Ganesha, but on average they remain substantially below the \$1 a day poverty line, unadjusted for purchasing power parity (PPP) as usually done by the World Bank.

Loan 3 members have a lower per capita income because they have large households. If you refer back to Table 2 you will see that the average Loan 2 household size is 4.7, while the average Loan 3 household size is 5.5, about 16% larger. This is a statistically significant difference. Indicating the increase in household income must be spread over more household members leading, on average, to smaller per capita income increases.

<sup>7</sup> The monthly value was calculated by multiplying \$1 x 30 days x Rp.9,300.

**Figure 4: Average monthly per capita income from before Ganesha and currently, with 2004 urban poverty line and \$1 a day standard (adjusted for cost of loan repayment)<sup>8</sup>**



Again these results are supported by the qualitative data. Over 70% of members report that household income increased or increased significantly, while 24% report it remained the same and only 2% report a decrease. As we did with personal income we also correlated change in per-capita income with change in the housing index and again found a tight correlation.<sup>9</sup>

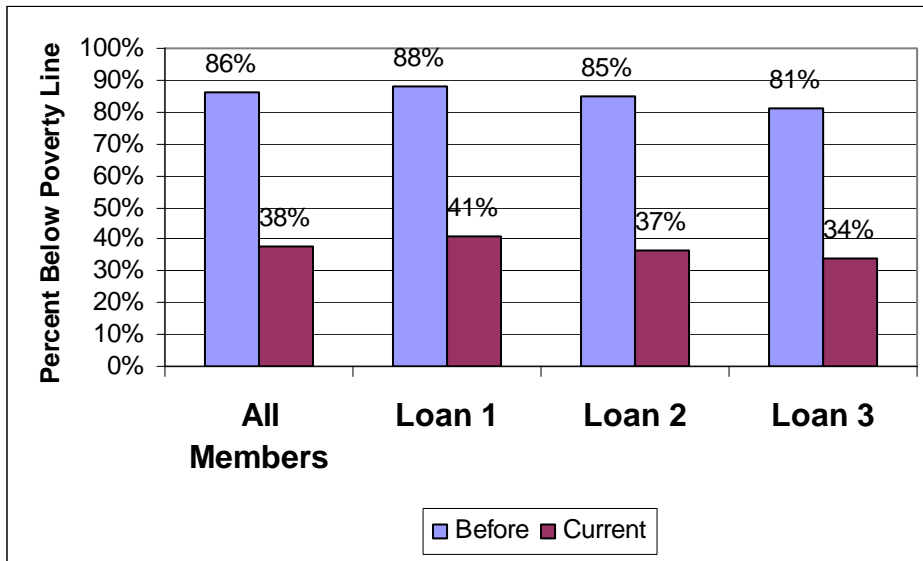
Another way to look at income change in relation to the poverty line is to look at the percent of households living below the poverty line before they joined Ganesha and compare it to the percent of households below the poverty line currently<sup>10</sup>. The following figure shows that 86% of the Ganesha households lived below the poverty line when they joined Ganesha, and currently only 38% live below the poverty line, indicating that since joining, 48% of households have moved out of poverty. Looking across the three loan groups we see a modest but, steady decline in those still in poverty from 41% for members in Loan 1, to 37% in Loan 2, to 24% in Loan 3. Again it is important to remember when interpreting this data that Loan 3 households are significantly larger, meaning that it is more difficult for them to increase their per capita income because gains must be spread across more household members (see Table 2). In addition almost all Loan 3 members are at the beginning of their loans and have not yet had time to experience the benefits of the larger loans.

<sup>8</sup> Slight differences from data in Figure 2 in 'before' income are due to small number of cases missing data for this calculation in Loan groups 1 and 2

<sup>9</sup> The Pearson correlation between the change in per capital income and the housing index was .259 which is significant at the .000 level, two tailed test.

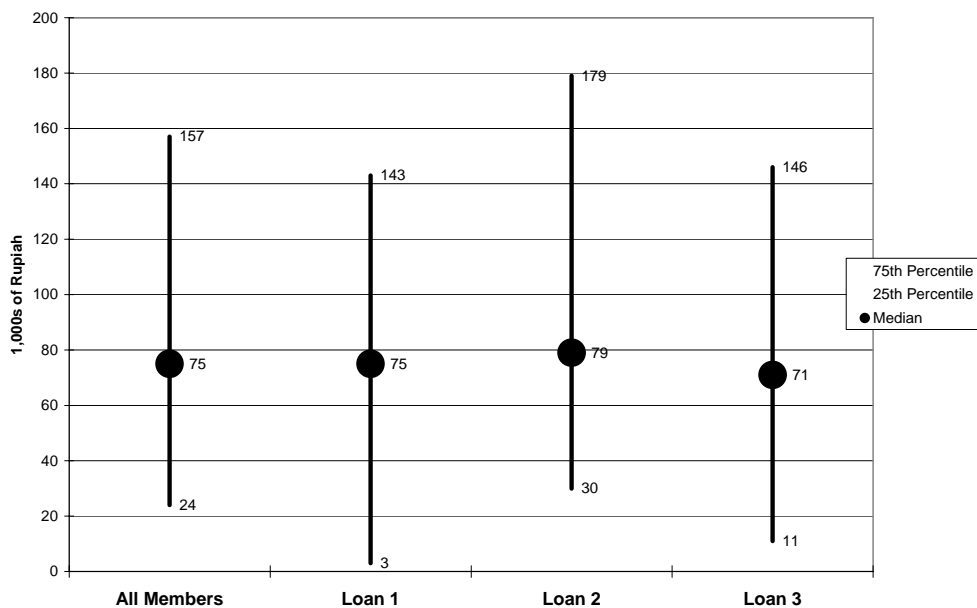
<sup>10</sup> In this analysis we used the 2002 national urban poverty line for the before measure and the 2004 urban poverty line for the after measure, since inflation would raise the poverty line for members in the loan 1 and 2 groups this is a conservative approach which minimizes the number in poverty before.

**Figure 5: Percent of households with per capita income below the Indonesian urban poverty line before joining Ganesha and currently (adjusted for cost of loan repayment)**



To gain a better understanding of this measure we examined the distribution of the change in per capita income across the loan groups. This analysis confirms the earlier finding that the biggest gains occur during the first loan and then are sustained. As the figure below shows, the median change in per capita income for all members' households was an increase of Rp. 75,000 per month per household member. Increases were slightly larger for members in the Loan 2 and 3 groups. The graph also shows the range from the 25<sup>th</sup> to the 75<sup>th</sup> percentile, the middle 50% of the population, in change in per capita income for each group.

**Figure 6: Change in per capita income descriptive statistics by loan number (adjusted for cost of loan repayment)**



Overall these data indicate the Ganesha members experience a substantial and statistically significant improvement in their financial well being. It appears that after joining Ganesha almost half of all households are able to move out of poverty. This is a significant accomplishment. Progress appears to be greatest in the first year of membership, but steady incremental improvements in earning seems to be the case, based on comparisons of the three loan cohorts.

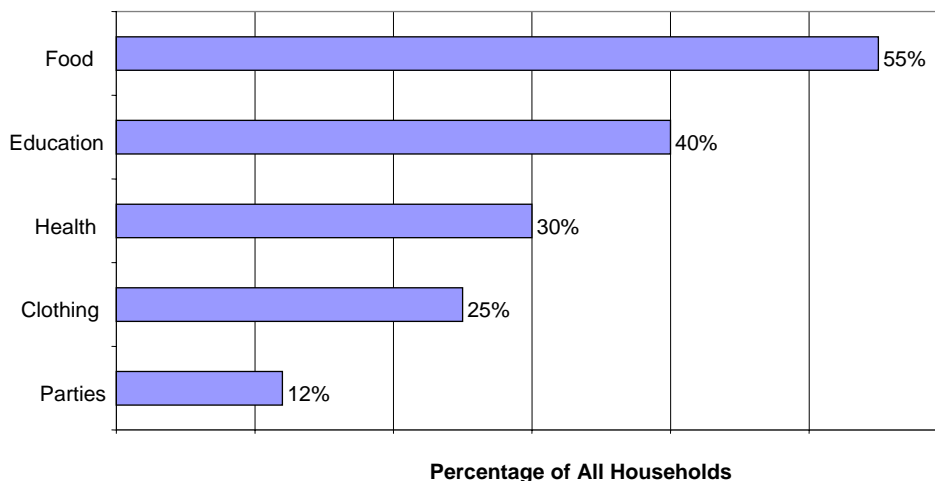
The fact that the median change in per capita income is similar for Loan Groups 1 and 2 and that Loan Group 3 has slightly lower median change, is due largely to household size rather than a lack of increase in earnings. Households in Loan Group 3, as we have said before, are significantly larger than households in the other two groups. Thus, increases in income are spread across a larger number of household members reducing the per-capita increase. We also note again, that Loan 3 members are at the beginning of their loan and have not yet experienced the full benefit of the increased capital. Finally, the data in Figure 6 show that there are a relatively wide range of per capita income changes, with about a quarter of the households experiencing large per-capita gains of over Rp. 157,000 per capita per month, and quarter having per-capita changes of less than Rp. 24,000.

### How Households Used Increased Earnings

The median amount of earning members report contributing to their household is Rp. 300,000, or 81% of all earnings. One of the assumptions of the Grameen model is that women will invest their earnings to benefit the family, and that seems to be the case among Ganesha members. We assume the rest of the money is reinvested in the business or used for personal consumption.

We asked members how they spent their increased income. As the graph below shows, 55% of members reported they increased the amount they spent on food. Some 40% of members said they spent more on education, possibly indicating that more children stayed in school. Health and clothing also saw some substantial increases in spending, and finally 12% members said they spent more on parties. This indicates the Ganesha members, as previous research suggests, invest their increased earnings in improving the well-being of their families.

**Figure 7: Use of increased earning by Ganesha members**



We compared how the increased income was used across the three loan groups. The only significant difference we found was that members in Loan 3 were more likely to report spending on parties, with 20% of all Loan 3 members compared to 10% in Loan 2 and 5% in Loan 1.

## ***Housing Quality***

### Introduction

The ***Housing Index*** is a poverty targeting tool developed by CASHPOR and adapted afterwards with some adjustments to local conditions by Amanah Ikhtiar Malaysia (AIM), and several other Grameen Bank Replicators. This index is an effective tool for poverty measurement. It is low-cost and quick, as the different features of a house can be visually appraised with a fair level of accuracy without the need for interviewing the owners. Moreover, as reported by the Consultative Group Against Poverty (CGAP 2000), “Since dwellings often represent the largest investment of a household and since in many regions there are specific variations in housing patterns ... reflecting differences in economic levels, housing can be used as an excellent proxy for ranking households”. For example, houses with dirt floors indicate poverty while more expensive tile floors do not.

There are few studies which analyze the correlation between housing index and poverty level. Nevertheless, internal evaluations carried out by CHASPOR in East and Southeast Asia show a very good correlation between housing index and level of poverty. For example, a CAHSPOR workshop undertaken in Yixian County, Hebei Province in China, found that for all but one of the 60 houses in the program, the test with per capita income measures confirmed the poverty rating predicted by the housing index (Gibbons, 1998). Although the housing index is an efficient tool for poverty targeting it has several limitations which have to be considered carefully. First of all, as housing conditions differ in a significant way across countries, and often within the same country, there exists the need to weight and modify the housing index accordingly. This affects the reliability of comparisons between countries based on the housing index (Zeller, 2004:27). Another reported disadvantage is the specific focus of the housing index on just a single dimension of poverty without taking into account other dimensions such as health, nutrition, social vulnerability, and so on (Zeller, 2004:27). Finally, although the housing index is considered a very good indicator of economic levels in South and South East Asia, it seems that the correlation between income and house structure is not as strong in parts of Africa and Latin America (CGAP, 2000:2).

### Ganesha Housing Index (GHI)

Ganesha has adopted an adjusted version of CASHPOR Housing Index (CHI) to assess the level of poverty of potential members. The Ganesha housing index, together with monthly total and per-capita income and assets of the household, constitute the main criteria for eligibility in the program. In Ganesha, the process of identifying the poorest households begins with the field staff completing the housing index form for the houses of the women who express interest in joining the program. Through visual inspection and using the form presented below, the staff allocate points for each main component of the house, namely its size, structural condition, building materials used for walls, floor and roofing, utility supply and ownership of vehicles.

**Table 5: Ganesha housing index**

<i>Item</i>	<i>Type or Condition and Points</i>
Size of House	Large (3) Average (1) Small (0)
House Condition	Good (3) Average (1) Damaged (0)
Type of Roof	Asbestos/Aluminium sheet/special tile (2) normal tile (1) Grass/Hay (0)
Type of wall	Brick (2) Partly brick (1) Wood/bamboo/Mat (0)
Type of floor	Floor tile (3) Partly floor tile (2) cement (1) earthen (0)
Electricity	Own meter (2) Connected to another house (1) none (0)
Water source	Piped water (2) Protected well (1) Unprotected/open well (0)
Vehicle	Motor vehicle (6) New motorcycle (5) Old motorcycle (2) Bicycle/tricycle(0)
<b>Housing Index</b>	Total of all points above

Applicants whose houses score above the cut-off point of 10 (excluding old motorcycle for *ojek* transport business) are not considered. The households which score between 8 and 10 are referred for the final decision to the branch or district manager. Households living in a house which scores less than 8 pass directly to the second stage of the assessment, which focuses on their income and assets before selecting them to enter the program. Before disbursing the loan, the branch manager double-checks the results of the poverty assessment with the members to avoid leakages of program services to the non-poor.

#### Reasons for using this measure in the analysis

As mentioned above, housing index is considered a good proxy for the poverty level of households, especially in the case of South and Southeast Asia. Measuring and analyzing the change in the housing index for the dwellings of Ganesha members should provide us with valuable information about the impact of the program on the well-being of members' households. Positive changes (increases) in the housing index will indicate that members' households are less poor and thus that participating in the Ganesha program has a positive impact on their well-being. Improvement in their houses could also mean that members have spare money and thus their income and/or their capacity of saving have increased.

To assess the impact of joining Ganesha on members' housing, we compared members' housing index score before joining with their current score for our sample population. We then examined changes in the housing index for the whole sample population, and separately for sample members who were using their first, second and third loan. This analysis shows whether additional lending and persistence in the program led to further improvement in the houses of the members. We also added a qualitative component in the analysis by asking members whether they had improved their houses in any way since they joined Ganesha and if they did, to specify these improvements.

#### Housing Index Analysis

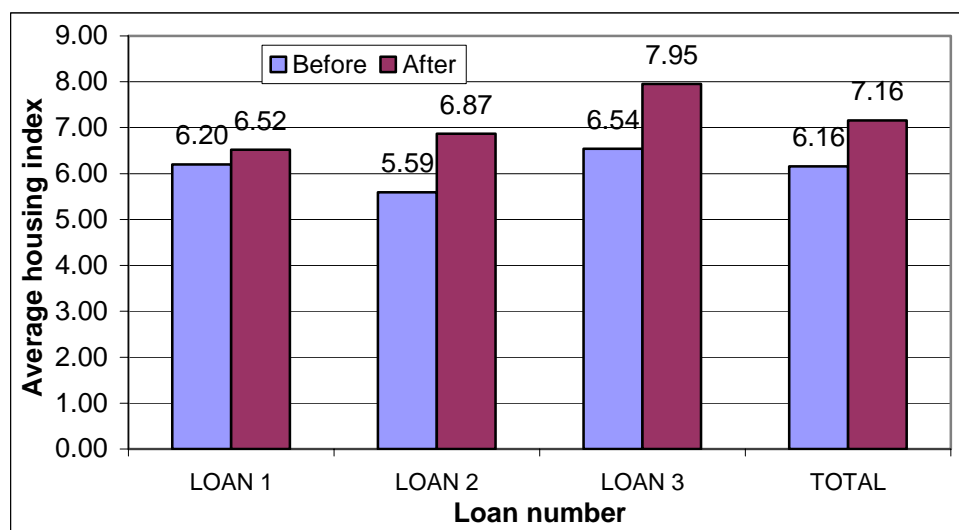
In order to properly analyze the data on housing index, we asked the members whether they moved to another house since they had joined Ganesha. We found out that 15 members in the sample had moved and therefore, for their houses, the change in the housing index was not reliable. We eliminated these households from the analysis and thus reduced the overall population under analysis from 182 to 166 members.

The figure below shows that on average members have experienced a significant improvement in their housing index. For the overall population the average housing index increased by 16% increase from 6.16 to 7.16. We then analyzed the three loan groups and found similar results. For members on their first loan the average improvement of the housing index is in fact only 5.3 per cent, from 6.20 before joining Ganesha to the current 6.52. The members on their second loan have improved their dwellings more substantially, as the average housing index increases from 5.59 to 6.87 (21%). A similar result comes out when considering the group of members in their third loan period, whose housing index increased from 6.54 to 7.95, an important 22%. All these positive changes are statistically significant (see Appendix A for t-test results for this analysis).

As this first analysis shows clearly, members begin to improve their houses substantially when they reach their second loan. This could be due to the fact that they need at least one year to accumulate enough savings to spend money on their homes.

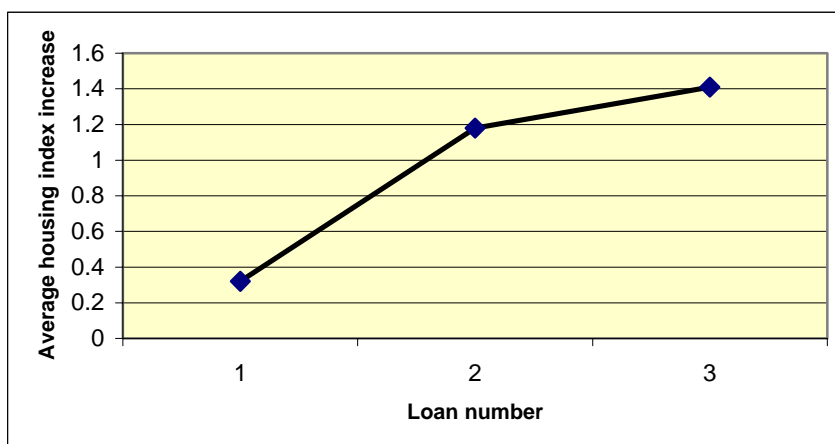
To further investigate these findings and to understand whether a longer period in the program and a larger amount borrowed corresponded to a greater increase in the housing index, we compared the change in the housing index of the houses of members in the first loan with members in the second loan group, and members in the second with members in the third loan group.

**Figure 8: Average housing index per loan group**



As shown by the table and the figure below, the average change in the housing index is significantly higher for members in their second loan than those in their first loan (respectively 1.18 and 0.32). A similar result, with a large and significant difference, can be noted comparing the average change in housing index of the members in the first with members in the third loan (0.32 and 1.41). Although an increase in the average change can be noted (1.18 and 1.41), the difference between second and third time borrowers is not statistically significant.

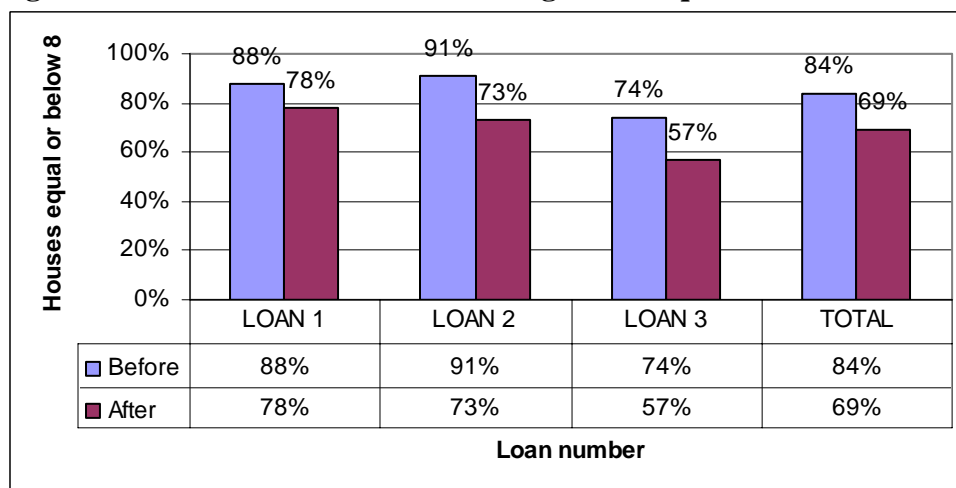
**Figure 9: Average Increase per Loan Group**



These figures confirm the previous analysis. Members seem to mostly improve their houses after borrowing money from Ganesha for the second time and to moderate the expenditure on their dwellings when they get to the third loan. This pattern of behavior follows the one already noted for the personal income of the members. Ganesha clients earn more after entering in the second loan period but their income does not increase much when they borrow money for the third time. It is important to note that the change in housing index for Loan 2 is not statistically larger than the change for Loan 1, but the change for Loan 3 is significantly larger than the change for Loan 1 (see Appendix A for statistical tests).

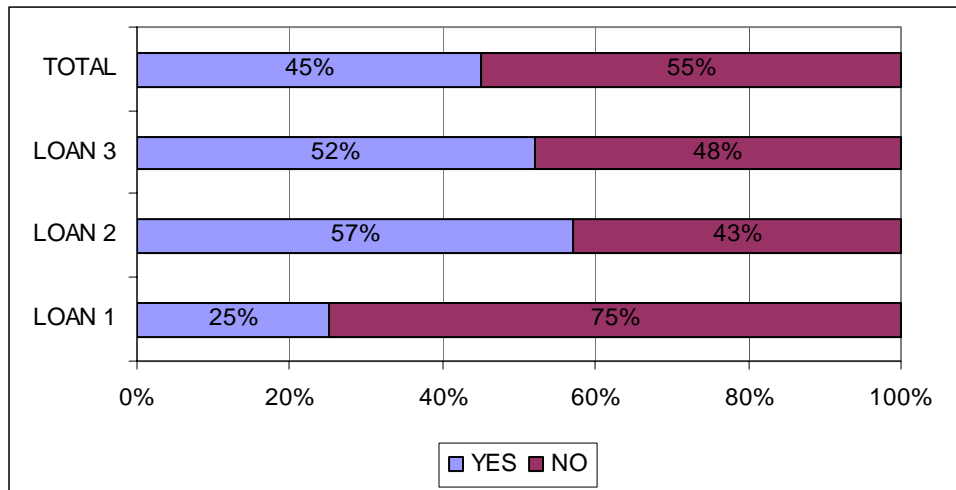
Another approach to the analysis of the housing index data is to consider the cut-off point for poverty defined by Ganesha. The households living in a house with a housing index score of 8 or less are considered by Ganesha to be very poor. We therefore checked how many houses had an increase in the housing index which moved the households above the poverty line as defined by Ganesha. As the graph below indicates, we found out that for the overall population, the number of very poor houses fell from 84% to 69%. The results for the loan groups mirror the overall population. As already noted, the decline for the first loan group is small (10%) and more households in the second and the third loan groups graduated above the poverty line defined by the housing index (respectively 18% and 15%).

**Figure 10: Share of Houses with Housing Index Equal or Below 8**



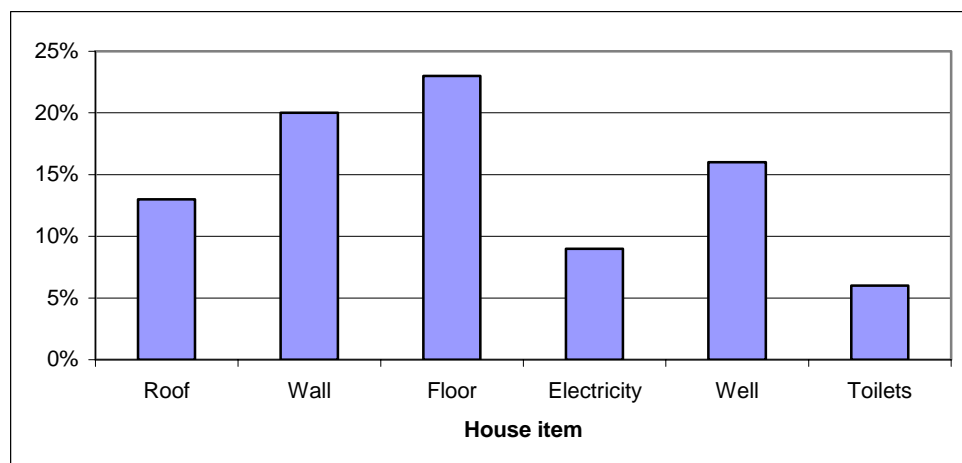
The positive impact on house condition of being in the Ganesha program is supported by the qualitative data collected. Some 45% of members reported that they had improved their houses in a significant way. These data may indicate that members made improvements that were often not captured by the housing index. The pattern of behavior is the one already noted before, with only 25% of members in their first loan reporting they spent money in improving their houses and more than 50% of the population in the second and third loan reporting a substantial improvement.

**Figure 11: Members Reporting Significant Improvement in their Houses**



Most Ganesha members spent money to improve the structural parts their homes. As the graph below shows, about 20% of the people improved the floor or the wall of their houses. A slightly smaller number of members reported an improvement of the roof or the well. Less than 10% of the population interviewed stated they spent some money on electricity or toilets. This could be due to the fact that using electricity in rural areas and building toilets in houses, which usually do not include latrines of any sort, can be very costly.

**Figure 12: Distribution of expenditure on house items**



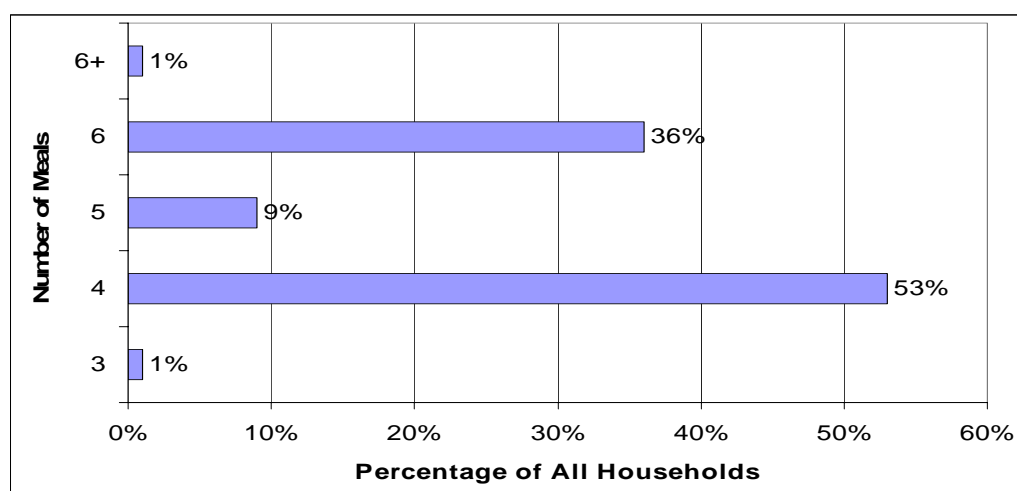
## Health and Welfare Impact

The impact survey examined health and welfare impact in several ways. We asked members about the adequacy of food consumption, the use of birth control and access to medical services. We compared the responses of members in loan groups 1, 2 and 3 to see if the situation was better for members who had been in the program longer.

### Food Consumption

We asked members how many meals their families had eaten in the last two days. As the chart indicates, 53% of the members reported that they had eaten four times in two days and 36% reported six times. Overall the average number of meals eaten over two days increased from 4.6 for members in the Loan 1 group to 5.0 for members in the Loan 3 group. This represents a statistically significant increase in the number of meals consumed.

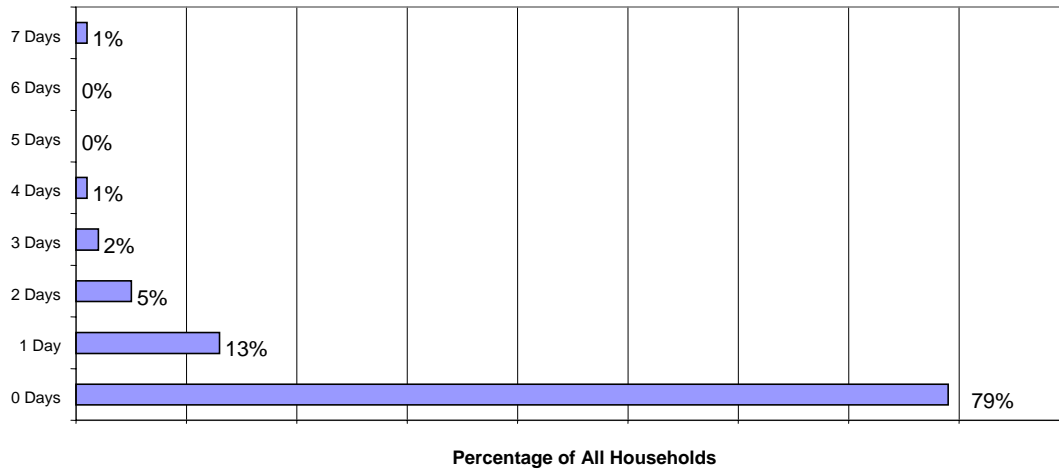
**Figure 13: Number of meals eaten in the last two days**



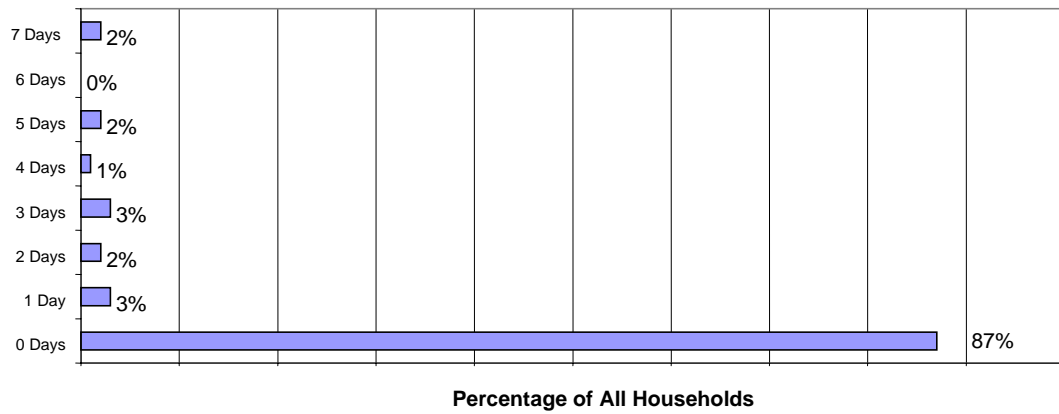
We also asked members how many days in the last seven days they only ate rice, noodles and vegetables. Over a fifth of the members reported that there was at least one day when they only ate rice, noodles or vegetables, and did not have any protein. When we compared members from the three loan groups we observed a slight decline in the number of days that members only ate rice, noodles or vegetables, but it was not a statistically significant change.

We asked members how many days in the last thirty days they had not had enough to eat. As the figure below shows, 13% members reported that they had at least one day when they did not have enough to eat. When we compared the three loan groups on this measure, we found that the number of days when members reported they did not have enough to eat declined from Loan 1 to Loan 3 but the decline was not statistically significant. We also asked members how many months in the last 12 months they had at least one day without enough to eat. Over a quarter of the respondents reported there was at least one month when they had at least one day without enough to eat. Again, looking across the three groups we found no significant trend in this measure.

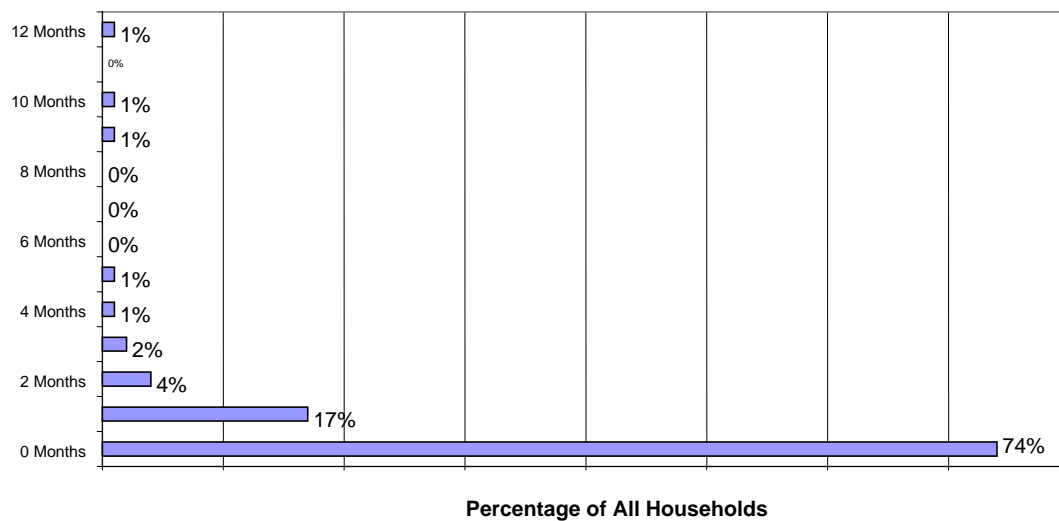
**Figure 14: Number of days in last seven days households ate only rice, noodles or vegetables**



**Figure 15: Number of days in the last 30 days households did not have enough to eat**



**Figure 16: Number of months in the last 12 months households had at least one day without enough to eat**



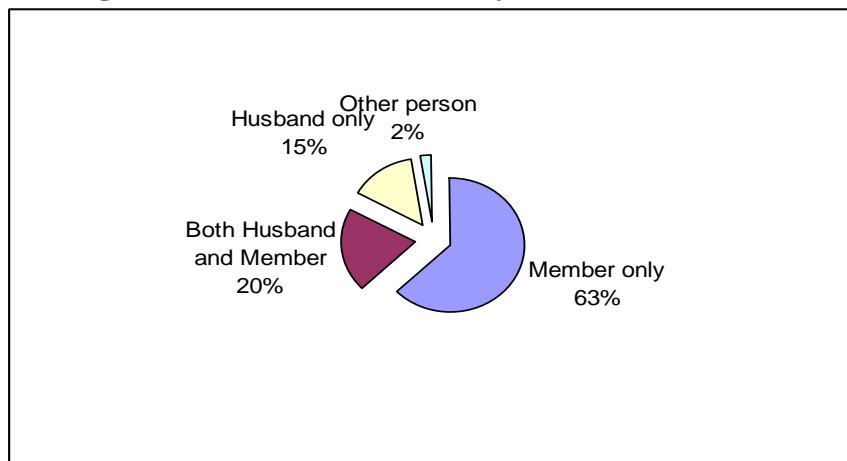
## Birth Control

We were interested in whether or not members would increase their use of birth control the longer they were in the program. Our results show that overall, 56% of the women reported using birth control, but we found no significant differences between the three loan groups.

## **Empowerment**

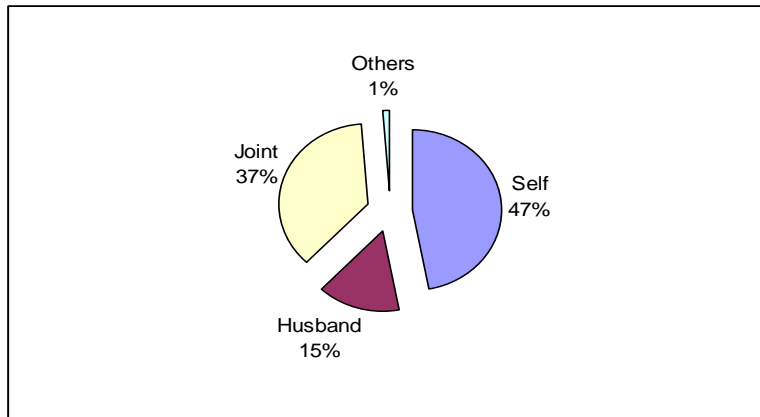
A goal of the Grameen model is to empower women by lending directly to them and empowering them to make their own economic decisions. Our first step in evaluating Ganesha's effect on empowerment was to look at who participated in the Ganesha program. Our sample group reported 283 different business activities were funded with the Ganesha loan. For each activity we asked who was conducting the business, to see to what degree members passed the loan money on to others in their household. We found that 63% of all business activities were conducted by the women alone, an additional 20% were conducted by the member and her husband together, and only 15% were conducted by the husband alone. It appears from our field work that the primary business activity funded by the loan was usually conducted by the women alone, while husbands' activities were usually secondary.

**Figure 17: Who used the money from the Ganesha loan**



To examine the empowerment question further we asked the members who decided how to spend the money they earned. As the figure below shows, 47% of members said they decided how to spend the money alone, an additional 37% said they decided jointly with their husband, while only 15% said that the husband decided.

**Figure 18: Who decides how to spend money earned in business**



We do not have the data to evaluate how financial decisions were made in households before women joined Ganesha. We only have the data on what is occurred at the time of the survey. These data, combined with the reports on how earnings are spent, indicate to us that the bulk of Ganesha’s loans are used directly by the members, while some significant proportion of the loans are used jointly with husbands or by the husbands alone, but the precise percentage is not clear from our data. It also appears that in most households women play either a dominant or equal role in deciding how earnings generated by their businesses are used.

### **Customer Satisfaction**

Overall members were satisfied with the services they received from Ganesha. Over 90% said they wanted to borrow from Ganesha again. The primary reasons for wanting to borrow are shown in the table below. As the table indicates, the primary goals for more borrowing were: (i) expanding an existing business, (ii) opening a new business, and (iii) expanding a business with their husband.

**Table 6: Members’ reasons for future borrowing**

Reason to borrow	Percent of Respondents
Expand my current business	61%
Open a new business	17%
Expand business with husband	16%
Expand husbands existing business	3%
Open new business with husband	3%

Only 9% of members reported they had trouble repaying their loans. Of these, the primary reasons for difficulty repaying were that the loan activity was not profitable (50%), that members of the family became sick (25%), or that members used the loan for food and other expenses and then had trouble paying it back (17%).

Eighty-seven percent of members were satisfied with the loan repayment period, which is one year. Of the 13% of members who wanted a different period, 64% wanted a faster repayment period of 6 months, probably because they wanted to move on to a larger loan faster.

## Conclusions

Overall we find that Ganesha is an effective program which increases members' earnings and leads to improved welfare for members' families, including improved housing and significant reduction in poverty. Most members report high satisfaction with the program and plan to remain in the program and expand their businesses by borrowing more from Ganesha. The women play a leading role in using the loan and deciding how additional income is spent in the household. There are probably other benefits to participating in Ganesha, in terms of access to health care, improved diet and education but we were not able to completely capture those benefits in our study.

At the beginning of this report we posed a series of evaluation questions about Ganesha's impact on its members. Below we offer our conclusions about each question based on the results our evaluation.

### **1. Finance: Have members' individual and household income increased, and have members moved above the poverty line since joining Ganesha?**

Our results indicate that Ganesha's members' financial status has improved dramatically since joining Ganesha. On average, members have seen their monthly income rise by an average of Rp. 153,000. A full 38% percent of Ganesha members have had their household's per capita income rise above the official urban poverty line for Indonesia. The fact that the members who remain in the program and get continuing and larger loans have larger increases in earnings shows that the gains are sustainable if subsequent loans are provided. Regression analysis found a strong and significant relationship between time in the program and earnings increases. These are remarkable results. They compare very favorably with the results found in a World Bank study of microfinance programs which found that in the programs they studied in Asia it typically took five years for a micro-finance program to raise a household above the poverty line (Khandler & Chowdury, 1996). It is important to note that while many Ganesha households rise above the Indonesian urban poverty line, most remain poor by any reasonable measure, as most households do not meet the higher \$1 a day poverty standard, commonly used internationally (unadjusted for purchasing power parity here however).

Ganesha members do have a wide range of experiences and some members get off to a slow start. While the average member has substantial gains in income, the range of gains is wide. Initial analysis suggests the business that women choose may greatly affect their income gains. We also found that women who have only been in the program a short time often experience a decline in income, as they have not yet reaped the rewards of investing the Ganesha loan but must begin repayments immediately. They may have invested in livestock rearing activities with a longer gestation period. This slow start may also be related to the phenomenon that about half of all members use some of the loan (about 17% on average) for immediate consumption when the loan is disbursed, reducing the funds available for business investment.

We also noted that the Ganesha loan led to a significant increase in hours worked. These results fit with the widely held principle that the poor would work more if they had more capital to put to use. We found that the average member increased the hours worked from an average of 30 hours a week before receiving a loan to 35 hours after the loan.

## **2. Housing: Has the condition of members' housing improved since joining Ganesha?**

Ganesha members appear to invest a substantial amount of their increased earning in improving their families housing. Using the Ganesha housing index we found that the average member improved their housing rating a full point. The most common improvements were in the quality of the floors, walls and roofs. Wells were also commonly improved. All these changes should lead to improved health and comfort for family members. We also found that the longer members were in the program the more their houses improved, again suggesting there are long term benefits for remaining in the program.

## **3. Health and Welfare: How good is members' and their families' diet?**

Data in these areas are much less clear. Members report that they spent their increased earning first on food, next on education and thirdly on health. We looked to see if members who were in the program longer consumed more or better food than those earlier in the program, but found few significant differences. Similarly the use of birth control did not increase the longer they were in the program. While it seems clear that the women are spending their increased earning to improve the well-being of their families, we were not able to clearly measure the benefits of this expenditure. We hope further analysis of the school enrollment data of children will help us gain insights into these benefits.

## **4. Empowerment: Do members have control over economic decision making in their household? Who actually used the loan?**

Since we lack clear data on the members' economic role in the household before joining Ganesha, it is difficult to draw conclusions about changes that resulted from participating in Ganesha. We do know that almost two-thirds of the women reported that they alone used the loan, an additional 20% report that they "shared" the loan with their husbands and 15% report their husbands used the full loan. Similarly, about half the women said they made the business decisions on their own, while 37% said they made them jointly with their husband, and again 15% said the husbands made the decisions.

In our view, given the traditional character of the villages in which Ganesha works and the low level of education of many members, these data show a high level of empowerment. It is true that the intention of the program was to deal exclusively with the women. But given the fact that many enterprises are in fact household enterprises, it is reasonable to expect some participation by the husbands.

The policy question for Ganesha is should it allow formal participation of husbands in the program, and if so how should it be managed.

## **5. Satisfaction with program: Are members satisfied with Ganesha's services?**

Overall Ganesha members report high satisfaction with the program. First, the fact that 87% of members continue on to a second loan shows that members are satisfied with the service and are experiencing benefits. In addition, our survey found 90% planned to borrow more, mostly to expand their existing business. Similarly 87% were satisfied with the repayment schedule, and most of those who were not satisfied wanted to accelerate the

schedule. Only 9% reported that they had trouble repaying, indicating the loan amounts are appropriate for almost all members.

It is clear to us that Ganesha, in the short time it has been operating, has made a difference in the lives of the women it serves and their households. This study is an important first step in documenting Ganesha's impact. While we have learned a great deal from this project, there is much more to be done. For example, it will be important to understand why some women are much more successful in increasing earnings than others. It will also be important to examine factors that lead members to remain in the program as opposed to leaving after one or two loans. We believe that Ganesha offers valuable lessons for other organizations which offer microfinance services in Indonesia and we hope this project, in a small way, can contribute to the development of the microfinance sector in Indonesia.

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## Appendix A: Statistical Tests on Key Measures

**Table A-1: Change from Before Ganesha to Currently on Key Financial Measures t-test Results**

<i>Measure and Sub-Group (n)</i>	<i>Mean Before</i>	<i>Mean Current</i>	<i>t-Value</i>	<i>Significance of t (two tailed test)</i>
<b>Change In Member Income(Rp 000)</b>				
All Respondents (178)	129	321	9.1	.000
Loan 1 (56)	195	254	2.0	.050
Loan 2 (58)	111	345	5.5	.000
Loan 3 (64)	86	357	8.6	.000
<b>Change in Per-capita Income Before to Current (Rp 000)</b>				
All Respondents (178)	99	202	10.6	.000
Loan 1 (56)	100	187	5.5	.000
Loan 2 (58)	101	226	6.9	.000
Loan 3 (64)	97	193	6.0	.000
<b>Change in Housing Index</b>				
All Respondents (166)	6.16	7.16	7.2	.000
Loan 1 (50)	6.20	6.52	2.9	.005
Loan 2 (55)	5.59	6.87	3.6	.001
Loan 3 (61)	6.54	7.95	5.8	.000

**Table A 2: Differences Between Loan Groups in Changes on Key Financial Measures t-test Results**

<i>Measure and Sub-Group (n)</i>	<i>Mean Change Loan 1</i>	<i>Mean Change Loan 2</i>	<i>Mean change Loan 3</i>	<i>t-Value</i>	<i>Significance of t (two tailed test)</i>
<b>Change In Member Income(Rp 000)</b>					
Loan 1 vs. Loan 2	58	233		-3.3	.001
Loan 1 vs. Loan 3	58		270	-4.8	.000
Loan 2 vs. Loan 3		233	270	-.7	.482
<b>Change in Per-capita Income Before to Current (Rp 000)</b>					
Loan 1 vs. Loan 2	87	125		-1.6	.119
Loan 1 vs. Loan 3	87		96	-.4	.692
<b>Change in Housing Index</b>					
Loan 1 vs. Loan 2	.32	1.18		-.9	.369
Loan 1 vs. Loan 3	.32		1.41	-2.4	.017
Loan 2 vs. Loan 3		1.18	1.41	-1.4	.531

**Table A3: Length in Program in Days Regressed on Change in Personal Earnings**

<i>Variable</i>	<i>Standardized Beta Coefficients</i>	<i>t-value</i>	<i>R square</i>	<i>Significance of t (two tailed test)</i>
Constant	-29.206	-.642		.521
Length in program in days	.234	3.196		.002
<b>Model</b>			.055	.002

## Appendix B:

### Ganesha Impact Survey Questionnaire (English Version)

Staff	Number	RT name	Client Name	Client nb.	Loan 1	Loan 2	Loan 3	date
					Rp...000	Rp...000	Rp...000	

#### A. CUSTOMER SATISFACTION

1- Has anyone in your household taken a loan in the past year from any other source?

1.Yes      0.No      99.Don't know     

2- If you have not taken a loan from any other source, please give the reasons  
(Do not read. Multiple answers possible)

1. Procedure too complicated	
2. Loan too expensive	
3. Inadequate loan term	
4. Loan size not big enough	
5. Loan size too big	
6. Do not need a loan	
7. Did not have guarantee or collateral	
8. Other (specify) _____	

3- In your opinion, what would the ideal loan size be for..?

First Loan	Second Loan	Third Loan
_____	_____	_____

4- Would you prefer a different repayment period for the loans you receive?

	Code	Preferred period		Code
1.Yes		_____months	0.No	

5- Did you face any difficulty repaying the loans *you received from Ganesha*?

1.Yes (go to n.6)      0.No (go to number 7)     

6- (If yes) what caused your repayment problems? (*Don't read answers. Can be multiple answers.*)

	Last Loan	Current Loan
1. Loan activity was not profitable		
2. I or others in my family had been sick		
3. I used some of the loan money for food or other items for the household		
4. Sold on loan and did not get paid back in time		
5. Financial/legal problems		
6. Other (specify) _____		

7- Do you plan to borrow more money from Ganesha?

1.Yes (go to n.10) 0.No (go to n.11) 99.Don't know (go to n.11)

8- (If yes) What are your future plans for your business?

1. Open a new business	
2. Expand my current business	
3. Open a new business with my husband	
4. Add capital to husband's business	
5. Add capital to your joint business.	
6. Other (specify)_____	

9- If you are not planning to borrow more money from Ganesha, Please give the reasons. (Do not read. Multiple answers possible.)

1. Procedure too complicated		5. Attending weekly meeting	
2. Loan too expensive		6. Making weekly payments	
3. Inadequate loan term		7. Do not need a loan	
4. Loan size not big enough		8. Other (specify)_____	

## B. LOAN PURPOSE/USE

10- Interviewer: fill the table below. Ask for typical week/month figures. If they cannot recall ask for last week figures.

	Loan Activity	1-Member only 2-Both 3-Husband only 4- Others (specify)	How much of the loan used	Income per day/week	Total workdays/month	Income per month (Rp.000)	How much given to household
1							
2							
3							
4							
5							
TOT							

11- Did you use any portion of your last loan from Ganesha to...? (Read each statement and fill in the appropriate box).

	Code	How much Rp 000?
a) Buy food for your family	1.Yes 0.No 99.Don't know	
b) Buy clothes or footwear	1.Yes 0.No 99.Don't know	
c) Pay for health services		
d) Give or loan money to someone else (husband not included)	1.Yes 0.No 99.Don't know	
e) Keep money on hand in case of emergency	1.Yes 0.No 99.Don't know	
f) Repay the loan's installments	1.Yes 0.No 99.Don't know	
g) Pay for education for your children	1.Yes 0.No 99.Don't know	
h) Pay for house improvements	1.Yes 0.No 99.Don't know	
i) Pay for household debts	1.Yes 0.No 99.Don't know	
j) Buy household items	1.Yes 0.No 99.Don't know	

**C. HOUSEHOLD WELL-BEING**

12- a) Were your children born with a traditional birth attendant, a bidan or a doctor? b) Have they been vaccinated against Poliomyelitis or Tuberculosis? (Use the table below)

Name of the child	Age	Traditional Birth Attendant	Bidan	Doctor	Vaccinated?	
					TB	Polio
1)						
2)						
3)						
4)						
5)						
6)						
7)						
8)						

13- Where do you usually go when a member of your household is ill? (only one answer possible).

- |              |                          |           |                          |
|--------------|--------------------------|-----------|--------------------------|
| 1. Warung    | <input type="checkbox"/> | 4. Dukun  | <input type="checkbox"/> |
| 2. Apotik    | <input type="checkbox"/> | 5. Doktor | <input type="checkbox"/> |
| 3. Puskesmas | <input type="checkbox"/> | 6. Others | <input type="checkbox"/> |

14- Do you use any form of birth control at present?

- 1.Yes      0.No

15- How many meals did everyone eat during the last 2 days? (Indicate the day and entry the code).

	Yesterday Day _____	Day before yesterday Day _____
a. 1		
b. 2		
c. 3		
d. 4		
e. >4		

16- During the last seven days, for how many days were the following foods served in a main meal eaten by the household...? (Read the food and then the days one by one).

Food	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
Meat/Parts								
Chicken								
Fish								
Eggs								
Vegetables								

17- During the last seven days, for how many days did you just eat rice/noodles and vegetables? (read the days and wait for the answer).

a) Mon	b) Tue	c) Wed	d) Thu	e) Fri	f) Sat	e) Sun
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18- During the last 30 days, for how many days did your household not have enough to eat?

0	1-5	6-10	11-20	21-30

19- During the last 12 months, for how many months did your household have at least one day without enough to eat?

a) Jan	b)Feb	c) Mar	d) Apr	e) May	f) Jun	Total
g) Jul	h) Aug	i) Sep	j) Oct	k) Nov	l) Dec	

20- Are any of your children working in your or your husband's business?

1.Yes      0.No      99.Don't know     

21- If yes then: Could you please indicate the name of the children working in your or your husband's business?

Name of the child
1)
2)
3)
4)

#### D. EMPOWERMENT

22- What is your personal monthly income now? \_\_\_000 Rupiah

23- Since you joined Ganesha, has your personal income...? (Read answers and enter response)

1	2	3	4	5	99
Significantly Decreased	Decreased	Remained the Same	Increased	Increased Significantly	Don't Know

24- Since you joined Ganesha, have your personal savings...? (Read answers and enter response)

1	2	3	4	5	99
Significantly Decreased	Decreased	Remained the Same	Increased	Increased Significantly	Don't Know

25- Who in your household decides how to use the money you earn?

Members of household	Place check Mark (x)	Members of household	Place check Mark (x)
1.Self		5.Parent	
2.Spouse		6.Relative	
3.Joint decision self/spouse		7.Other ( _____ )	
4.Children		8.Other ( _____ )	

## E. GENERAL INFORMATION

26- Since you joined Ganesha are there any changes in the number and education of your children?  
(Interviewer: fill the table below beforehand).

	Name	Age	M/F	Status in Household	Education			Name	Age	M/F	Status in Household	Education	
					Latest/Year	Still at school?						Latest / year	Still at school?
1							7						
2							8						
3							9						
4							10						
5							11						
6							12						
	Jumlah												

**F. SEPARATE SECTION** (To use only if any of the children is currently attending or has already attended SMA).

27- Type of School: SMA negeri, SMA swasta, Madrasah Aliyah negeri, Madrasah Aliyah swasta?  
\_\_\_\_\_

28- How did you pay for monthly school fees (SPP) for the children who are attending or have attended SMA?

1. Scholarship	
2. Borrowed money from someone	
3. Savings	
4. Income	
5. Lain (specify: _____ )	

## G. ASSET INFORMATION

29- Livestock Information (Interviewer: fill the table below).

	Livestock	Quantity	Quantity purchased in the last 12 months
1	Chicken		
2	Duck		
3	Goat/Sheep Small		
4	Goat/Sheep Large		
5	Other		

30- Do you own any productive asset (apart from livestock)?

	Type of asset	Quantity	Quantity purchased in the last 12 months	Purchase Price (.000 Rp)	Remaining payment (.000 Rp)
1	Working capital/warung				
2					
3					
4					
5					
6	TOTAL				

31- What is the usual occupation of the working members of your household, their monthly income and how much did they contribute to the household income last month. DO NOT INCLUDE LOAN RELATED ACTIVITIES.

(Interviewer: fill the table below. Also ask for money sent by post and remittances).

	Name	Gender (M/F)	Occupation/ Enterprise	Income per day/week	Workdays/month	Income/ Month (000 Rp.)	How much given to household?
1							
2							
3							
4							
5							
7	Money received from people living outside the HH						
9	TOTAL						

32- Did you spend more in the following categories since you took your first loan with Ganesha?

	Increased (Y/N)	Increased in quality and/or quality
1. Food		
2. Clothing and shoes		
3. Education		
4. Health		
5. Pesta		
6. Other ( )		

33- Since you joined Ganesha, has your household income...? (Read answers and enter response.)

1	2	3	4	5	99
Significantly Decreased	Decreased	Remained the Same	Increased	Increased Significantly	Don't Know
Proceed to question 34		Proceed to question 36	Proceed to question 35		Proceed to question 36

34- If decreased: Why has your income decreased? (Do not read. Multiple answers possible.)

1. I or household member have been sick
2. Problems with my business
3. Someone in the household lost a job
4. Family emergency
5. Other (specify) \_\_\_\_\_


35- If increased: Why has your income increased? (Do not read. Multiple answers possible.)

1. Expanded existing business
2. Started new business
3. Someone got a job
4. Received money from remittances
5. Other (specify) \_\_\_\_\_


36- Since joining Ganesha, has your household's cash savings? (Read answers and enter response.)

1	2	3	4	5	99
Significantly Decreased	Decreased	Remained the Same	Increased	Increased Significantly	Don't Know

37- Since you joined Ganesha, has the time you spend working in any of your business....?: (Read possible answers)

1	2	3	4	5	99
Significantly Decreased	Decreased	Remained the Same	Increased	Increased Significantly	Don't Know

38- How many hours per day do you spend in your business? Now \_\_\_\_\_ before Ganesha \_\_\_\_\_

39- How many days per month do you spend in your business? Now \_\_\_\_\_ before Ganesha \_\_\_\_\_

#### H. HOUSE INFORMATION

40- Since you joined Ganesha, did you improve your house in any significant way?

1.Yes (go to n.41)      0.No (go to 42)      99.Don't know (go to 42)     

41- (if yes then): How did you improve your house (Read each statement and fill the appropriate box).

	No	Repair	Improve	New
1. Repair/improve/build roof				
2. Repair/improve/build walls				
3. Repair/improve/build floor				
4. Install electricity, PLN				
5. Improve water supply (PAM, well)				
6. Build/Improve toilets				
7. Other (specify) _____				

42- Housing index. (Fill the table below).

	Item	Type or Condition	Score	
			Before	Now
1	Size of House	Large (3) Average (1) Small (0)		
2	House Condition	Good (3) Average (1) Damaged (0)		
3	Type of Roof	Asbestos/Aluminium sheet/special tile (2) normal tile (1) Grass/Hay (0)		
4	Type of wall	Brick (2) Partly brick (1) Wood/bamboo/Mat (0)		
5	Type of floor	Floor tile (3) Partly floor tile (2) cement (1) earthen (0)		
6	Electricity	Own meter (2) Connected to another house (1) none (0)		
7	Water source	Piped water (2) Protected well (1) Unprotected/open well (0)		
8	Vehicle	Motor vehicle (6) New motorcycle (5) Old motorcycle (2) Bicycle/tricycle(0)		
	<b>Housing Index</b>			