Report on the Impacts of Grassroots Management Training in India

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Executive Summary

The Economic Development Institute (EDI) established the Women’s Enterprise Management Training Outreach Program (WEMTOP) as a three-year pilot program based on a series of assumptions about improving the income-earning capacity of assetless women in India. Earlier research suggested that in the usual package of supports provided by voluntary organizations (VOs) and other donors to microenterprises, management training was relatively underemphasized, while provision of credit, marketing assistance, training in specific skills or use of new technologies, and other technical backup support were far more common. Thus it was decided that WEMTOP would provide management training, a missing component, using a “package completion” approach that would be particularly significant where women already had other interventions supporting their work. Later, empowerment training was added to the courses to enable women to improve their business managerial capacity and, concomitantly, their status and authority in their families and communities. Training was to be offered in the pilot stage for training VO staff to be part of enterprise support teams (TEST) for grassroots management training (GMT) and for training VOs to in turn train assetless women.

This study analyses the impacts of GMT on the village women who participated in the pilot program, based on the results of a field survey administered in the project areas in June and July 1996. This is one component of a four-part evaluation process. Concurrent with the inception of the pilot impact survey in April 1996, another team was sent to India for three weeks to produce an evaluation that stressed institutional aspects of the WEMTOP project, specifically how well Udyogini and the three partner training institutions (PTIs) it had selected to develop training programs and to train agents of selected VOs had delivered their project. This team based its analysis on interviews with trainers, PTI staff members, Udyogini, and women trainees, as well as on documents and perspectives provided by experienced personnel from other, non-WEMTOP-associated VOs and donor agencies. A separate Washington-based analysis of the overall costs and benefits of the project was also planned. Eventually, in fall 1996, a fourth group was to produce a summary evaluation of WEMTOP, taking into account the findings of the three previous analyses.

For this survey, a set of six hypotheses was established as the basis for evaluating GMT’s impacts on Indian village women. We hypothesized that GMT (1) increased individual and family incomes and improved family well-being, (2) increased enterprise profitability, improved and expanded enterprise markets, and increased employment, (3) empowered women (measured primarily by their decisionmaking power in matters of importance to them and to the family), (4) added to the effects of access to credit, making businesses more profitable than they would otherwise have been, (5) had varying impacts, depending on the type and amount of training given, and (6) had the greatest effect on the poorest women. The
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final survey on which this study is based consisted of 430 respondents, divided between GMT trainees and a “match” group chosen for their socioeconomic and demographic characteristics, and their economic activities (similar to those of the GMT women). The major findings with regard to these hypotheses are summarized in the table following this summary.

At the outset we must stress that certain limitations may inhibit our ability to draw definitive conclusions about the GMT impacts. Most important, GMT for groups of village women began in 1994, but many women had not begun their training until late 1995, and had not completed it until the end of that year. Following a self-evaluation administered by Udyogini, other women began GMT in the second (1996) training wave, which had not been completed by the time this survey was undertaken in June 1996. Thus the longest time period between completion of training and this evaluation was a year and a half—clearly insufficient to fully observe the impact of a program.

Second, the VOs who gave the GMT did not have in place before the training a common package of interventions, including financial services, to support women’s enterprises. Many did not even support their women clients’ business activities. Given the wide variation in what the VOs did for their women clients, the final results must be interpreted with care, not only for the recent nature of the training experience but also because we cannot fully nullify the effects of the trainee-respondents’ widely different backgrounds on the impacts observed. In the absence of a true experimental approach—where a baseline study has been carried out on both future trainees and a control group, with detailed information on their prior types and levels of experience—this type of survey can only indicate the kinds of impacts that this training program may have, and those indications should be verified by a follow-up study undertaken several years after the first training was held.

Our preliminary findings are listed below.

1. In regard to the first hypothesis, the original concern was to show whether GMT, combined with other types of supports, had a positive impact on the poor women who received the training—measured by increased incomes, increased savings, increased family and individual assets, and improved family well-being (that is, more and better food and more education). The survey results indicated that, combined with other types of interventions, GMT did lead to increased individual income and net profits. Differences in business management style and business performance also emerged in the data. GMT women are distinctly more likely to keep adequate accounts of their business expenses, and were also more likely to have access to credit and savings accounts. Concerning access to credit, however, this benefit was a part of the GMT, rather than a result. Participation in savings was also made a part of the overall GMT program. However, based on respondents’ reports, a greater ability to save does seem to result from GMT.

2. Regarding employment and marketing, the results are not definitive. Evidence, albeit incomplete, suggests that increased employment resulted from GMT. The results also show that GMT women are more likely to have changed their marketing
pattern and to sell beyond their home villages, but this is because many VOs themselves began marketing the women’s products and not because the women learned to go out and seek new markets.

The second and fourth hypotheses were much more difficult to deal with. They explored whether GMT itself has a package-completion effect—that is, whether it led to improvements in income, increases in employment, expanded markets for the enterprises, and improved access to credit and extension services beyond what the existing package could provide. Because no consistent package of interventions was offered to the GMT women trainees in the period preceding their training, GMT’s exact contribution was difficult to ascertain. However, a quick review of the regression model presented in the section analyzing GMT’s economic impacts shows evidence that training had a significant positive impact on income and net profits separate from positive impacts associated with age, access to credit, family income, percentage contribution to family income, start date, and family size. In looking at relative impact, credit had the largest impact, followed (in descending order) by family income, percentage contribution to family income, start date, GMT, and age. That GMT was among the variables with least impact is predictable: training in itself cannot offset all other major factors; it works with them, not independently.

Concerning the fourth hypothesis, the findings indicate that GMT impacts do go beyond the results of access to credit or savings. Among women who have access to financial services, there is a 5 percent difference in annual profit between those who had GMT and those who did not—a discernible improvement over the positive effects of credit alone.

The third hypothesis dealt with empowerment. We asked whether GMT led to increases in women’s status and authority in family decisions or in women’s participation in community politics. Analysis of the data indicated little support for GMTs having a significant impact in the area of decisionmaking, except where control of family income was concerned. With women above the poverty line, GMT apparently increased their authority in decisions involving use of their own revenue. GMT appeared to play a significant role in, and was strongly related to, the likelihood that women would take a more active role in community decisionmaking.

The fifth hypothesis dealt with differential impacts that might result from different emphases in the training modules. In this study, owing to the absence of data about the training actually received by the women respondents, we could not test this hypothesis. However, we did uncover one interesting fact: the three PTIs’ widely different types and orientations predicted significantly different impact patterns.

Finally, the sixth hypothesis dealt with the extent to which GMT would have greater (or lesser impacts) on poor women as opposed to women who were slightly better off. The findings were quite revealing, although this hypothesis could not be proven as stated. When we consider net profit alone, the GMT impact is greater among those women above the poverty line. However, when we consider net profit as a percentage of income, the difference is more significant in the poorer group. In fact, the net difference in profits for the poor women was 34 percent of the average of their individual family income, while among the better-off women, the difference was only 17 percent.
Overall, these findings suggest that, in the pilot phase, GMT achieved many of the major training goals set forth by EDI in the planning stage. This is an impressive achievement, given that the VOs had no set package of business supports in place, that three distinctly different PTIs developed the training, that the training modules were initially inconsistent (and slow to develop) across the three PTIs, and that the village-level training program's late start meant only two years had elapsed between the start of training and this evaluation.

When all the different approaches to evaluating WEMTOP are combined, these significant findings should be used in the fourth phase of this evaluation process—with one major caveat: what is presented in this report should be utilized cautiously. Until more time has passed, impacts will not have fully registered. Several years at least will be required to know if the GMT women have permanently changed their business management patterns and their enterprises' performance and profitability, as well as their status and participation in family and community decisions. At least this much time is required to know if the new businesses established in the training period are viable and sustainable, and if women have been sufficiently trained so they can more into new and more profitable lines of business as needed, change their markets, seek out loans, and so forth.
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Terms of Reference and Methodology of Study

Introduction

The terms of reference (TOR) agreed to on March 21, 1996, and extended on April 2, 1996, requested a pilot survey be carried out and results analyzed on the impacts of the grassroots management training and outreach (GMT) program on women in the Indian survival economy who had participated in GMT. The report on the results of this work was submitted to the Economic Development Institute (EDI) on June 3, 1996. The same TOR was extended on May 22 to request a full survey in India in June and July. This field research was completed July 31, 1996. A new July 29 TOR requests an analysis of this data to present the discernible impacts of GMT on participants. This report presents these findings.

The background to this request is EDI’s design of a new management training approach to provide poor grassroots women with training to improve and stabilize their earning capacity. As a test—and for the further development—of this approach, pilot training projects were established beginning in 1988, the first of which were the Women’s Entrepreneurship Development Project (WED) in Malawi and Tanzania, and the Women’s Management Training Outreach Program (WMTP) in Burkina Faso, Nigeria, and Senegal. In 1991, the approach, called in this case the Women’s Enterprise Management Training Outreach Program (WEMTOP), was introduced in three Asian countries: India, the Philippines, and Bangladesh. The organization, content, and delivery of the training differed according to the regions in which pilots were established (although grassroots women remained the principal focus of outcome in all cases). Basic principles common to all projects included strengthening nongovernmental organizations’ (NGOs’) capacity for training landless and assetless women, developing appropriate training materials, and establishing a decentralized delivery system that would increase the capability of women to control their own enterprises and the income derived from them.

The GMT pilot project has ended in India and in the five African countries. Midterm project evaluations have been completed in all countries, and final evaluations have been completed in several countries, including India. A large amount of program data, varying in quantity and content according to country, has been gathered. In India, for example, a project monitoring and evaluation (PM&E) scheme enables trainees to use a graphics-oriented set of matrices to rate their business capability, their empowerment, and the profitability of their enterprises at set periods. This provides a wealth of information on self-perceived changes in the
trainees' lives and work resulting from GMT. This, combined with the rigorous midterm self-examination conducted by Udyogini (the NGO established to manage the project) and other papers and reports, provides a rich source of material against which to gauge the data that now emerge from a systematic end-term evaluation.

In fact, EDI established a four-part evaluation procedure, one component of which is presented in this report: an impact assessment based on a field survey of the village women trained in GMT classes and a "match" group of women chosen for being engaged in economic activities similar to those of the GMT women when they were selected for the project. Concurrent with the April inception of the pilot impact survey, another team was sent to India for three weeks to produce an evaluation that stressed institutional aspects of the WEMTOP project—specifically how well Udyogini and the three partner training institutions (PTIs) it selected to develop training programs and to train agents of selected voluntary organizations (VOs) had delivered their project. This team based its analysis on interviews with trainers, staff members of the PTIs and Udyogini, and women trainees, as well as documents and perspectives provided by experienced personnel from other, non-WEMTOP-associated VOs and donor agencies. A separate Washington-based analysis of the overall costs and benefits of the project was also planned. Eventually, once the initial studies were completed, a fourth group was to produce a summary evaluation of WEMTOP, taking into account the findings of the three previous analyses.

WEMTOP's reputation preceding this evaluation appeared to be quite positive. In particular, Udyogini had developed the participatory nature of the program beyond other countries where this training approach was tried by EDI through its work with the PM&E system. The results of their efforts have attracted favorable attention in the region. On the other hand, some reports have questioned whether WEMTOP in fact has been implemented in such a way that its principal stated goal—that GMT should have the effect of completing a package of interventions or supports to women’s microenterprise activities, making them significantly more productive than they would have been in the absence of GMT—could be met. In this regard, critics have argued that the choice of states in which to operate (Bihar, Orissa, and Rajasthan) was inappropriate, because the VOs available for collaboration there did not maintain consistent prior economic programs, preventing a test of the package-completion effect. While the final evaluation points to the value of WEMTOP’s experimental nature, the absence of a consistent prior package of supports to the village women’s economic activities nonetheless indicates that the impact of GMT by itself is difficult to disentangle. Thus a study that (to the extent survey data permit) investigates in depth the impacts that can be realistically attributed to GMT is more necessary than ever.

Anecdotal evidence suggests that GMT has had a large impact on the businesses and lives of the women trained, but how large is "large"? The question is important because we need a much clearer, more definitive view of the actual results, not only for the sponsoring agency’s benefit, but also for a larger policy issue of considerable importance to the Bank and other donors. Two groups of scholars and practitioners have questioned training’s efficacy, or at least its primacy, in the package of possible interventions to support women in the survival economy. One
school believes that a minimalist approach providing one factor of intervention only—specifically, access to credit—is the most cost-effective way to reach poor women. In this view, training is a "frill" or, at least, may be so costly that it is unwarranted, when balanced against the possibility of offering credit access to a much larger group that would use the same amount of funds only for credit. GMT was never suggested by EDI as a replacement for access to credit or other support services such as marketing assistance. But it is contended that GMT is the missing ingredient in many projects, without which the maximum development of business profitability, improvement in family well-being, and individual empowerment may not be reached.

Members of the second school agree that training is an essential and even catalytic component in interventions supporting microenterprises, but argue that training is critical for those who have established relatively successful microenterprises that may be on the verge of transformation into medium-scale enterprises moving into the formal sector. Training for these women, they argue, allows them to make changes in business plans, marketing, and other areas needed to develop long-term, sustainable, growing enterprises. In contrast, this school contends, illiterate women in marginal activities cannot benefit from training, or, if they do, will require much longer and more intensive training, which may be too expensive when the maximum impact for the dollar invested is calculated.

To counter both these contentions, strong positive impacts of grassroots management training would have to be demonstrated. Empirical evidence is needed that GMT does result in significant gains in individual, family, and enterprise income and family well-being, and in significant improvements in the status and socioeconomic power of women, if in fact the counterview—that business and empowerment training is essential for maximum profitability and is necessary for women in the most marginal, as well as better-established, sectors of microenterprise activities—is true. Although a study undertaken only two years after training was begun cannot provide definitive evidence of impact, it can at least provide hypotheses based on initial findings that can be more thoroughly tested after enough time has passed that changes occurring as a result of this training can fully register. That is this report's objective.

The March, April, and July TORs requested an assessment of GMT via a full survey in India to demonstrate the impacts of the training on participants. The hypotheses to be tested were

1. GMT combined with credit and other support services leads to
   a. increased income from the sum of her economic activities for the woman entrepreneur in the survival and microenterprise economy
   b. increased savings for the woman entrepreneur
   c. increased personal and family assets
   d. improved family well-being (measured by greater family consumption of nutritious foods and increased education for children)

2. GMT leads to
   a. improved access to credit and extension services
b. expanded markets (beyond the immediate local market) for microenterprises

3. GMT leads to empowerment
   a. the ability of a woman at the survival or microenterprise economy level to have a respected and influential position in decisions in her family
   b. the ability of women to take a larger, more decisive role in the community as well as in family decisions

4. Women who have had access to credit and/or other support services, but not to GMT, will show smaller levels of improvement than women with GMT, who have also had access to credit and/or other support services, in the dimensions specified in hypotheses 1 and 3.

5. Type (degree of emphasis on each of the following: marketing, human resource management, finance and credit) and amount (number of days) of GMT and follow-up will lead to different degrees of impact, measured by the dimensions identified in hypotheses 1-3.

6. The poorer the entrepreneur (measured by family and individual income and assets), the greater the GMT impacts (as measured in hypotheses 1-3).

A field survey in the project states and subsequent analysis of its data were undertaken in an effort to test these hypotheses, but certain limitations inhibit the possibility of a full test and a definitive conclusion regarding GMT impacts.

First, as noted above, the most important limitation is that GMT training for groups of village women began in 1994. Many did not begin their training until late 1995, and had not completed it until the end of that year. Other women began GMT in the second phase of training (following a self-evaluation process implemented by Udyogini), which started in 1996 and was not completed when this survey was undertaken in June of 1996. This means that the longest time period between training completion and survey administration was a year and a half. This is insufficient time to observe the full impact of a program. Earlier studies have shown that only after 10 or more years are we able to discern the full pattern of how business practices, profits, and family well-being have changed. On the other hand, EDI now needs to decide the value of the training for other programs. It is therefore essential to explore the impacts that can be discerned, always with a caveat that these are results occurring just after training, and they will likely change as time goes on—perhaps lasting and increasing, but conceivably decreasing or disappearing.

Second, the lack of a common package of interventions prior to GMT is a serious hindrance, given the wide variation in VOs' efforts on behalf of their women clients. Some had no interest in their economic activities; some supported these
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with credit, with no interest charges; others supported business with credit and interest (at varying rates); still others offered savings schemes but no other economic interventions. Some VOs introduced new technologies, helped with marketing, gave business training, and provided financial services; others did not. Some gave the women's groups full authority over their enterprises, but others kept control in the hands of their extension agents. Some nominally "sponsored" women's groups (the enterprises were fully privatized.) The range of approaches varies widely across the 22 VOs. In the time allotted and with the resources provided, we could not obtain full information on each VO's activities and how different groups of women were organized and managed their enterprises. This research, then, is based solely on observation of self-reported behavior patterns and behavior changes in two groups of respondents—those receiving GMT and those not trained. Considerable efforts were made to control for different levels of previous experience with prior interventions such as assistance in marketing, other business or empowerment training, and access to credit and savings schemes of various types. However, the final results must be viewed cautiously, not only because of the recent nature of the training experience, but also because we can not fully segregate the effects of the trainees' widely different backgrounds on the impacts observed. In the absence of a true experimental approach, where a baseline study has been carried out on both future trainees and a control group with complete information about their prior types and levels of experience, this type of survey can only indicate the kinds of impacts that this training program may have—an indication that should be later verified by a study conducted several years after the first training's completion.

The results of this study, then, will be suggestive rather than definitive, but are important nonetheless. We intend to illustrate the types of impact exhibited by the current data—of value because they are systematically gathered and analyzed by a group outside of the training process. No other avenues of analysis offer this objectivity (although they provide other types of insights that a survey cannot). This relatively objective assessment of the trends emerging in the data, indicating impacts or lack thereof, should provide valuable evidence of the potential significance of GMT.

Methodology

Survey Techniques

Assessing the impact, particularly the social impact, of a complex development project on a population always presents serious methodological problems. This evaluation of GMT, true to form, raised some serious methodological questions and offered some interesting, although not unique, challenges. In their now classic work, Evaluating Social Projects in Developing Countries, Freeman, Rossi, and Wright suggest the use of one of three types of approaches to social impact assessment, each with its methodological advantages and disadvantages and each linked
to a different level of sophistication and confidence. In the least complicated and most often applied of the three models, change in the status of the dependent variable or preferred project/policy outcome is compared before and after the project intervention, in the same location and/or with the same target population. Employing this approach has a serious disadvantage in that it is very difficult, if not impossible, to separate the impact of the exogenous factors that may have significantly contributed to project outcomes from those associated with specific project activities. Thus, our ability to attribute changes, positive or negative, to the project intervention is seriously compromised.

In the second and third broadly defined approaches to impact assessment, the research effort is designed to control for the impact of exogenous factors on the measures designed to monitor success or failure (change). For example, how can we distinguish the impact of changes associated with providing training from those resulting from macroeconomic changes in India and the world? How are the dimensions of complex social change, family relations, decisionmaking, the status of women, education, nutrition, housing, and consumer goods to be sorted out and attributed to distinct projects or programs? How have national policy changes, including administrative reform, early retirements, and privatization, influenced small business and social change in contraposition to a project providing training? How has the provision of interventions other than training—such as access to credit or assistance in marketing—affected the target population? The principal objective is to compare an "experimental" and a control group, both of which have been subjected to the same basic exogenous factors and thus differ only in the application of the treatment (project, policy, or other related activity). Differences in the final state of the two groups are thus attributable, at least in theory, to the project activity, other things being equal.

The selection of a control or match group and the actual collection of data pose additional problems. In order to examine the impact of exogenous factors we rely on a carefully selected and monitored match group(s). The most sophisticated evaluation design requires collection of baseline data in both the project and control groups (areas), and on successful measurement of change in both after project completion and/or during various stages of implementation. Using this approach, a comparison can be made between change that took place in both the experimental and control groups. Again, we assume that the difference in the level and rate of change between the two can then be attributed to the project interventions. The alternative situations in which baseline data are or are not available offer an additional challenge. When baseline data have not been collected on either the project or the comparison group, the latter group is selected at the time of the impact assessment, based on certain key characteristics at the time of initiation of the project that are matched with those of the project target population. This approach is generally labeled a "quasi-experimental impact assessment." The basic assumption is that the project and the comparison group started from a similar, if not identical, base, making it possible to compare the end-of-project status in the two groups (another critical assumption being that no significantly different exogenous factors affected them).

In the WEMTOP project, it is necessary to evaluate the before and after status of women working in small enterprises who received grassroots management training.
However, direct baseline data on the status of these women or their firms before they received the training are not available. The same applies to a potential comparison group of women and their firms. Relevant data are available, however, on the informal sector and the role of women in India. Furthermore, a well-established track record of similar impact studies in India and other countries exists that suggests the sampling methods, survey techniques, and types of questions that elicit the most accurate results. These findings will be used here for comparative purposes, both with our sample of project participants and with the control group.

Several additional, potentially difficult methodological issues of an ecological nature must be raised at this time. First, the project in India trained trainers who later trained grassroots women. Logically, these trainers will internalize the GMT principles and practices and apply them even when not directly giving GMT courses. This may also contribute to the well-being of other women and firms (non-GMT participants) through a ripple effect, creating a “win-win” situation but resulting in a serious underestimation of GMT impact, both direct and indirect, because the women in the comparison group could be indirect beneficiaries and thus manifest positive changes as a result of GMT. In this full study, match groups were selected to match with GMT participants, including both those who may have received the “spread” effect and others who will not have been in contact with trainers who had GMT training but who are from nearby zones or regions. (This avoids introducing the problem of comparability of the exogenous factors, especially those that may be associated with geographic location.) With this tactic, the spread effect could be partially observed, but the full extent of its impact could only be calculated if a full survey of all the clients of the 23 VOs were the basis of sampling.

Over time, theoretically, GMT training may also stimulate economic growth and generate employment that indirectly contributes to the well-being of other women and other small firms. To the extent that this occurs, GMT impacts will be underestimated unless a full evaluation of the economic situation in the zones where GMT has been given is undertaken. This is well beyond the scope of this evaluation exercise and would be difficult even in a full-scale study with a considerably larger sample base.

A third problem arises from the fact that the GMT training in India only began at the end of 1994. Other studies have demonstrated repeatedly that length of time since project implementation is a significant factor in predicting degree and existence of project impacts. Impacts of course differ, depending on the kind of economic activity in which the women are engaged, as well as the kind and amount of training received and which impacts are assessed. Given the brief time period elapsed since training, it will be difficult to capture all the impacts that this training experience may have had, especially those related to mobilizing women to take more responsibility in their work, family lives, and communities. Some impacts, however, will appear after only a year. Identifying a good, well-matched contrast group was thus even more essential to the success of this assessment.

Principal characteristics of match women selected for this study included being from a nearby zone, engaging in economic activity similar to the participant women, and living on a scale and level of poverty similar to the GMT women at the point they first received training. Enumerators were instructed to go to designated areas
where women were engaged in small and microenterprise activities paralleling those of GMT women. They then chose every third (or fifth, in more populated zones) woman entrepreneur in that field of activity, up to the participant limit specified at the outset of the survey. In addition, we oversampled specific groups to try and capture certain important characteristics. Thus we overselected both those who did not have GMT but were clients of the same organization to assess the spread effect and those who had a complex set of supports to their economic activities before GMT, to try to assess the package-completion impact. We also oversampled the piece-rate occupations to compare those workers to GMT women in this specific enterprise activity. Among GMT trainees, we made sure to achieve a statistically significant group of those who had not attended all training sessions to compare to those who had attended all sessions. In addition, we included a group of women who had only started their training in the later phase of GMT, even though in many cases they had not completed it when this full survey was conducted in July 1996.

Because no baseline data exist, it is impossible to directly assess changes over time in the status of our dependent variables, the impact measures. As an alternative, in both the project and comparison groups the interviewees were asked to retrospectively assess the status of their firms and their living situations, and the changes that had occurred in each over time. This method, although far from ideal, nevertheless provides us with some basis for comparing the perceived rate and level of change. The quality of our match group is, once again, critical. We can with some degree of confidence assume that the retrospective capacities and biases of the participants and the control group are roughly comparable. Thus, differences between the two in terms of recollected change may be attributed to GMT training.

In addition to the structured interview procedures employed as the dominant data-gathering technique in this study, we consulted the results of the pilot study, studied the PM&E data, carried out interviews with the project staff, and reviewed the numerous documents and papers already produced on WEMTOP, primarily by Udyogini. In June, I carried out lengthy interviews with the staff of two VOs in Rajasthan (CECODECON and Sambal), because these two organizations had had an extensive program of supports to women clients' economic activities before WEMTOP ever started. I also interviewed women clients of these two VOs who had had GMT, in order to learn directly from them what had happened to their enterprises and in their lives as a result of the WEMTOP-sponsored training. Interviews with the two sources from these VOs produced detailed information on exactly what the package-completion effect was in their cases.

**Questionnaire Preparation and Sampling Techniques**

A questionnaire was prepared in the United States from four principal sources: (1) a draft questionnaire prepared by EDI during February and March, (2) comments and revisions on this draft suggested by a variety of staff involved with GMT in India and elsewhere, and consultants to EDI who had experience with the GMT program, (3) models of successful microenterprise evaluation surveys prepared by the Bank and by other sources such as Gemini, (4) questionnaires on impact
assessment of microenterprise programs tested by this researcher in other studies on Africa, Asia, and Latin America. This questionnaire, to be used for individual women who had had GMT training and a comparison sample, covered five areas: individual profiles of the woman and her family, including revenue and assets both on a familial and individual level and change therein since GMT; type and amount of GMT and other training and followup; enterprise management and profitability and change therein since GMT; status of the women in family decisionmaking and change therein since GMT, together with use of time and change therein; and individual evaluation by the women of the impacts of GMT.

The questionnaire was brought to Delhi on April 9, 1996. The Udyogini staff had already located and hired two teams of enumerators—both chosen for their orientation to field research on women and previous field experience—to conduct this pilot survey in Rajasthan and Bihar. Leaders of these teams, Drs. Rita Ray and N.P. Singh, together with Dr. M.M.P. Akhouri, head of the monitoring and evaluation component for Udyogini, helped revise and refine the questionnaire. After this, the enumerators of Dr. Singh’s group were trained in questionnaire administration; Dr. Ray spent two days with me, assessing each question, and then discussed with the enumerators possible confusion or misinterpretations and how to handle them. In June, the enumerators and field directors met with Lucy Creevey and Dr. Akhouri to assess the results of the pilot study and to reconsider the questionnaire. Certain questions were then dropped or modified before the final version was completed.36

The projected sample, numbering 433 in total, consisted of the following groups.

**West Rajasthan: 145**

- **Trainees**: 85
  1. Old-session GMT trainees: 65
  2. Old and new GMT trainees who did not complete all of course: 25
  3. GMT trainees from new GMT sessions: 20

- **Match**: 60
  1. 30 women in similar piece-rate occupations (similar to women clients of RSS, PEDO, and SURE) from the same vicinity and caste/ethnic groups, about the same age, at an economic level similar to that of the GMT-trained women before GMT
  2. Women in similar occupations (but not piece-rate workers) from the same vicinity and caste/ethnic groups, about the same age, at an economic level similar to that of the GMT-trained women before GMT

**East Rajasthan: 94**

- **Trainees**: 64
  1. Old-session GMT trainees: 45
  2. Old and new GMT trainees who did not attend all classes: 15
  3. GMT trainees from new GMT sessions: 19
1. Women in similar occupations (but not piece-rate workers), from the same vicinity and caste/ethnic groups, about the same age, at an economic level similar to that of the GMT-trained women before GMT

Orissa: 134

Trainees: 44
1. Old-session GMT trainees: 30
2. Old and new GMT trainees who did not attend all of course: 18
3. GMT trainees from new GMT sessions: 14

Match: 90
1. 30 women in similar occupations, from the same vicinity and caste/ethnic groups, about the same age, at an economic level similar to that of the GMT-trained women before GMT
2. 60 women who have not had GMT but are engaged in income-generating activities (IGAs) and are clients of either NIPDIT or ISED

Bihar: 60

Trainees: 30
1. Old-session GMT trainees: 30
2. GMT trainees who did not attend all sessions: 14

Match: 30
1. 30 women in similar occupations, from the same vicinity and caste/ethnic groups, about the same age, at an economic level similar to that of the GMT-trained women before GMT

Using Dr. Akhouri’s estimate of the number of women trained in GMT—510 in the first round and 579 undergoing training in round two—our 223-trainee final survey sample is 21 percent of those trained or to be trained. Adding the pilot survey’s 30 trainees, we will have sampled 23 percent. However, most of this survey focuses on those trained in the first GMT phase (1994–1995) because the second phase was not complete and impacts could not be accurately estimated. In terms of the group that was trained in the first round, in the full survey we surveyed one third of all the trainees. Adding the pilot survey respondents, we have data on 40 percent of the women trained.

In the pilot survey phase, a second questionnaire had been prepared for use where enterprises were run by and for a group (and therefore accounts and records kept for that group business). It focused on the enterprise’s management and profitability. However, when analysis of the pilot data was completed, we found that the data from this questionnaire added very little to the main survey data, since women kept individual track of their own profits and losses, even if the written
records were very incomplete. In the full survey, a second, open-ended questionnaire was prepared for informal, in-depth interviews in order to get information on the women’s groups. This line of research should give additional information on how the groups were formed, for what purpose and what specific relationship the group had to the business activities of women within it. One of these questionnaires was to be administered to the president or secretary of each of the groups where the survey was carried out. No more than one group per VO was to be used. Enumerators were encouraged to write comments and add information, as these questionnaires were really intended to help gather more comprehensive background data.

It should be understood that current wisdom on estimating results of programs supporting microenterprises suggests that impacts of interventions such as provision of credit or training are not necessarily direct or linear, even when looking at something as concrete as income. However, many studies have demonstrated that impacts in the realm of income increase and in more intangible realms, such as household well-being and empowerment, can be demonstrated with a careful research design. Moreover, impacts are better measured when household and individual impacts other than income are also taken into consideration, because of the indivisibility of family and enterprise concerns at the level of marginal survival businesses.

**Data Analysis Procedures**

The primary goal of this evaluation report was to provide objective and timely information about the grassroots management training project. We applied a variety of statistical tools and methods to the data to supply findings that, with as much confidence as possible, given the time frame and other already-cited limitations, can be used to draw conclusions about the viability of the GMT project. The research’s primary thrust was to produce broad-based, fundamental statistics on a variety of issues without much prior information about where it would lead. An other objective was to address a broad range of theoretical and practical problems related to GMT by testing critical hypotheses aimed at measuring the significance of differences between GMT participants and non-GMT participants while minimizing the effects of exogenous, nonproject factors. To achieve these objectives, we suggested a combination of both descriptive and inferential statistical methods.

Descriptive statistics included univariate and bivariate analyses. We proposed a varied volume of information that was comprised of measures of central tendency and of dispersion, graphical, and contingency tables. These univariate–bivariate descriptions of the data are critical, for they provide much-needed background information on the individuals surveyed. Bivariate analyses, for instance, not only provided critical information on pairs of variables, but also helped assess the extent and meaning of the relationship between cross-tabulated variables. Chi-square tests of independence were carried out and Cramer’s V scores computed to assess both the significance and the strength of relationships. This process helped determine from the outset the partial effect of each individual, independent variable on GMT outcome. In addition to these univariate and bivariate
analyses, multivariate analyses are also carried out. Some of the multivariate methods of data analysis used include regression and correlation analysis of variance. Analysis of variance is used, for instance, to determine if and to what extent performance is consistent across GMT and non-GMT groups. Regression and correlation procedures are used to determine how much of the variation in performance is explained by the set of independent variables included in the analysis and to assess both the direction and the extent to which each variable in the model is related to performance when the other ones are held constant.

Conclusion

In the first section of this report, the hypotheses—the objectives of the research—are explained, the research methodology is briefly introduced (see annex A for more detail), and the general characteristics of the sample drawn before the survey was launched are specified. In the second section, background information on India and the three regions involved in WEMTOP and a brief history of WEMTOP and its constituent organizations are presented. The third section presents the analysis of potential GMT economic impacts that emerged in the data, which begins by evaluating the sociodemographic and family economic characteristics of the two subsamples: trainees and match women. Each respondent’s own income from all economic activities and her patterns of expenditures, savings, and assets ownership are also explored. Significant differences between them are reviewed in order to control for these in later analyses. Following this, the businesses in which the women in the sample are principally involved are studied for information on their activity, history, profitability, marketing, and employment patterns. The amount and kind of non-GMT training and other interventions supporting economic activities or empowerment that women may have received is also studied. In addition, GMT trainees are queried about the amount and kind of training they received in the WEMTOP program. At this stage, the section begins an assessment of differences in the principal economic dependent variables between the two groups: individual income, savings patterns, enterprise profits, business capability (measured by ability to keep accounts and stock records), marketing, and employment patterns. The contribution of other important, independent variables such as geographic location, education, age, and other sociodemographic characteristics; of business characteristics such as area of activity and length of time in existence; and of existing prior business supports such as savings and credit schemes or earlier business management training to these differences are assessed in relation to the possible effects of GMT training. The following section on GMT empowerment impacts explores the two principal empowerment dependent variables: decisionmaking authority in the family and assertion of self in community decisionmaking. It also explores other quality-of-life impacts such as changes in use of time. In the conclusion, an overview of the impacts and an assessment of how these relate to the initial hypotheses is presented.

In an earlier draft, the results of the PM&E data analysis were presented in the body of the report because it appeared that this data would give more substance to
some of the insights emerging from the survey data. However, because the data type and quality is markedly different from the survey data, and because the nature of PM&E data collection precludes objective (that is, nonbiased) evaluation of impacts, presenting these results led to some confusion and did not add significantly to the interpretation of the GMT impacts. Nonetheless, it should be emphasized that the PM&E is a valuable source of information on what the women saw as the significant lessons of their training. As a self-delivered reteaching tool, this system is worth close study.

Introduction of Udyogini, WEMTOP, and the Situation Facing Assetless Women in the Project Areas

The Project in India

Several excellent sources recount the steps taken to establish WEMTOP in India and specific program results, in terms of describing the institutions involved and the courses given both to trainers and to village women. The one most clearly detailing EDI’s perspective on the problems encountered and decisions made in setting up WEMTOP is a technical paper by Vanita Viswanath, “Building Partnerships for Poverty Reduction.” Two especially helpful sources on the same subject, written from Udyogini’s perspective, are a pamphlet entitled “A Brief Overview of WEMTOP—India (April 1991–November 1994)” and “Mid-Term Review of WEMTOP—India.” These articles provide all necessary detail on the goals and step-by-step development of Udyogini and the grassroots management training program in India.

The final evaluation, written by the team headed by Catherine Neill, offers a detailed assessment of WEMTOP’s accomplishments and some residual problems exhibited in the summer of 1996. Thus, this report includes only a brief summary of major points in the establishment and preliminary implementation period that pertain to an analysis of the program’s impacts on the grassroots women. It should be noted, however, that one element is missing in these various tools for evaluation of the program: a systematic analysis of the institutional development that may or may not have occurred within the 22 VOs that collaborated with Udyogini. Although not the focus of any of these other sources, or of this impact assessment targeted at the village women, it could be an important additional indicator of WEMTOP’s value. But in the absence of complete information on the VOs, this line of research can only be indicated.

Returning to WEMTOP’s background: EDI established the three-year pilot program based on a series of assumptions about improving the income-earning capacity of assetless women in India. Research suggested that in the usual package of supports provided by VOs and other donors to microenterprises where such women might be engaged, management training was relatively underemphasized, while
provision of credit, marketing assistance, skills training, and other technical back up support and training in specific skills or use of new technologies were far more common. Thus, management training was chosen as the missing component that WEMTOP could provide. This was to be a package-completion approach, particularly significant where women already had other interventions supporting their work. Training was to be offered in the pilot stage to train NGO staff in GMT enterprise support teams (TEST). In turn, the by-now trained staff would train assetless women. There was also a provision to test and refine the curriculum during the three-year pilot period.

EDI had decided that, to maximize the assumption of responsibility for and ownership of the new concept, it should be introduced separately in each country. A steering group (SG) of local experts on microenterprise and gender issues would be established to decide the modality of the Indian program, assisted by a project coordinator. In India, the SG reviewed information on microenterprise programs and held workshops to ascertain the training needs of the VOIs involved in the survival economy and with the women, and to find out the specific needs of the women themselves. In October 1991, a training needs assessment workshop (TNA) was held. One workshop outcome was the revision of WEMTOP’s goals to redefine the target group as “illiterate landless women in the rural areas and assetless women in the informal sector in urban areas.” In addition, and more important, training was to include a commitment to women’s empowerment. Such traditional business-management subjects as accounting were to be combined with nontraditional subjects such as leadership development. Thus there was a significant broadening of project goals from the initial EDI “specific increase in income generated.”

At the project design workshop held in India in early 1992, the target group was further described. These were to be women at the lowest level of the economy, the survival sector. They would need a full packages of supports, including access to credit, skills training, and help with marketing. Along with these factors, the women might also need services such as child care and counseling. Ultimately, even with all these things provided, they might not all be fully capable of being or becoming entrepreneurs, with enterprises as their main income source. Thus, GMT in India was targeted to those who are the most difficult to help because of their poverty, their family situation, and their own lack of successful management experience. Such women, as other studies have definitively shown, are much more difficult to reach effectively. Those to be trained lived in three of the poorest states within India: Rajasthan, Bihar, and Orissa.

In the months following the TNA workshop, the steering committee explored possible choices for the partner training institution that would oversee the project’s activities. It proved difficult to find one VO or other institution with the expertise needed to provide both the traditional business management and the human resource development training implied in the now broadened objectives. Ultimately the committee chose three PTIs: Pradeep Kashyap Team (PKT) for Western Rajasthan, Development Dialogue (DD) for Bihar and Orissa, and the National Institute for Entrepreneurship and Small Business Development (NIESBUD) for Eastern Rajasthan. Forty VOIs were chosen and sent to two to three staff members for train-
ing. These trainers were supposed to train approximately 1,000 women (who had already been working with the VOs from which the trainers came) during the pilot period. It was still necessary to have one organization to nationally manage the first TEST and subsequent GMT offered to women at the grassroots level, and to oversee revisions and adjustments to the program during the pilot period, so a new nonprofit organization was registered on July 9, 1992, with headquarters in New Delhi. This was Udyogini.

By November 1994, when a midterm evaluation was conducted by a committee made up of representatives from Udyogini and the three PTIs, two of the PTIs had completed their training of trainers and one was almost through. GMTs for grassroots women were underway for the two PTIs that had completed their TESTs; the third would hold GMTs as soon as its TEST was done. The evaluation was thorough and rigorous, and its recommendations elaborate. From the perspective of this study, however, the items that are particularly significant in analyzing impacts are the following.

1. The assumption had been made that GMT was the missing component in the package of services offered to poor women by the VOs. Udyogini found, however, that VOs that had an interest in, and understanding of, the situation facing poor women—and that also provided a package of services such as access to credit, skills training, and marketing assistance—were rare in the poor states that had been targeted. In many cases, the VOs whose staff was trained did not have a package in place and GMT was offered to women who then also needed other forms of support in order to set up enterprises. Fully 50 percent were not involved in savings or credit schemes, while only 37 percent were involved in marketing. These figures changed after the TEST and GMT, especially in regard to collective product marketing, which only 36 percent had done before. This meant, however, that women who had previously had a package of services (to which GMT would be the one essential, additional factor) were in the minority.

2. Because of the choice of three PTIs, each with a different outlook and background, the training that was developed was not consistent across all TESTs. No uniform manual of training had been prepared.

3. The time it took to establish the PTIs, select the VOs, finalize the structure of Udyogini, set up and carry out the TESTs, and embark on the GMT was much longer than had been envisaged. Because initial GMTs had just been completed for two PTIs and the third was in the middle of its GMT, the full impacts of the training would be difficult to ascertain when a final evaluation of the pilot project was carried out, since this was mandated to occur in early 1996.

4. As mentioned above, the three PTIs stressed slightly different components in their training, but across the board, there was no adequate training in enterprise management skills, especially in “project selection and preparation, credit mobilization and management, accounting, bookkeeping and marketing.”
As a result of the self-evaluation, the PTIs revised their training materials and carried out further training of the VO personnel. A second round of grassroots training was provided, beginning in November 1995. This training is ending at the present time. By the end of June 1996, 22 VOs had participated in WEMTOP. Their trainers were expected to have trained 1,089 women in the two phases.35

Grassroots Women in Orissa, Bihar, and Rajasthan

The second major piece of background information in doing an impact assessment is the situation that the participants faced in their daily lives and work. This situation determines their needs, expectations, and business experience, all major factors in the type and extent of impact that will be experienced from training. As mentioned above, Udyogini chose three of the poorest states in India, which also happen to be regions where women face very difficult conditions. Before the specific condition of these women is discussed, however, the overall situation for Indian women has to be briefly presented against a background of the economic situation in the country.

India is making substantial strides in its economic development but remains a vast country with a very poor population. In a land area of 3,288,000 square kilometers, 898.2 million people live with an average per capita annual income of US$300.36 Over the last 20 years, the structure of the Indian economy has been changing from a primarily agricultural base to one increasingly dependent on industry and the service sector. In 1980, 38 percent of the gross domestic product (GDP) was produced by agriculture; by 1996, 30 percent of the GDP came from agriculture, 28 percent from industry, and 42 percent from the service sector.37 The majority of the population is still engaged in agricultural activities, however, and poverty is widespread. In 1995, it was estimated that 38 percent of the urban population and 49 percent of the rural population lived below the poverty line.38 Poverty is routinely calculated by setting for each country (and for the states within it) an income figure representing what it costs to buy adequate food and other items necessary for survival. Those who do not receive this income fall into the poverty level. The figure for India in 1996 is variously calculated at Rs 11,000 for a family of 5.5 (US$324)39 or a “corrected” figure of Rs 12,250 (US$360). Some scholars have argued that this means of estimation is flawed (for example, because different people need different amounts of food to be healthy). An alternate measure is the United Nations Human Development Index (HDI), which is calculated on the basis of life expectancy at birth, educational attainment, and income. According to this measure, India ranks 134 out of 174 countries.40

India is a democratic republic governed by a parliamentary regime. From the date of independence in 1947, it followed a path of centrally planned development, with the government continually making efforts to support the weaker sectors of the population and provide incentives to all sectors of the economy. Recently, however, a much stronger emphasis has been placed on privatization of government-run enterprises (and those in which the government had an interest) and encouragement of the private sector. Although the principal focus has been firmly
on the formal sector and industrial growth, the government has recognized the importance of agriculture and, more recently, the informal sector in which such a large percentage of the population is involved. In India, some 90 percent of the working population is self-employed—that is, partially or completely dependent on income earned by either home-based work producing garments, textiles, and other products; small, petty trading and vending; the provision of services; or manual labor in agriculture, construction, catering, laundry, and so forth. At least 60 percent of this group are women. Indeed, Indian government statistics show that 94 percent of the working female population is self-employed. These women often do not appear in the “economically active” classification produced in national statistical reports on the economy.

The Indian government assists people in the informal sector through various programs run by different ministries and agencies, and through the work of numerous NGOs financed by external donors now active throughout the country. In 1987, the prime minister of India established the National Commission on Self-Employed Women and Women in the Informal Sector, the task of which was to study the socioeconomic status of women in these work areas and recommend policies to improve their lives and work. In 1988, the commission submitted its report, which, among other things, called upon the government to set targets for women’s development at the local level and recommended that the government actively initiate and maintain a network of grassroots organizations like village-level women’s groups. Nonetheless, the situation for Indian women in the informal sector in 1996 remains extraordinarily difficult, especially at the poorer levels of society.

Throughout recent history, women had not been treated as equal members of Indian society. Governed by men in both Hindu and Muslim societies, women had few rights or privileges, and many obligations. Married at a very early age (12 or younger in the countryside), they are expected to do all the domestic work and contribute to the economic production of the household as well. For most women, owning land or other property is impossible, as these are controlled by their husbands. Indeed, women have such an inferior value to the family that girl babies are often unwelcome. As a result, one of the ironic outcomes of the Indian campaign to reduce fertility is the unbalancing of the sex ratio through the growth of abortion clinics in large towns and cities. Women go there for amniocentesis and, if the examination indicates a girl, an abortion. The United Nations Development Programme (UNDP) has developed two measures to show the relative status of men versus women in a given society. The first, the Gender-related Development Index (GDI) takes the HDI and adjusts it for the relative equality of males and females on its three indicators. Thus it looks at life expectancy, educational attainment, and income. In this dimension, India ranks 99 out of 130 countries.

In India, if 100 percent equals the country’s aggregate personal income, women earned 19.2 percent of this total in 1995. Regarding literacy, if 100 percent equals the total number literate, women were 35.2 percent of that group. In school enrollment at the combined primary, secondary, and tertiary levels, women represent 45.8 percent of those schooled. Women are, of course, much better represented at the lower levels of education: 90 percent of school-age girls in India
received primary schooling in 1992, while only 32 percent of appropriately aged girls attended secondary school.46

The second UNDP index is called the Gender Empowerment Measure (GEM). It concentrates on economic, political, and professional participation, looking specifically at differentials between males and females with regard to earned income; share of jobs classified as professional, technical, administrative, and managerial; and share of parliamentary seats. According to this measure, India is ranked 101, falling below Bangladesh, Sri Lanka, and the United Arab Emirates.46 Women are heavily disadvantaged in their economic roles throughout India. Although women in poor families are universally occupied with more than domestic work in an effort to feed, cloth, and shelter their families, few find paid employment or are registered as economically active. Only 28 percent of women in India were considered to be economically active in 1994, while 84 percent of men were considered to be active.47 Of these, 78 percent of the so-called economically active women are involved in agriculture, 10 percent in industry, and 12 percent in services. Again, women commonly occupy the worst-paid and lowest-status jobs. As elsewhere in Asia, most of the poorest people are in the rural areas, and women form a substantial proportion of the poorest of the poor, especially women whose husbands have died or migrated and deserted them.48 Nor has the major reform of Indian agriculture, the Green Revolution (which in the 1960s and 1970s introduced a new, higher-yielding strain of rice, better farm technology, irrigation, and chemical fertilizers) particularly benefited women. There is more call for women’s labor as increasing yields demand more weeding, yet this is a rather negative development. Women are most in demand in areas where landowners have, because of the increased productivity of rice, evicted their tenants and resumed farming themselves. Where the demand for women workers has increased, their wages have not. “In fact, the household incomes of landless agricultural laborers are lower where there are higher concentrations of women workers because women are normally paid much less than men.” Women work longer hours in the fields and have higher workloads than men but only get 40 to 60 percent of male wages. They are given the most labor-intensive tasks: weeding, transplanting, and harvesting.49

Women in the three regions included in the WEMTOP project face extremely difficult conditions (although in other states in India, by any of the indicators used, matters are equally severe). The average annual real GDP per capita (PPP$) for 1992 for India as a whole was Rs 1,230 (US$34), but in the three states of this study it was substantially lower: in Bihar, Rs 640 (US$19), in Orissa, Rs 896 (US$25), and in Rajasthan, Rs 961 (US$28). Women continue to be in an even worse economic situation than men. In 1985, women’s agricultural wages in Bihar were 80 percent of male agricultural wages. In Orissa, they were less than 70 percent of male agricultural wages and in Rajasthan they were 50 percent of male agricultural wages. In all cases, the women’s share of wages had fallen, most dramatically in Bihar. On the other hand, women’s participation in agriculture had increased but because of economic hardship, rather than because higher wages are now offered or greater profits are possible.51 Women’s participation as nonagricultural, wage-paid laborers was low in all three areas. In Orissa, 28 percent of rural women were paid workers,
as were 13 percent of urban women; in Rajasthan the figures were 15 and 11 percent, respectively. Women's relative share of wages has improved over the intervening 10 years but, except in Bihar, they are not equal to those of men. Even in Bihar, the average wage level is extremely low. Table 2 provides some major indicators of the situation as it specifically affected women, according to the 1991 census.

Conclusions: Considerations for Impact Assessment

Women in Orissa, Bihar, and Rajasthan who are in the marginal end of the informal sector occupied with field labor, piecework at home, or small enterprise activities are poor, largely illiterate, and, for the most part, without experience of a successful or lucrative income-generating activity. They survive by their labors, but "survive" is the operative word. For a large proportion of women, basic income is generated by agricultural activities—as laborers or sometimes on family plots—rather than by production, trade, or service work. Women chosen to be GMT targets are found among the lowest caste and class groups—the so-called scheduled castes and tribes who epitomize the desperate struggle to find enough to feed the family faced daily by the poorest women. Thus the grassroots training is being offered to that set of women who are most difficult to reach, in a setting where poverty is extremely widespread and where the economy is struggling to grow and develop. In such a setting, even higher per woman costs for successfully helping them establish viable, sustainable enterprises may be more easily justified than where credit, marketing assistance, and training are offered to women who already have a track record of success and have had previous business training and experience.

The midterm evaluation report points out that in these three areas, it was extremely difficult to find VOs that had a package of components to offer to women in these social groups and this lowest economic category. Often, GMT was given to women while they were simultaneously being helped to establish groups that could run businesses and/or at least cooperatively sell their produce or services. Thus the intended completion effect of GMT is further challenged, because it is one of a set of components being introduced to a group of women with little experience, no training, and no resources of their own. On the other hand, this does not mean that there are no impacts, just that the changes observed come from the combination of interventions. Thus it will be very important to try to find cases where a package had previously existed, to compare with women who had had no supports of any kind before being offered the GMT.

The midterm evaluation also points out that training offered by the three PTIs differed at least in the original TESTs and therefore in the first phase of GMT training. It is necessary, then, to compare women trained by the three PTIs systematically to see if impacts also differ because of the different emphases in the offered training. Similarly, attitudes, orientation, and staff capability will differ among the VOs, so care must be taken to consider whether GMT has different effects when taught by personnel from different nongovernmental organizations.

Finally, GMT pilot training was completed relatively recently; indeed, the new phase was not yet completed when this survey was carried out. The nature of this
data does not permit reliable analysis of long-term trends. We cannot see what will develop for the participant women over the next few years, based on this training experience. Furthermore, women who had the second round of training have had a more balanced program, because the PTIs adjusted their TESTs and subsequent GMTs after the midprogram review critique. These women could show greater impacts, once the same amount of time has elapsed, than do the majority of women considered here, who had the first wave of training. But given the timing of this study, we will be unable to show this potentially different level of impact. Finally, it is worth reemphasizing the impossibility—in the short time period since training began—of ascertaining all the results that GMT may have achieved. This study may underestimate—or overestimate—the WEMTOP program’s value, because we are capturing the immediate short-term effects. What we can do in this study, however, is isolate evidence of impacts that appear just after training, which should be further explored after 5 years (and again after 10 years) to see which have deepened or widened or instead diminished or disappeared. Only then will a full picture of GMT’s significance be obtainable.

Analysis of the Economic Impacts of GMT

Introduction

This section presents the analysis of potential GMT economic impacts emerging in the data. The sociodemographic and family economic characteristics of the two subsamples—trainees and match women—are discussed in the Profile of Survey Respondents (see below). The respondents’ own individual income from all economic activities and their patterns of expenditures, savings, and assets ownership are also explored. Significant differences between them are reviewed in order to control for these in later analyses. Thereafter, the businesses in which the women in the sample are principally involved are studied with regard to their activity, history, profitability, marketing, and employment patterns. The amount and kind of training and other interventions, other than GMT, supporting their economic activities or their empowerment that women may have received is studied as well. GMT trainees are also queried as to the amount and kind of training they received in the WEMTOP program. In this largely descriptive presentation using bivariate comparisons, we attempt to identify similarities and differences within the two samples (GMT and match) that may affect conclusions on potential impacts of GMT.

Beginning with the subsections Economic Impacts of GMT—Preliminary and Controlling for the Influences of Variables other than GMT, we assess the differences in the principal economic dependent variables of the study between the two groups: individual income, savings patterns, enterprise profits, business capability (measured by ability to keep accounts and stock records), marketing, and employment patterns. The contribution of other important independent variables such as geographic location, education, age, and other sociodemographic characteristics;
of business characteristics such as area of activity and length of time in existence; and of existing prior business supports such as savings and credit schemes or earlier business management training to these differences are assessed in relationship to the possible effects of GMT. Again the analytic method in these sections is also primarily through bivariate comparisons, because these present clear profiles of difference and similarity in data, which is often qualitative and nonlinear in the distinctions measured.

In subsections GMT and Financial Services–Impacts and Interactions, and GMT and the Poverty Line, we look specifically at two major concerns in this study: to what extent does GMT add to the impacts of access to credit and savings schemes and does the impact on the poorest women trained differ from that on the better-off section of trainees? Can we show that financial services have a specific effect on the profitability of the enterprises in which the women are engaged and on their overall individual incomes from all their activities and that GMT increases this profitability and income received in a discernible—and measurable—fashion? Because of their struggle for survival, do women below the poverty line have a lower capacity than women above this line to utilize GMT to improve their businesses and thus engender increased profits and income? These sections also use bivariate analysis to preliminarily present the evidence of possible GMT impact.

In Multivariate Analysis of the Relative Contributions of Major Independent Variables to Individual Income, we explore through regression analysis the weights (and therefore relative importance) of the different variables that have emerged in the bivariate analysis to have a significant impact on individual income of the respondents. Given the lengthy exploration of the data in the earlier sections, here we can test only those variables that have shown a significant relationship with profitability of enterprises, change in profitability, and overall income. This section allows us to demonstrate more clearly the evidence for the importance (or lack thereof) of GMT compared to other factors.

Profile of the Survey Respondents

The completed full survey was comprised of 430 respondents divided between 219 trainees and 211 match women. The trainees were divided further into several subgroups for detailed analysis: by PTIs (because the training offered by the three differed in the first phase of GMT), by state (as there are different economic and social problems in each region), and by training group (before the midterm evaluation—"old"—and after the GMT revision—"new"), and by attendance record (women who attended some sessions but did not complete GMT, women who attended all sessions).

West Rajasthan: 160

1. Old-session GMT trainees: 64
2. Old and new trainees who had not completed the course: 9
3. Trainees from the new GMT session: 36
4. Match: 60
East Rajasthan: 76
1. Old-session GMT trainees: 45
2. GMT trainees who had not completed the course: 37
3. Match: 31

Orissa: 134
1. Old-session GMT trainees: 44
2. GMT trainees who did not attend all sessions: 256
3. Match: 90

Bihar: 60
1. Old-session GMT trainees: 30
2. GMT trainees who did not attend all sessions: 186
3. Match: 30

The sociodemographic characteristics of the GMT participant respondents and the match group were quite similar (see table 3 below). More of the GMT women lived in or near urban areas, but the difference was not statistically significant. Most of both groups (about 70 percent) were in villages not too far from large towns or cities. There was no significant difference in language or ethnic group and the overwhelming majority (about 95 percent) of both groups were Hindu. There were more Kshatriyas among the GMT women and fewer women in the scheduled castes (SCs), but overall, the difference between the two groups were not large and did not seem to indicate any factor affecting the kinds of impacts that were studied. More than 80 percent of both groups were married and most of the rest were widowed, with a small handful of women not yet married. There was no significant difference in the two groups in terms of who headed their households. More than 61 percent said their husbands were the household heads, while the rest said their mothers-in-law (or in the case of those widowed, their sons) were. Almost two-thirds of both groups of women were 40 years old or younger.

Access to education, considered one important determinant of women’s receptivity to change and ability to manage new ways of doing things, was not differently distributed. In both groups, more than 80 percent of the women had no schooling, while 10 percent of the GMT women and 7 percent of the other women had had a few years of primary school. A smattering of women in both groups—slightly but not significantly more numerous among the GMT women—had had more schooling. Among those with no formal education, however, there was a significant difference.

GMT women were significantly more likely to be literate than were the match women. GMT women were also more likely to have more children, girls as well as boys, in school, but this difference was not meaningful because they also had more
children per woman than did the match group. GMT women came from slightly larger households, on average.

In terms of assets and income differences were found, some of which were statistically significant (see table 4 below). More than 90 percent of both groups lived in houses owned by their husbands (or other head of household). About 85 percent of both groups of women lived in small thatched-roof houses with walls of mud or brick, but GMT women were significantly more likely to live in a *pukka* house (one which is of good quality) than were the other women. GMT trainees were more likely than match women to have electricity in their homes, but this difference is considerably diminished (and no longer statistically significant) when controlling for the fact that GMT women were slightly more likely to live in an urban (as opposed to semiurban or rural) setting. About 80 percent of both groups said their families owned the land on which their homes stood. Sixty-two percent of both groups had land for cultivation, but GMT families were more likely to have larger amounts of land available to their families. GMT families were also more likely to own livestock (such as cows or water buffalo) and small ruminants (sheep, goats, and pigs). About 80 percent of both groups reported their families did not keep poultry and approximately 95 percent said they had no cart or vehicle, but GMT women were more likely to say that someone in their household owned a bicycle. Jewelry is the only asset that the women owned in their own name; it is the traditional form of savings for women. GMT women were more likely to own jewelry, but among all women who did own jewelry, match women were just as likely to own valuable pieces (worth more than Rs 1,000, or US$29).

Overall, however, the families of GMT women were not significantly wealthier in terms of annual income than those of the match women, although the pattern of difference is complicated. GMT women on average reported higher family incomes than did their match counterparts. Using a poverty-line figure of Rs 12,250 (US$360) for a family of 5.5, the individualized annual income on the poverty line would be Rs 2,227 (US$66). In our sample, GMT women had an average family size (household under one roof) of 6.9 and the match sample, of 6.0. Dividing family income by household size to arrive at individualized family income, we found the average income for GMT women to be Rs 4,283 (US$126), almost twice the poverty-line income. Median income for GMT women in the sample (calculated the same way) was Rs 3,714 (US$109). In contrast, the average income for the match women was Rs 3,907 (US$115), and the median income was Rs 3,050 (US$90). The difference in favor of the GMT women's families is not statistically significant. This is still true when the top 25 percent of women in each sample are compared in terms of enterprise profits from their own businesses, and when the two samples' larger groups of women with lesser profits are compared: GMT women do not have significantly higher individualized family incomes. Furthermore, when we compare our two samples in terms of income earned by the individual women themselves from all their economic activities, GMT women earn on average only slightly more annually than do the match women—Rs 5,589 (US$164) to Rs 5,320 (US$157), again not a significant difference. The greater percentage of GMT families owning certain assets and slightly larger GMT family incomes raises the question of whether the two samples are as similar
as intended in the selection of the Match sample. Closer examination of these differences, however, suggests that these differences do not compromise the comparison of the two groups in terms of training impacts. Certain of these differences are misleading: most of both groups do not own a bicycle, for example, but GMT families are more likely to. Since they are also significantly larger in size on average and more likely (but only slightly so) to be in a semiurban or urban area where bicycles are more common, this greater likelihood of bicycle ownership does not necessarily indicate much greater wealth. Similarly, the greater likelihood to own larger amounts of land among GMT families is somewhat offset by the fact that GMT families are also on average larger. Greater likelihood to own jewelry may be misplaced in calculating family wealth profiles, since this is an asset that women may buy with greater profits from their enterprises and could potentially indicate the success of GMT or its impact on a business—whether or not due to the training of its owner—rather than a preexistent difference in family economic status. In fact, GMT women are somewhat more likely to report having purchased jewelry in the period since GMT was first offered than are match women, although not significantly so. (The majority of both groups of women say they did not purchase any assets in this period.) Since family income is not significantly higher in the two groups and since both groups of women exhibit largely similar sociodemographic profiles, we concluded that the samples were comparable for the study’s purposes.

One interesting side question emerges in this comparison of family income of the two samples, which is not directly related to the impact of GMT but could raise some concern about WEMTOP’s achievement of its stated purpose to work with the poorest marginalized group of women. The average income reported in the survey data does place both groups above the poverty line. This finding is somewhat misleading, however. Wide variation exists among Indian states regarding the extent to which families fall below the national poverty-line indicator. Thus, in Bihar in 1992, 56 percent of the population lived below the poverty line (defined in 1996 as the annual income of a family of 5.5 of Rs 12,250 (US$354) or, dividing by the average number in the household, at Rs 2,227 (US$66) per capita. Similarly, in Orissa, almost half of the population were in poverty, while more than a quarter of Rajasthan’s population were in this income group. In our sample, women from Bihar had family incomes averaging Rs 5,981 (US$176) or, divided by the average household size, Rs 980 (US$29) per capita, falling below the poverty line. In Orissa, similarly, the average family income was below the poverty line, with a family average income of Rs 7,603 (US$224) or, divided by the average household size, Rs 1,383 (US$41) per person.

In contrast, women from Rajasthan had family incomes on average of Rs 30,943 (US$910) or, divided by the average household size, Rs 4,358 (US$128) per person, and were above the poverty line. Rajasthan, thus, is the only state where the sample comes from above the poverty line. This is consistent with a much smaller proportion of the Rajasthan population in general falling below the poverty line than in the other two states. Furthermore, the finding is still misleading, because of the problems of using a standardized poverty-line family income as a measure. The Rajasthan GMT women come from very poor families, but this comparison to the poverty line makes them and their families appear relatively affluent. Without
knowledge of how many children and how many adults live on this income and what their actual food needs are, what food prices actually are, and the costs and type of housing available in the specific local area, it is impossible to know how "poor" these women are. Furthermore, this measure compares all families, including those with only one person working or no persons working, to families where two or more persons work, as in this combined sample (since women were selected for the survey and/or trained in GMT because they were engaged in economically remunerative activities even at a very low level). As a result we get a possibly misleading picture of a systematic selection of the less poor among the poor in Rajasthan. But as long as women being economically active is a criterion, this may continue to happen. It does not necessarily indicate a false skew from the stated project purpose in the choice of GMT trainees. However, this point has to be taken up elsewhere. From the viewpoint of the samples' comparability, in any case, their family income averages are sufficiently similar to warrant the conclusion that, overall, the two samples are from the same socioeconomic group.

To return to the study's direct line of inquiry, match women's families were more likely to contribute a larger percentage of their families' revenues, compared to the GMT women. The latter fact has generally been related to wealth: in most developing countries, the poorer the family, the larger the share of family income contributed by the wife. This may be indicated in our data where the poorer groups contribute a larger percentage. However, age is also significantly and directly connected: the older the woman (up to but not including women above 50 years), the larger the percentage she contributes. (See chart 1: Annual Family Income; chart 2: Individual Income of Women from All Economic Activities; chart 3: Percentage Contribution to Family Income; and chart 4: Poverty and Women’s Contribution to Family Income.)

Looking at the economic activities of the women in both samples, certain significant differences can be found. The GMT women are significantly more likely to be engaged in some form of production, while the match women are more likely to be in trade. About a third of both groups are engaged in agriculture (growing crops or animals for sale without processing the product sold). In addition, GMT women are significantly more likely to work in a group enterprise, while the match women are much more likely to be self-employed, running their own businesses. Finally, the match women by and large started their businesses earlier than the GMT women did. More than a third of the comparison group initiated their present business activities before 1985, while only 16 percent of the women who participated in GMT began as early. Furthermore, 70 percent of the GMT women started their business in 1994 or later, while only 50 percent of the match women started their IGAs in 1994. The start-date difference is a problem in our analysis. A priori, we could assume that businesses started earlier would be more profitable than those started later. In fact, in this sample, average net profit (from the year previous to the survey) of businesses started before 1994 was Rs 1,801 (US$53), almost twice the Rs 908 (US$27) average of businesses started in 1994 or after. In later calculations, this distinct sample difference has to be carefully controlled. (See chart 5: Type of Economic Activity and chart 6: Start Date of Women’s Businesses.)
These differences between GMT and match women indicate certain relevant facts about the two samples. The greater number of match women in trade is a predictable phenomena, since traditionally, women in the informal sector are more likely to be in commercial activities (trading small items or food products) than in any others. In providing GMT, the emphasis of many VOs was on helping women start new businesses or change their old ones, by introducing some new or modified form of production, ranging from making leather goods, to sewing clothes or household linens, to processing rice or other crops. Thus, GMT trainees are significantly more likely to be in production activities than match women. Additionally, one of the significant results of participating in the program (which Udyogini noted in its midterm evaluation report) was the VOs’ promotion of group enterprises as a method of helping the women get established on a financially viable basis. This explains why the match women are so much more likely to be in individual enterprises. Finally, the match sample was drawn from women in economic activities similar to those of the GMT women, but the age of the business was not a criteria. In fact, the enumerators pointed out that women who are found in a random process of seeking out similar businesses tend to be those who have had to work to survive because something has gone wrong in the family: for example, their husbands cannot work or have had major economic difficulties. Thus we are finding women who have a long-term business track record, in the sense that their businesses are viable, even if weak and not very profitable. This contrasts with the GMT sample, which includes a large number of women who may have had no profitable economic activities before they received help from the VO with whom they are affiliated and who, in many cases, only began their current principle enterprises after they had received GMT.

Another complicating factor is that many of the match women also have had assistance from a voluntary organization, although they have not had GMT. In fact, 73 percent had had help of some kind from a VO. In the first section, we explained using a deliberate oversampling in order to assess spread effects of GMT, but this proportion of VO clients was not deliberately collected. In fact, in the area where women received GMT, a significant proportion of the women who were engaged in businesses proved to have some kind of contact with the VOs in the region, although not always in the form of support to their economic activities. It would perhaps have been better to explicitly select a larger proportion of nonclients, to obtain a larger group of those untouched by outside VO interventions. However, this result was not predicted at the outset. It does distort the sample, but in the direction of underplaying, rather than exaggerating, GMT impacts. Thus, this is not primarily a comparison between those who have had interventions of multiple kinds (including GMT) from VOs and those who have existed purely in the informal sector, with no help from sponsoring groups. The comparison group has had some kinds of support, although this may have been in health and family counseling, in empowerment training of some kind, or in some other, non-business-related, activities. In fact, only 22 percent had had some kind of skills training for their business activities, and only 28 percent had had some kind of business management training (although not GMT). The comparison group is thus much less likely to
have had the kind of business supports enjoyed by the GMT women. Perhaps most important, it is significantly less likely to have had access to financial services. The difference is even greater when only those whose businesses were started in 1994 or later are compared. More than 86 percent of the GMT women had received credit from a VO or banking institution or participated in a savings scheme, while only 44 percent of the match women had had this advantage.

The Economic Impacts of GMT—Preliminary

If they exist, the economic impacts of GMT should be evident in changes in individual income from all economic activities of the participants, in profitability of their enterprises and in the increased importance of the women’s income to their families. Three additional variables—how women manage their accounts and stock records, what their employment patterns are, and where products from the enterprise are marketed—will also be examined, as these also may change because of GMT (see table 5).

First of all, examination of the data shows that, while GMT participants had only slightly higher average overall incomes from all economic activities over the last 12 months, once the start date of the business was controlled for, the difference became much more pronounced. Among women who had started their business in 1994 or later, GMT women had a pattern of significantly higher individual income. (See chart 7: Individual Income of Women with Businesses Started in 1994 or After.)

This difference is repeated in a number of other measures. Although GMT women contribute a smaller percentage to the family income than do match women, they are significantly more likely to say that their contributions to their family income have increased. Controlling for start-up date, this difference is even greater.

Regarding the increase in their enterprise’s profitability, the overall average profit earned over the last 12 months of all the GMT women was higher than that of the match women, but only after the outliers are removed. The profile of the two samples needs some explanation. Apparently, enumerators in East Rajasthan included four major women traders in the match sample. These women all had businesses that had been in operation since before 1985, and their average profit was two-and-a-half times that of any of the GMT trainees. They were an inappropriate match for the women selected for WEMTOP training. When these women were included, the average net profit was higher among the match women. Once outliers—the four large-scale traders—were removed, however, the situation reversed. The average net profit for GMT women was Rs 1,169 (US$34), and only Rs 738 (US$22) for the match women. Comparing only those who started their businesses in 1994 or later, this difference again appears with a larger variation (and, of course, with no need to remove outliers). GMT women earned an average net profit of Rs 1,149 (US$34), compared to match women (Rs 327 or US$10). Among those with older businesses (even without removing outliers), the GMT women were significantly more likely than match women to say their profit had increased. (See chart 8: Net Profit over Last 12 Months from Enterprise.)

These differences emerge more clearly when the group of women among the comparison sample who had skills training and some sort of business training from
a VO are compared to the women who had regular GMT preparation. Here the value of GMT is indicated in the fact that GMT women had net profits on average more than three times higher than those of women trained in some fashion, but not GMT. The average income of the GMT women was Rs 1,164 (US$34), while that of comparison women who were non-GMT-trained was Rs 407 (US$12). The Rs 757 (US$22) difference was statistically significant. In this one result, we have evidence of GMT’s potential effect on business performance beyond the regular kind of skills training experienced by clients of the same VO’s who do not get GMT. This should not be overinterpreted, however, and is a point for further exploration in a follow-up study, since we do not know exactly what kind or amount of business training the match women received.

Differences in business management style and marketing also emerge in the data. GMT women are distinctly more likely to keep adequate accounts of their business expenses. Twenty-eight percent of them, in fact, keep complex accounts, including multiple ledgers, while only 9 percent of the match women do this. It was also the case that GMT women were more likely than other women to keep adequate records of their stock. This, too, was statistically significant as all of the match women kept only rudimentary records, while 73 percent of the GMT women did. Of course, conversely, it may be argued that since only a quarter of the trainees kept adequate written accounts, this may be considered a poor showing for a program that emphasizes the importance of such records. Given that these were women illiterate, however, keeping accounts at all is extremely difficult; the greater likelihood that GMT women not only would keep any records, but would manage to keep adequate accounts, seems to reflect positively on the training.

Looking more closely at these results to see if they could be spurious, we found—predictably—that women who had been to school at any level and literate, uneducated women were more likely to keep accounts and records of their stock, as opposed to women who could not read and write at all. Looking at the two groups of women and controlling for their schooling, we find that GMT women are significantly more likely to keep accounts. Eighty-nine percent of educated match women kept no accounts; only 11 percent kept complete accounts. In contrast, two-thirds of the educated GMT women kept accounts, and almost a third of them kept complete accounts. GMT, then, appears to have an add-on effect to education. This impact is further verified by looking at the overall group of women in the sample who had had training in business management. In this group, those trained in GMT scored significantly higher (that is, were more likely to keep good accounts) than women who had had some other kind of business training. (See chart 9: GMT versus Other Business Management Training: Stock Inventory.)

The marketing pattern of the two samples is also significantly different for their enterprises, but, in this comparison, the difference does not indicate that GMT training led to women themselves making choices to seek wider markets. Forty-four percent of the match sample sell their products in villages outside their own, compared to 37 percent of the GMT women. Thirty-four percent of the match women sell only at home or in their local market, while 25 percent of the GMT women do this. Twenty-eight percent of the GMT women, however, sell to, or through, their VO’s, while only 11 percent of the match women do. This, of course, reflects the
greater support for their businesses enjoyed by the GMT women (although taking charge of marketing is not necessarily a good way to help women learn to market their own products most effectively). Significantly more of the GMT women than the comparison women say that they have increased the number of employees. This result, however, seems to be somewhat misleading. In many cases, what happened was that GMT women had gone from working as individuals to seeing themselves as part of a group enterprise. Thus, from this fact alone, the number of “employees” could be seen to have largely increased. This was not the intent of the question, however, and the actual data needed—whether more individuals are hired as a result of an expanding businesses—cannot be ascertained from this survey with regard to group enterprises. Among those in individually owned businesses started before 1994, GMT women were significantly more likely than match women to say the number of employees in their business has increased. However, only 16 percent of GMT women said there was an increase in employees in their enterprise, so that it is not valid to conclude that for most women, GMT led to an increase in employment by their enterprises. Indications exist that GMT may lead to increased business size, resulting in increased employment, but these should not be overstated.

Further differences between the participant and match samples emerge regarding expenditures on family needs. Such a short time has passed since the first GMT that, even if substantial increase in profits were experienced, the GMT women could not have earned enough to make capital expenditures. In fact, they did not buy houses, vehicles, livestock, land, or expensive jewelry. They, however, did do one thing that set them apart from the match sample: they were significantly more likely to save money in a post office or bank, while the match women were distinctly more likely to say they could not save any money at all. Again this is an advantage that might simply stem from their being clients of VOs that had promoted women’s savings for clients with whom they worked before introducing GMT. However, the specific impact of participating in the GMT training can be demonstrated. Match women who were clients of the same VOs as GMT women were significantly less likely to save in a post office or bank account than were the latter. Furthermore, GMT women believed they had more money available for savings than they had before being trained. The greater likelihood of savings, then, would appear to be related to GMT. Again, this finding deserves further testing at a later date for a more definitive interpretation of impact. (See chart 10: Ability to Save Money.)

A second distinction is in reported reasons for increased purchases of food for the family. Both match and GMT women spend more on education than they did earlier in their lives because their children are growing and because they think education is important. Both groups also spend more money now on food, but in the case of the match women, they report spending more money because food is more
expensive or because their families are growing. The GMT women, in contrast, acknowledge that food is more expensive and that their families are growing, but point out that they also have more money to spend, which allows them to get more and better food for their families. This significantly different self-interpretation of why the GMT women spend more on food seems to reflect their perception of their enterprises' greater profitability. Of course, without specific data as to exactly what each spent at the time of the survey on food and what they spent in the previous year, this reported difference must be treated with caution in any conclusions about GMT impacts.

**Controlling for the Influences of Variables Other than GMT**

Up to this point, we have shown that women who have had GMT have experienced distinct advantages in terms of their increased income and in their ability to save, which other women have not had. We have also shown that GMT women increased the net profits of their enterprises and that evidence exists that employment has also increased as a result. These results were demonstrated more strongly than in the pilot survey because of the larger sample, allowing more in-depth exploration of the general trends observed. In effect, then, the principle part of hypothesis has been proven, although not enough time has elapsed for major assets to have been acquired with the increased income. Some inconclusive evidence of improved marketing patterns and improved family well-being also exists.

The question that the earlier report on the pilot survey could not answer was just how much impact was to be attributed to GMT and how much to other factors. The latter include the VOs' own organizational skills, goals, and priorities and the kinds of business supports they offered, such as access to credit. One of the criticisms of WEMTOP was that it did not, as the original plan had specified, work with VOs that had a neat package of similar interventions, including credit, in place. The VOs with whom they did collaborate ranged wildly in their purpose, organization, and prior experience in supporting women's enterprises. The different emphases that the three PTIs adopted in preparing the extension agents to teach GMT may have also contributed to different types or levels of impacts. So, too, would broader factors such as regional or demographic variations among the women who were trained.

What we have been able to show in the first part of our analysis in this section is a priori evidence that GMT did have an impact directly measurable in enterprise profits beyond what other kinds of training and supports had provided. But this needs further exploration. We will now pursue the specific impact of GMT by breaking down the two samples in a variety of complex combinations. First we looked at the effect of being trained in the second phase of GMT, which started only in the end of 1995, as opposed to being in the earlier original group of GMT trainees. The later training took into account the criticisms of the midterm evaluation, adopted a standard package of training materials, and emphasized certain business components more than the earlier training did.

The second-round training was criticized by some for being less effective because too much was crammed in too short a time. However, since it compensated
for some deficiencies in the first program, it might be expected to have more impact than the earlier one. On the other hand, the earlier-trained group had had more time to experience improvements in income and other resulting advantages. Separating the two samples of GMT participants had an interesting result: there were no significant differences in increases in income and net profit from enterprise in the two groups. Nor were there significant differences in the other measures we have discussed so far, except that some retrospective questions were difficult to compare, since the second group was just starting up. Differences between the GMT and match samples remained approximately the same, even when the fact of being in the old or new GMT training was controlled. Thus, the training phase did not significantly affect these results. It may be that the lack of difference indicates the greater impact of the later GMT. This, however, is a conclusion that would have to be validated by a survey taken after a few years have passed.

In contrast, a number of personal and demographic characteristics do have a significant relationship to size of enterprise net profit. One of these, not surprisingly, is the state in which the participants are found. Women in Orissa in our sample experienced a significantly lower average profit than women in the other two states.105 In addition whether or not a woman was in an urban, rural-accessible, or rural-remote area was related to the average level of net profit of enterprise. The highest average profits were found among women in accessible rural communities and the lowest, among the urban women. This difference, however, is better explained by the type of enterprise in which women were engaged. Urban women were significantly more likely to be in trade or commerce.106 Trade and commerce enterprises had the second-lowest average net profit, closely following agriculture (where no processing of the commodity produced is included). The average net profit for these two groups was Rs 668 (US$20) annually, compared to the women with production enterprises who had earned during the last 12 months an average net profit of Rs 2,401 (US$71). These differences were significant.107

The women respondents’ family position also appeared to be somewhat related to size of net profit during the 12 months before the survey, although these findings were not statistically significant. Mothers of household heads enjoyed the largest average net profit, followed by women who were heads of their households. The lowest average net profits were experienced by women who were wives of household heads. Education was also related to profit size, although also not statistically significantly. Educated women received, on average, Rs 1,421 (US$42), while uneducated women received Rs 1,368 (US$40). Among those without formal schooling, some degree of literacy turned out to be a significant factor in predicting to a higher net profit over the past 12 months. Literate although uneducated women received an average profit of Rs 952 (US$28), while illiterate women received only Rs 643 (US$19). It is notable that the average profit for unschooled but literate women is higher than for educated women. This apparent anomaly may result from the fact that that type of enterprise is a much more significant predictor to size of enterprise income. Uneducated but literate women were more likely (58 percent) to be in enterprises engaged in production, while educated women were less likely (44 percent) to be in such enterprises, although, overall, they were more likely to be so
engaged than illiterate women with no schooling. This finding is logical since literacy was promoted by many of the VOs that also were helping women start or expand production enterprises.

These relationships between circumstantial and personal characteristics of the respondents and the size of enterprise profit are predictable. They do not undermine the findings cited above that GMT leads to a greater likelihood of higher profits and overall individual income, except where there is a substantial variation between the GMT and match women in the designated characteristic. As discussed above, the two samples are quite similar in basic sociodemographic characteristics, without significant differentiation between the two groups in the variables that seem to be related to increased enterprise profitability. But such a variation does exist between the two samples, regarding literacy and type of enterprise activity. GMT women were much more likely to be in production-oriented enterprises, the most profitable field. Further exploration showed that GMT women in production enterprises were not more likely to have higher profits than match women in the same types of enterprises. Looking more closely at this initially daunting finding, however, we see that the intervening factor is clearly the age of the business. Women with production businesses started before 1994 (the first year of GMT) had higher average net profits over the past 12 months than other women—a logical finding since these business often had 10, 15, or more years to grow and establish themselves.\(^{106}\) (The mean net profit for women with older business was Rs 1,891—US$56—while women with newer business received an average of only Rs 908, or US$27.) Match women were substantially more likely, as noted above, to have the older businesses. Among women who had production enterprises started in 1994 or later, GMT impacts do appear. Match women in production made an average net profit over the past 12 months of Rs 424 (US$13), while GMT women made more than twice this—Rs 991 (US$29). The difference is statistically significant.\(^{107}\)

Closer examination of literacy in the survey sample showed that there were too few uneducated but literate match women for there to be any reliable interpretation of whether literate women with businesses started before 1994 without GMT made net profits as high as those of literate women with GMT. GMT women without formal education were more likely to have the advantage of literacy—and it was clearly an advantage—because this was part of the interventions package offered by the VOs participating in WEMTOP.

The final major factor intervening in the relationship between GMT and possible enterprise profit and individual income levels is the distinctly different orientation and background of the three partner training institutions. The fifth hypothesis outlined in the first section asked about the relevance for impacts of the difference in type and amount of training offered by the PTIs to the extension agents (and later by the VOs to the village women). Udjoyini had chosen three institutions; one, Development Dialogue (DD), was responsible for the eight VOs located in Bihar and Orissa. This institution had had extensive experience working with women and had done gender training even before GMT. Its first-phase training of extension agents emphasized women’s organizational issues (45 percent of the time), followed by marketing (18 percent) and production techniques (16 percent). Tech-
Nology and skill improvement were not given much attention. The second group, the National Institute of Entrepreneurship and Small Business Development (NIESBUD), worked with seven VOls in East Rajasthan. It had had far more experience than DD in supporting microenterprises, because its overall objective since being founded in 1983 was to promote enterprise development through training and other activities. However, it had little experience in dealing with gender issues before its involvement with WEMTOP. Its first-round training also emphasized women’s organizational issues (43 percent of the time), followed by credit (14 percent), marketing (14 percent), and production (11 percent). Pradeep Kashyap Team (PKT) worked in West Rajasthan. Kashyap, an individual with a strong marketing background, had worked as a consultant for the Department of Rural Development, Khadi Village Industries (where piecework was the primary form of IGA) and for the department of Women and Children in Rural Areas. He was asked to put together a team of people who had considerable experience in dealing with gender issues, which he did. His training, however, was more even-handed than that of the other two groups. In its first training phase for the 6 VOls in West Rajasthan, PKT is reported to have emphasized organizational issues only 29 percent of the time; marketing was stressed 21 percent of the time; production, 15 percent of the time; and credit and finance, 21 percent of the time.\textsuperscript{100}

The major differences among the PTls in orientation and experience, and in the training they offered in GMT, do appear to be reflected in the results. In the first place, DD worked with women who were significantly poorer than the women who collaborated with the VOls supported by the other two PTls.\textsuperscript{111} Average individualized family income for GMT women trained by NIESBUD was Rs 5,940 (US$116); for those trained by PKT, Rs 4,696 (US$138); and for those trained by DD, Rs 1,360 (US$40). In addition, DD women were significantly more likely than the women from the other two PTls’ VOls to contribute a larger share of the household income. Twenty-six percent of the DD VOls contributed 50 percent or more, while only 12 percent of the PKT VOls and 3 percent of the NIESBUD VOls did. This difference is consistent with the DD women’s coming from poorer families. DD was also significantly more likely to support women in trade as opposed to in production, services or agriculture.\textsuperscript{112} (See Chart 11: Partner Training Institution and Family Income of GMT Participants.)

Despite the fact that the women they trained were poorer, DD’s VOls apparently had a significant impact on their clients’ businesses, in part because of GMT but also because of prior programs. DD women were more likely to have had some schooling and, if unschooled, more likely to be literate, although these differences were not statistically significant. DD women were more likely to have access to a credit and/or a savings program than other groups.\textsuperscript{113} They were also significantly more likely to have a savings account in a post office or bank.\textsuperscript{114} In terms of other indicators of how the business was conducted, DD women were distinctly more likely to keep complete and complex accounts, while the PKT women were most likely to have incomplete and fragmented account systems.\textsuperscript{115} The latter finding is related to the heavier emphasis on literacy education shown by DD, compared to the other two groups.
Given the fact that a larger percent of DD enterprises were in the trade area of the informal sector (which is traditionally worse paid than production or service enterprises), average actual net profit of enterprises might be expected to be lower among this group. This was the case. In contrast, NIESBUD was more likely to work with women in production enterprises. Thus, even though it was also the PTI that was significantly more likely than the other two organizations to use GMT to start new enterprises, its clients were also the women who experienced the largest profit from their enterprises. A significant difference existed in net profits received by DD clients as opposed to others affiliated with NIESBUD and PKT, with 70 percent of the DD women making a net profit of Rs 500 or less per year (US$15), while only 24 percent earned a net profit of Rs 800 (US$24) or more.116 Average profits for DD were Rs 579 (US$17), while for NIESBUD they were Rs 2,039 (US$60), and for PKT clients, Rs 1,221 (US$36). The difference in average net profits was statistically significant.117 (See chart 12: Partner Training Institution and Area of Enterprise Activity and chart 13: Partner Training Institution and Net Profits.)

DD women were just as likely as other groups to have an increase in their profits—in fact, three-quarters of the all the PTIs' clients said their profits had increased. Of the three partner institutions, then, DD seems to have provided more business skills, such as accounting methods, to their clients and also to have emphasized access to necessary business tools such as savings and credit. But the organization with the strongest economic gains was NIESBUD, which had the longest track record in small- and microenterprise support, and which, like DD, supported women in production rather than trade, like DD. This suggests support for a reformulated hypothesis 5: it seems likely from this data that the actual orientation and previous record of the PTI (and its VOIs) predicts to differential impacts of the GMT experience.

A final question has to be the extent to which the impacts experienced by the women can be attributed to GMT or, instead, to the overall package of interventions that the different PTIs routinely offered. This is more difficult to explore. Looking only at DD, we find a complication, because the VOIs associated with DD were likely to give GMT to new groups of women who did not have enterprises already established (47 percent of the DD women receiving GMT had enterprises established in 1994 or later, while only 27 percent of the other DD clients had such new businesses). Thus DD clients who did not receive GMT were likely to have a longer business track record, which should indicate higher overall net profits. In fact, however, the GMT clients did significantly better than the non-GMT clients. Thirty-one percent of the former experienced a net profit of Rs 800 or more (US$24), while only 14 percent of the non-GMT DD clients did.118 Furthermore, GMT women were distinctly more likely than other DD clients to have accounts at a post office or bank, while the latter were much more likely to have no savings at all.119 The difference showed just as clearly in the significantly larger number of GMT trainees who said that their net profit had increased greatly, while the other clients were more likely to say their profits increased slightly or had not increased at all.120 This reinforces the earlier finding that GMT clients have a significantly larger net profit than do non-GMT-trained women who have had some other form of business-skills training. (See chart 14: Net Profits of DD Clients.)
Looking at the differences among DD clients, the results of having, as opposed to not having, GMT emerge rather clearly. GMT was an addition to DD, a group that had strong gender-training experience and a long record of working with women in supporting their business activities in some fashion but without systematized business preparation. Adding the business-training component to the package already offered by DD, and orienting the existing savings and credit program to the business side of women’s lives, did apparently produce a considerable difference in enterprise income for the GMT women.

Examining the impacts of GMT on women trained by one of the NIESBUD VOs (as opposed to its other women clients) was difficult; all the NIESBUD GMT enterprises were started in 1994 or later—at, during, or after GMT—while 86 percent of the other clients had started their businesses earlier. PKT clients, however, were not divided in this fashion and GMT impacts are more evident among them. PKT women who were trained in GMT are significantly more likely than other PKT clients to have higher net profits. Furthermore they are significantly more likely to say their enterprise profits have increased and even more likely to say they have access to credit than other clients of VOs affiliated with PKT. Again, then, we have prima facie evidence for contending that GMT does have an add-on effect to existing packages of interventions, resulting in increased income for women who participate in the training. This, together with the earlier finding that results differ depending on prior program and orientation of the PTIs (and VOs), suggests that those promulgating GMT-type training need to work closely with the VOs themselves, to sharpen awareness of the implications of their choices and to develop their skills in effectively working with women’s groups, in order to achieve the maximum impacts from such training. (See chart 15: Net Profits of PKT Clients.)

Ultimately, we are unable to prove or disprove the fifth hypothesis that differences in methods and amounts of training offered in the GMT sessions by the different PTIs lead to different impacts. In all probability, there are measurable variations in the training, but when this report was written, not enough information on actual differences in PTI training courses or in the GMT modules offered was available to enable us to pursue this line of investigation. We did have information on the number of GMTs women attended. This was complicated, however, by the fact that different VOs gave different total-session numbers for what they considered a complete course. Thus the number of sessions attended does not signify the percentage of material acquired across the various VO trainings. Our data showed that most women had been to more than one session, and that the number of sessions attended did not predict to different levels of impacts. Thus those who did not attend all sessions were not significantly more likely to have lower profits from their enterprises than those who did. Further detail on which sessions were missed by women who did not complete the training might produce more information on this matter, but at present it can not be pursued.

Related to whether or not GMT or other interventions produce the greater income and higher profits enjoyed by GMT women as opposed to match women is the question of GMT’s possible “spread” effects. Were the same organization’s other women clients benefiting from GMT through new lessons taught by their extension
agents, who had been trained to offer GMT? Examination of those who were affiliated with one of the VOs offering GMT, but who were not trained directly, does not fully demonstrate such an impact. In fact, women who were not clients of any voluntary organization had, on average, higher personal incomes from all economic activities during the past 12 months than did women who were clients of VOs affiliated with WEMTOP—although they received, on average, lower profits. Neither difference was statistically significant. The difference between GMT and match women in terms of their average net profits was less where match women were clients of VOs although not trained in GMT, which could indicate that the latter group did get benefit from GMT. However, the difference is very small—Rs 105 (US$3)—and statistically insignificant. We have insufficient evidence to draw any conclusions about how much “spread” in fact exists.

**GMT and Financial Services: Impacts and Interactions**

Many observers have identified the single most important factor in supporting micro- and small enterprises as access to credit. As pointed out in the first section, many scholars would argue that credit alone may be the most cost-effective way of supporting women in the informal sector. In the present section, we try to sort out what can be attributed to the impacts of having access to financial services and what is the result of GMT. Unsurprisingly, access to financial services appears to result in significant impacts on profits and income in the data in this survey. Those women who had access to financial services had significantly higher individual incomes than women who did not.\(^{15}\) Furthermore, women who had such access were significantly more likely to have increased their contribution to their household income.\(^{16}\) Most important for this report, such women were also significantly more likely to have a higher net profit from their enterprise.\(^{17}\) *(See chart 16: Financial Services and Net Profit from Enterprise.)*

Looking at the impacts of financial services and GMT, we find that GMT impacts (already observed as significant in the general sample in regard to all these indicators) are considerably greater when these services are made available. Specifically, women who have access to financial services and GMT are much more likely than women with these services but no GMT to have higher individual incomes from all economic activities.\(^{18}\) For women who do not have access to credit or savings schemes, GMT does not have this impact. The GMT women in this latter group are no more likely than their non-GMT counterparts to have higher incomes, although this does not mean their net profits in the past 12 months were not higher (see below).\(^{19}\) Furthermore, GMT participants with financial services are significantly more likely to say their contribution to their household income has risen,\(^{20}\) while GMT women without credit are not. *(See chart 17: Individual Incomes of GMT and Nonparticipant Women with Access to Financial Services.)*

GMT does significantly—and favorably—impact the actual net profit (from their principal enterprise) over the past 12 months of both women with\(^{21}\) and without financial services.\(^{22}\) In both cases women who have had GMT earn larger profits from their enterprises than women who did not have GMT. But for those who had enter-
prises starting before 1994, GMT participants without financial services are no more likely than the comparison women to have experienced an increase in their enterprise revenues. In contrast, GMT women who have financial services and whose business was started before 1994 are significantly more likely to have experienced an increase in their net profit than match women with these services. For those who have access to financial services, we find that the ones who have had GMT have a higher average net profit than those who have had some kind of business training but not GMT. The actual difference in average net profit is Rs 447 (US$13)—a difference only significant at about 75 percent, but an indication of the contribution made by GMT to the impact of financial services. Taking the broader group of women who have access to financial services (not only those who had some kind of business training and credit), the difference in annual profit for those who had GMT as opposed to those who did not is less—Rs 271 (US$8)—but still indicates GMT’s positive impact. Moreover, this amount is 5 percent of the average individual annual income of those women with access to financial services, indicating a discernible improvement over the positive effects of credit alone. (See chart 18: Increase in Net Profit for GMT and Non-GMT Women with Access to Financial Services.)

We then looked at recordkeeping among women who had access to financial services. As might be predicted, women with access to such services are significantly more likely than other women to keep better accounts and better stock inventories. But GMT added on this effect. When we looked at women who had access to credit, we found that those who had GMT training were significantly more likely than the others to keep better accounts and stock inventories. These differences were significant. (See chart 19: Among Women with Credit, GMT, and Ability to Keep Accounts.)

Given that the packages of financial services differed depending on the VO, it is difficult to look more closely at what was the specific interaction of GMT and financial services. One additional important point does emerge. Among those women with businesses started in 1994 or after, there is a clear, significant difference between those who had only savings programs made available to them and those who also had access to credit. This difference does not show up in regard to the net profits received over the past 12 months from the principal enterprise. Both groups of women received higher profits with GMT than without, consistent with the finding reported above. However, looking at the broader measure of individual income received from all economic activities, GMT had an impact on women with access to credit, resulting in significantly higher average incomes for these women as opposed to women with access to credit but no GMT. In the group of women who only had access to savings schemes, this difference is not significant. This suggests (although certainly not conclusively) that GMT may have more of an impact on women’s interaction with credit schemes than with savings schemes. Table 6 demonstrates the relationship among family income, access to credit, individual income, and net profit in the group whose enterprises started in 1994 or later.

WEMTOP was criticized because the VOs with which it cooperated varied significantly in their prior interventions packages supporting women in the informal sector. Because of this, exploring systematically the package completion impact of GMT was impossible. That is, we could not see the complete pattern that would
emerge if the combined GMT program of business and empowerment training in
turn caused programs offering other essential interventions—including full finan-
cial services, marketing help, and skills training—to be more effective.

Seeing the complete pattern is still not possible. However, in exploring the
interrelation of GMT and financial services, we find, in support of the second
and fourth hypotheses,¹⁹⁰ that GMT makes programs offering financial services
more effective, leading to larger profits, greater changes in profit, and a larger
percentage contribution to family income than was possible when GMT was
not provided. A priori evidence suggests that this impact is greater for those
who have access to credit than to those with other types of financial services,
such as savings schemes only.

**GMT and the Poverty Line**

GMT’s effectiveness for the poorest group of women is a final consideration. Other
scholars have demonstrated that loan impact, measured by financial performance
indicators, “rises in direct proportion to the level of preborrowers’ income or, put
otherwise, it was relatively smaller if the borrower was close to or below the pov-
erty line.”¹⁹¹ Referring to this theory, we have attempted to explore whether a dif-
ference exists in our data on GMT impacts between women above and below the
poverty line. Here we found some interesting results: women in families below the
poverty line do not, on average, have higher individual incomes when they have
had GMT. In contrast, GMT trainees in families with incomes above the poverty
line are significantly more likely than other non-GMT women in the same economic
class to have higher average individual incomes.¹⁹² However, significant differences
in the net profits from their enterprises are found among GMT women below the
poverty line, when compared to others in the same economic class but without this
training.¹⁹³ In other words, poorer GMT women have significantly higher profits
than others in the poverty class. This is also true for women above the poverty
line.¹⁹⁴ Looking at this more closely, it appears that the difference between the aver-
age net profit of the GMT women whose family incomes fall below the poverty line
and similarly poor women without GMT is not as great as the difference between
better-off GMT women and their cohort that had not had GMT: the latter group
showed a difference in average net profit of Rs 729 (US$21), while the former group’s
difference was only Rs 443 (or US$13). It would appear that the GMT impact was
greater on the wealthier women, but an alternate interpretation is perhaps more
meaningful. In fact, the net difference in profits for the women in poverty who had
GMT was 34 percent of the average of their individual family income—Rs 1,285
(US$38)—while among the better-off women, this difference was only 17 percent,
indicating that GMT may have been more important for the poorer group.

Remembering that in poorer families women are likely to provide a larger share
of the families’ revenues, a more important question may be, which group is more
likely to have increased the share they contribute to their families’ incomes? Here
we find that GMT-trained women are significantly more likely than non-GMT-
trained women to have experienced an increase in the amount they can contribute
to their families whether or not they are below¹⁹⁵ or above the poverty line¹⁹⁶ but the
likelihood of having achieved this greater share in family income in fact is greater in the below-poverty-line group. More of the below-poverty-line GMT women experienced this increase (34 percent versus 23 percent). (See chart 20: Women Below the Poverty Line and Profits and chart 21: Women Above the Poverty Line and Profits.)

In addition, GMT-trained women both above\textsuperscript{146} and below\textsuperscript{147} the poverty line are significantly more likely to save some of their income. This difference is, in fact, substantially greater in the below-poverty-line group, where 58 percent of the untrained women do not save, while only 20 percent of the GMT women say they do not. In the wealthier category, fewer GMT women say they do not save (16 percent), as does a smaller proportion of the match women (40 percent).

Family poverty, then, does have an effect on the impacts of GMT, but not in the sense of negating or directly undermining those impacts. It is true that family income predicts to profitability; the wealthier the family group, the more likely the woman is to earn higher profits from her enterprise.\textsuperscript{148} However unfair this may seem, it is only logical. Women from wealthier families do not have to contribute as much to the welfare of their families in the form of food, clothes, education, or other household expenses. As a result, they have more money to invest in their businesses, whether in purchasing stock, in buying raw materials for processing, or in paying for an appropriate market stall or shop or whatever. Nor is it surprising that these women also are more likely to experience an increase in their profits. (See chart 22: Family Income and Net Profit from Enterprise and chart 23: Family Income and Increase in Net Profit.)

These differences could indicate that GMT was more effective—that is, had a stronger impact—in the better-off (but still poor) group. Given what we have shown above, however, this is misleading. Although the profits earned from their enterprises are lower for poorer GMT women, these smaller profits seem to be more important for the poorer women than the larger ones are for the better-off women. From the viewpoint, then, GMT could be seen as more effective for the women below the poverty line.

The net effect of these findings is that we are unable to prove either the null hypothesis or hypothesis 6 itself.\textsuperscript{149} Ultimately, however, the purpose and goal of a project may be to reduce poverty, or to maximize the return to the money invested, or both. As Paul Mosley points out,\textsuperscript{150} these are neither the same nor entirely consistent goals. But, if poverty reduction is the objective, than we can show that GMT appears to increase the ability of women to earn an income from their economic activities even when they start from the poorest sector of society. For these women, this increase is even more significant, relative to what they otherwise would have earned, than it is for women above the poverty line. And this impact is above and beyond what access to credit alone can do.

**Multivariate Analysis of the Relative Contributions of Major Independent Variables to Individual Income**

In this subsection, we use “individual income” as a measurement of each woman’s
income from all economic activities in the 12 months preceding the survey. This is
the income that the GMT program of business management skills aims to increase,
in order to improve individual and family well-being. Increased net profits for the
principal enterprise in which each woman was engaged were subsumed within
this figure. The principal findings emerging in the bivariate analysis discussed above
included the following major variables having significant impact on family income:
age of business, size of family income controlled for family size, access to credit,
and GMT. These are included in this multivariate analysis. In the following subsection,
we report the results of various statistical tests, including analysis of variance
and regression and correlation tests. Descriptive statistics, including measures of
central tendency and of dispersion, graphical, and contingency tables are provided
in earlier sections of this report. Here we propose ways to assess whether or not
there are significant performance differences between GMT and non-GMT women,
and to build a model that best explains and predicts the women’s performance
(that is, total income from all economic activities).

Analysis of variance (ANOVA)

In order to verify to what extent—if any—respondents’ performance (that is, individual
income) scores were similar, one-way analyses of variance (ANOVA) were
carried out using three key criteria: access to credit, age groups of respondent, and
business start date. Other criteria were considered, including education, number of
children, and woman’s household status, but these were dropped as they corre-
lated significantly with age. With each criterion considered separately, the ANOVA
summaries were as follows.

1. Considering “credit” as a partition criterion: the generalized F-test is significant
   (F=22.304; p-value=.0001). The mean “individual income” score for those who
   had access to credit and those who did not have access to credit were 6,095.1
   and 4,549.6, respectively, and were significantly different.
2. Considering “age group” as a partition criterion: the generalized F-test is sig-
nificant (F=5.812; p-value=.033). Accompanying group means and Fisher’s least
   significant different (LSD) measures suggest significant performance differences
   among respondents of different age groups: the “younger” (that is, the less
   experienced), the lower is performance.
3. Considering “start date” as a partition criterion: the generalized F-test is signific-
ant (F=8.554; p-value=.0001). The mean “individual income” score was signifi-
cantly different from one start date to the next. Accompanying group means
   and Fisher’s LSD measures suggest significant performance differences among
   respondents with different business start dates: the “younger” the business, the
   lower the performance.
Regression and correlation analysis

We proposed a multiple linear regression model where "individual income" was the dependent variable and "status," "contribution to family earnings," "family per capita income," "access to "credit," "age of respondent," and business "start date" constitute the set of independent variables. Models that included other variables (such as location, business types, and PTI) were considered, but were later dropped as they turned out not appropriate for regression analysis because of the way they were constructed.

Using all six variables, our objective was to determine the extent and significance of both the partial and combined effects of these variables on individual income. Our analysis is based on the following assumptions.

- Respondents’ income scores, noted $Y_i$'s, are assumed to be randomly distributed. Each expected income score $Y_i$ is defined as the sum of $\beta_j X_{ij}$, where $\beta_j$ are regression coefficients and $X_{ij}$ (j=1,2,3,...,k) are the (k) independent variables included in the model. The coefficients of regression $\beta_j$ are population parameters; they are noted and referred to as (b) in the sample. Each value $b_j$ (b_1, b_2, b_j...b_k) is a partial regression coefficient, as it reflects the partial effect of the j-th independent variable on the dependent variable, individual income, when the other independent variables are included in the model and are held constant.

- Each observed income score exceeds or falls short of a corresponding predicted income score by a quantity known as "error term" (when the entire population is considered) or "residual" when the sample is considered. These residuals, noted $e_i$, are assumed to be normally distributed; admittedly all individual income scores $Y_i$ are also normally distributed.

- The error terms/residuals are assumed to have a constant variance; hence the individuals' income scores $Y_i$ are also assumed to have a constant variance.

- The residuals $e_i$ are assumed to be uncorrelated; so are the income scores $Y_i$.

- The expected and predicted income score corresponding to each respondent, when both GMT and non-GMT individuals are considered, is defined as $Y_i = b_1 X_{i1} + b_2 X_{i2} + b_3 X_{i3} + b_4 X_{i4} + b_5 X_{i5} + b_6 X_{i6}$, where $Y_i$ is the predicted income score corresponding of the i-th respondent.

The following hypotheses was considered for testing as part of our overall regression correlation analysis.

- a direct relationship is anticipated between "status" ($X_1$) and "income"
- a direct relationship is expected between "credit" ($X_2$) and "income"
- an indirect relationship is anticipated between "start date" ($X_3$) and "income"
- a direct relationship is expected between a woman's contribution to her "family income contribution" ($X_4$) and "income"
- a direct relationship is expected between family "per capita income" ($X_5$) and "income"
- a direct relationship is expected between "age" of respondent and "income"
The most satisfactory generalized income model, when both GMT and non-GMT respondents were included, follows.

\[
Y_i = 399.35 + 844.361X_{1i} + 1908.31X_{2i} - 418.03X_{13} + 869.6X_{14} + .192X_{15} + 637.19X_{16}
\]

\[
S_{bi} \quad (468.60) \quad (448.07) \quad (207.47) \quad (250.18) \quad (.05) \quad (298.03)
\]

\[
R = .487; \quad F = 11.619 \quad (p < .01)
\]

To arrive at this model, we took into consideration several criteria, including the significance of the F-values, the magnitude of the coefficient of multiple determination, both the sign and magnitude of the partial regression coefficients, and the significance of the t-values. A brief discussion of the critical findings associated with this model follows.

1. Accompanying Durbin-Watson and collinearity diagnostics tests suggest no concerns for either autocorrelation or multicollinearity.

2. The generalized F-statistic of 11.619 (p < .01) is indicative of a significant relationship between at least one of the set of independent variables and the dependent variable, “income.”

3. The coefficient of multiple correlation is .497; that is, all variables together account for one-fourth of all the total variations in income. The variables that accounted for most of the total variation in income are, in order of importance, credit (beta weight = .259), per capita income (beta weight = .221), and contribution to family income (beta weight = .204).

4. Two distinct models are obtained for GMT and non-GMT, respectively, simply by assigning to \(X_i\), alternatively the values 1 and 0. The sign associated with the partial regression coefficient for “status” is consistent with expectation. The average marginal income of GMT participants is significantly higher than that of non-GMT group members.

5. The partial regression coefficient associated with credit (variable \(X_i\)) is positive and significant. Consistent with expectation, as for “status” above, two distinct models are obtained respectively for those who had access to credit and those who did not by simply assigning to \(X_i\), alternatively the values 1 and 0.

6. GMT participants with access to credit are significantly more likely to have higher earnings than non-GMT, regardless of whether they have access to credit.

7. The partial regression coefficient associated with “start date” (variable \(X_i\)) is both negative and significant, suggesting that the “younger” a business, the less likely its ability to yield significantly higher income to its owner.

8. A significant and positive relationship is noted between “contribution to family income” (variable \(X_i\)) and “income,” suggesting that the size of a person’s contribution to family earnings is a significant predictor of that person’s income level. Earlier findings, however, indicate that there is a significant reverse relationship between the size of a person’s contribution to total family earnings and the degree of the family’s poverty. More specifically, those who contribute more to their family are more likely to come from poorer family than those who contribute less.
9. The partial coefficient of regression attached to “per capita income” (variable $X_1$) is significant and positive. Consistent with expectation, the higher the per capita family income, the higher a respondent’s personal income.

10. The partial coefficient of regression attached to “age” (variable $X_2$) suggests a positive relation with individual income: the older the respondent, the higher her ability to earn more.

In sum, then, the regression model presented here demonstrates in more precise terms what bivariate analysis has shown above: GMT has a significant positive impact on income (and net profits) separate from positive impacts associated with age, access to credit, family income, percentage contribution to family income, and start date, as well as size of family. In looking at relative impact, credit has the largest impact, followed, in descending order, by family income, percentage contribution to family income, start date, GMT, and age. That GMT has less of an impact than credit and family income is predictable: training in itself can not overcome all other major factors. As many observers have pointed out, the single most important factor for the individual entrepreneur appears to be having access to credit. Absence of credit is a major barrier in the informal sector to women who wish to develop profitable businesses. Absence of GMT-type training does not present itself as being of equal importance but it is, nonetheless, quite significant. This study has shown—within all the limitations imposed by research timing and the inconsistent background of those trained—that GMT in itself appears to have a positive economic impact.

The Empowerment Impacts of GMT

Introduction

In this section, we explore the potential impacts of the noneconomic dimensions of GMT. Two principle areas are examined: quality of life (as measured by use of time) and status and authority (as measured by decisionmaking authority within the family). A third area explored is changes in patterns of women’s participation in their communities. Finally, following the assessment of empowerment impacts, we look at trainees’ own evaluation of the impacts of GMT on their businesses and lives overall.

Quality of Life

Do women, in fact, lead easier or pleasanter lives because they have been trained? Specifically, do they have more time for their own needs, including time to rest or try to further their own education (as well as that of their children)? A potential result of GMT could be changes in the way women do things in their daily lives. Although this was not the focus of this study’s hypotheses, changing time use is
closely related to well-being and, for this reason, is a relevant consideration for evaluations of GMT impacts. What is most interesting in the survey data with regard to time use is that, in fact, GMT does seem to be related to women changing how they spend their time. Match women are much more likely to say that in the last few years they have not altered how they use their time. Only when it came to spending time on their economic activities did the both the match and GMT women say they had increased the amount of time they spent. Thus there was no significant difference between the two samples on this point, although the GMT women were still likely to have changed more—and to spend more time working—than did the match women.

In the other dimensions of time use, GMT women were significantly more likely to report changes they had made that did not improve (or did not necessarily improve) the overall quality of their lives or that of their families. Thus they reported, in significantly greater numbers than the match women, having less time for the care of their children,\textsuperscript{192} spending less time now preparing meals for the family then they had done before GMT,\textsuperscript{192} spending less time on other domestic chores such as fetching fuel and water,\textsuperscript{192} and having less time to rest than they had before.\textsuperscript{192} Match women were significantly more likely to say they had not altered their normal patterns regarding these things. The differences between the two groups was statistically significant. In addition, but in a positive direction, the GMT women were significantly more likely to say they now spent more time on their own education and development.\textsuperscript{195} Very few match women made such a claim. (See chart 24: GMT Women’s Change in Their Use of Time and chart 25: Match Women’s Change in Their Use of Time.)

From one viewpoint, then, GMT training may not have made women’s lives any easier and may even have made them harder. If anything, they spend more time on their work than they ever did. Match women are also forced to spend more time on their economic activities, but the GMT women have focused even more than non-GMT women and are also more likely to say they have less time to rest now than they did previously. Thus their quality of life is worse in the sense that they work more than they did. Additionally, a possible negative consequence for the family is that GMT women have less time for their children than they had before. From another point of view, however, GMT women appear to be beginning to make choices to concentrate more on their IGAs—and women studied in many other cases have said that they want to work more days, even for longer hours, because this is the only way they can help their families. Whatever criticism might be leveled at GMT for making their lives harder, generally women appear willing to make the choice for GMT and more work if they have the option.\textsuperscript{196} Furthermore, the GMT women appear to have one advantage over their non-GMT counterparts: they can and have spent more time on themselves in the broadest sense—that is, on their own development and their own education.

How do the GMT women themselves feel about changes in their quality of life resulting from GMT? They do not say they resent the loss of time for their family or for their own rest. Only a few of the GMT-trained women say their husbands have been hostile, critical, or even abusive because of the changes in their family lives.
(three in this study), but a more significant number (14 percent) say that they have been criticized by relatives, friends, or neighbors because they are not doing things in the traditional way anymore. This criticism, however, does not seem to be related to a negative perception of GMT impacts—95 percent of women, in fact, say that GMT training helped improve their self-confidence. Perhaps more to the point, there is a significant difference between the GMT women and other women who did not have this experience with regard to their outlook for the future. The GMT women are significantly more likely to believe that things will get better for them and that they themselves can play a role in making their future better. The match women are not pessimistic, by and large, but they are less likely to believe that things will get better or that they can do anything about the course of future events. It would seem, then, that GMT has had a mixed impact on quality of life, although this impact is seen as positive by the women themselves.

GMT and Status and Authority

Women’s ability to make decisions about the conduct of matters in their lives, work, and community is a matter of considerable significance. In other words, have the women trained by GMT have increased their power and authority in their lives and their capability to make decisions about matters important to them as a result of the training? Capability comes both from being trained to know what questions they need to ask and how to process and evaluate the information they receive once those questions are asked. These skills result from schooling and also are the product of broader empowerment socialization, which teaches women how to collaborate in groups and how to pool their information to garner maximum insights into what is happening in their communities and lives, and what they can and should do about it. But training may have an effect that goes beyond these factors.

As pointed out in the second section, women in India score very low on international scales that measure relative equality to males in their access to good food, decent health conditions, education, wage-paying jobs, equal pay, and positions where they would have power over decisions in their homes and communities. This is particularly true in the poorest communities in the poorer states, such as Rajasthan, Bihar, and Orissa. Here women’s subordinate and dependent position has been consolidated over centuries. In these states, rapid and far-reaching economic development, which might have begun to break the hold of tradition by providing strong economic incentives to draw women out of their traditional roles, has not yet taken place. One of GMT’s major objectives is exactly this concern: to empower women so that they begin to take control of their own lives. The analysis in this section tries to find out if GMT has helped women redefine their roles and given them the capability to make decisions about their own work and within their families and communities. From the outset of such analysis, certain problems arise. The first is again the question of elapsed time. Less than a year has passed in some cases since women completed their GMT. During this time, most have experienced a clear set of economic benefits, either because they started a new enterprise or
because the old one became more profitable. But it would seem more difficult to change the mindset of people so quickly. Thus we must question whether any major departures in outlook and behavior would be discernible at this point.

A further concern goes in the opposite direction. Part of GMT teaches women that they should have a stronger role in decisionmaking in all aspects of their lives: taking such a role is good, while being subservient to the males in their lives—fathers, brothers, husbands, sons—is bad. The problem, then, is that the women believe that the trainers, who administer the monitoring and evaluation questionnaires, will approve of them if they can exhibit signs of moving to be “good.” The village women have every incentive to show change in the direction of becoming empowered, because that is what they “know” they should be doing. This is also true regarding their reports on economic improvements and financial gain, but less problematic, because it can be more easily seen by the trainer or enumerator to be true or false. It is much harder to check the more intangible realms of decisionmaking, authority, and family position. Because of this, the PM&E, which is an excellent way to teach women about how to evaluate their own progress and what standards to use, is less valuable as a tool for measuring actual impacts. The PM&E questionnaires are very likely to elicit answers indicating dramatic change, although they can, in extremely important ways, add a dimension to understanding the changes occurring in the women’s lives and attitudes to a more objective study like this one.

This survey asked some questions similar to the PM&E, but generally asked about different points and followed up with more in-depth queries. It did not present a graded series of choices with which the respondent had to rank herself. The impact questionnaire might therefore have been seen as more objective than the PM&E questionnaire. But the residual problem remains: had the GMT participants so internalized the goals of the training with regard to empowerment that they responded to any questions about it with answers reflecting what they knew they should be doing, as opposed to what they in fact were doing? This section examines their responses compared to those of the match women to see if the actual, as opposed to desired, state of things can be learned through this questionnaire. The most central concern of this inquiry into empowerment is the actual increase—or potential decrease—in the power a woman has over her own life, within her family, and within her community. This was explored by examining who made decisions on important matters such as the use of the income that women earn, the kind of work women do, the education of children in the family, and the food the family eats.

In the pilot study, the data indicated that GMT may have had a major impact on women’s authority, specifically to the use of her income. Somewhat to the surprise of the investigators, however, the final survey showed no overall significant difference between the GMT and the match women in making decisions on the use of their income, although GMT women were slightly less likely to let their husbands decide for them. Nor did any significant impacts emerge in any of the other areas of family decisionmaking. On the whole, then, GMT did not appear to have a major effect at this point in time on whether or not women gained power and status in the decisionmaking process. Time, of course, may be more crucial here than in earlier parts of this analysis where profits and income were considered. More time may be
needed to change attitudes and family behavior patterns than to increase income. Thus the real impact of GMT on status may be registered over the next several years. (See table 5, in which the current degree of relationships between decisionmaking on income and choice of work to major independent variables is presented).

Pursuing this, we explored the data from all possible perspectives with regard to decisionmaking. Certain important points emerged. First of all, a number of prior factors (on which the most variation in the responses was found) are important determinants of who makes the decisions in the family, especially regarding the use of a wife’s income. In our sample, differences between ethnic and caste groups and regions did not seem to be primary. On the other hand poverty, access to financial services, education, and literacy were very important. Predictably, women with schooling are significantly more likely than women without to make their own decisions or at least to participate in decisionmaking about their incomes. So too, among the uneducated, were literate women. Access to financial services had a similar relationship: women who had access to credit were more likely to make their own decisions or do so in concert with their husbands and much less likely to let the latter take this role. Family income or poverty also was significant but in the opposite direction. Women whose families earned less than Rs 2,200 per capita were much more likely to make their own decisions or do so in combination with their husbands. Women from families above the poverty line were much more likely than the poorer group to let their husbands decide how their incomes should be spent (although the majority did not, even in this group). The latter finding is, when reconsidered, quite predictable, because women’s income was much more central to the family revenues in poorer families, and, as a result, they had greater leverage. Additionally, the differences among PTIs turned out to be critical. DD women were much more likely than women trained by agents prepared by the other two PTIs to make their own decisions. Only in two areas did we find GMT with a significant impact on decisionmaking (and then only on the use of a woman’s own income). In the first test, poorer women (those below the poverty line) apparently had to be more independent and GMT did not change this. But among the better-off women, once they had had GMT training, they were significantly more likely than the others in their income group to make decisions alone or with their spouses. Thus, GMT seems to have overcome a traditional pattern of the husband’s assertion of authority in the wealthier (but still very poor) group. Second, among women who do not have access to credit, GMT-trained women are significantly more likely to make decisions on their own or with their husbands than are other women. But women who do have access to credit are not significantly more likely to make their own decisions about their income (or participate in them) if they are trained in GMT. They are slightly more likely to make their own decisions if they have GMT, but the difference is not significant. Thus GMT does not override the impacts of having credit; it works with credit, which appears the more dominant factor, and where credit is absent, it may have a similar effect in empowering women. (See chart 26: Poverty and Decision on Own Income; chart 27: Women above the Poverty Line, GMT, and Decision on Own Income; and chart 28: Women Without Access to Credit, GMT, and Decision on Own Income.)
Community Involvement

Another facet of decisionmaking is the extent to which women become more active and assertive in their communities because of empowerment training. In fact, GMT was strongly related to the likelihood of taking an active role in community decisions. Trainees were much more likely than other women to do this. The other factors, so important in regard to family decisions, did not seem to be as crucial here. Neither the amount of education nor the degree of poverty affected the likelihood of women taking part in community decisions. Most women in the subgroups did not take part in community politics. But adding GMT as a factor again began to distinguish among the women. Thus GMT women both above and below the poverty line were significantly more likely to take part in community decision making than their match peers. The one complicating factor here is a decisive correlation between PTI institution and community action. DD was far more likely to encourage women to take part in their community decisionmaking and clients of their VOs were much more likely to do so. GMT does have a significant impact on the likelihood of women to take part in their communities' political decisionmaking process. Taking DD alone, however, GMT has no significant impact. Obviously the prior history of the VOs associated with this PTI in emphasizing empowerment means that GMT did not play an innovative or decisive role in this regard. This underlines the role GMT did have for the other organizations, where empowerment was not given the same emphasis. (See chart 29: GMT and Community Action; chart 30: Women in Poverty, GMT and Community Action; chart 31: Women Above the Poverty Line, GMT and Community Action; and chart 32: Among PKT and NIESBUD Clients, GMT and Community Action.)

GMT Clients' Perception of Empowerment Impacts

The final question is, how did the trained women themselves rate GMT in terms of its impacts on them? Table 6 shows how women responded to questions about what GMT had done for them, and are indicative of their overall evaluation.

Looking at this table, we find that the village women themselves credit GMT with having had a major influence on their lives. Almost all of them credit GMT with having resulted in a moderate or a large increase in their incomes. Most of them believe that GMT helped them learn to manage their businesses better, how to cost and price their goods, how and where to market them, and how to select different businesses if necessary. Nor did they automatically say “yes” to each question. Only half said GMT helped them manage their workers better—a realistic response, since most did not have paid employees but worked on their own account with family members (or with a group). Further validation appears in the substantial variation among the three PTI women’s groups’ responses, which bears out the three groups’ known differences in orientation and interventions. For example, DD women were significantly less likely to say that GMT led to a substantial increase in their income, and instead said it had produced a moderate increase. (Again, remember that most DD women remained in trade rather than going into production as many clients of the VO of the other two PTIs had done; thus they experienced
lower profits). They were also significantly less likely to say they had learned how to produce a better product, since they were not in production. DD women were also significantly less likely to say they had gained in terms of getting more power in their families, increasing their role in family discussions, or learning more about how women generally can influence the community—again this had already been a major theme of their VOs before GMT. In contrast, both PKT and NIESBUD women were much more likely than DD women to assert that GMT had helped them gain power and influence in their families and given them new ideas about how women can change their environments.

Conclusion

WEMTOP was implemented in three of the poorest states in India. In Bihar in 1992, for example, 56 percent of the population lived below the poverty line, (defined for the rural population in 1996 as the annual income for a family of 5.5 of Rs 12,250 (US$354) or, dividing by the average number in the household, at Rs 2,227 (US$66). Similarly, in Orissa, almost half of the population were in poverty, while more than a quarter of Rajasthan’s inhabitants were in this income group. In our sample, women from Bihar had family incomes averaging Rs 5,981 (US$176) or, divided by the average household size, Rs 980 (US$29). In Orissa, the average family income was Rs 7,603 (US$224) or, divided by the average household size, Rs 1,383 (US$41). Women from Rajasthan had family incomes on average of Rs 30,943 (US$910) or, divided by the average household size, Rs 4,358 (US$128). Only in Rajasthan, then, were the respondents on average above the poverty line. Thus, overall, the survey looked at extremely poor women, about half of whom were included in the WEMTOP training project. The difficulty of successfully carrying out the goals of such training—to improve the performance and profitability of women’s businesses and to empower them in their daily lives and work, given the trainees’ poverty—is clear. The women at whom the training was aimed are in the marginal sector of the economy, struggling for survival. What, then, can training—or any other intervention—accomplish in the short time period allotted for the pilot phase in situations where poverty is this severe and where resources generated must be instantly consumed for the sake of family survival?

WEMTOP and EDI have argued that the poorest women can be helped to improve their lives by increasing their ability to generate an income and improving their status and power in their family and community. WEMTOP and EDI have assumed that intervening by adding this training to other programs supporting poor women’s economic activities is an effective use of the resources required to carry out this undertaking. This study has explored in depth what a program of training in business techniques, together with empowerment training, can achieve in a three-year period, by looking at GMT’s impacts on the village women who participated, in terms of their income and their enterprise performance, their family and individual well-being, and their status in the family. The hypotheses tested and the findings from this study are presented below. It should be noted, however,
before looking at these results, that the timing of this study was not optimal for full evaluation of project impacts. EDI needed to evaluate the results of WEMTOP's pilot period before further decisions on the use of GMT could be made. But GMT had only been started in late 1994. Many of the trainees in the early training phase had received their training less than a year and a half before the survey was conducted. Thus the full measure of possible impacts cannot be made, because insufficient time has elapsed for them to have been completely internalized. Our results may either overstate the results, since these are fresh and the women are still reacting to the novel experience of this kind of training and this intense attention from their trainers. Contrarily, this investigation may understimate the results of GMT, since these may grow over time, producing deeper patterns of differences in the management of businesses and resultant performance and profitability. Thus, the conclusions presented here come with a warning. These are preliminary findings that should be used as the basis of further tests, in order to determine what GMT can or can not really achieve.

The analysis of the survey data has provided evidence supporting many of the hypotheses; others either have been disproved or cannot be addressed fully. Regarding the first hypothesis, the original concern was to show whether GMT combined with other types of supports had a positive impact on the poor women who received the training, measured by increased incomes, increased savings, increased family and individual assets, and improved family well-being in terms of more and better food and more education. The results indicated that, combined with other types of interventions, GMT did lead to increased individual income for the women. In addition, the overall average profit of all the GMT women’s enterprises was significantly higher than that of the match women. Comparing only those who started their businesses in 1994 or later, this difference again appears with an even greater variation. Furthermore, GMT women whose businesses were started before 1994 were significantly more likely to say their profit had increased than were the match women with older businesses.

No evidence was found of increased family assets as a result of GMT; most women had not purchased houses, land, livestock, or even jewelry in the period since the training began. But there was evidence that GMT women were now able to contribute more to their families—and a greater percentage of the family income—than before they had had the training. GMT women were significantly more likely to say that their contributions to their family income had increased. Controlling for the startup date of the enterprises, this difference was even more pronounced. GMT women were also more likely to have money to save and, in fact, to open savings accounts. Differences in business management style and business performance also emerged in the data. GMT women were distinctly more likely to keep adequate accounts of their business expenses.

The second and fourth hypotheses were much more difficult to deal with. They explored whether or not GMT itself has a package-completion effect; that is, whether or not it led to improvements in income, increases in employment, expanded markets for the enterprises, and improved access to credit and extension services beyond those the existing package could provide. Because WEMTOP chose to work with 3
partner training institutions with very different outlooks, orientations, and raisons d'être, and because these 3 worked with 22 VOs that were extremely varied in nature, there was no consistent package of interventions offered to the GMT women in the period before they were trained. Many VOs that joined the project had not previously supported women's economic activities, so women who were trained were being introduced to a systematic way of conducting a business. In the regression model presented in the third section, we demonstrated that evidence exists that GMT had a significant positive impact on income (and net profits), separate from positive impacts associated with age, access to credit, family income, percentage contribution to family income, start date, and size of family. In looking at relative impact, credit had the largest impact, followed by family income, percentage contribution to family income, start date, GMT, and age. That GMT has less of an impact than credit, family income, and start date is predictable: training in itself cannot overcome all other major factors. Just as many observers have pointed out, the single most important factor for the individual entrepreneur is access to credit. Absence of credit is a major barrier to women in the informal sector who wish to develop profitable businesses. Absence of GMT-type training does not present itself as being of equal importance, but nonetheless it is significant. This study has shown, within all the limitations imposed by the research timing and the inconsistent backgrounds of those trained, that GMT in itself appears to have a positive economic impact.

Concerning the specific parts of the second hypothesis, GMT can be shown to have increased net profits of the enterprises—a major finding. No evidence, or at least misleading or incomplete evidence, exists for the other components. For example, GMT is positively associated with access to credit. However, this results from the women's having been selected for GMT, which was part of the overall program provided to them. Access to credit cannot be said to have resulted from the training itself; instead, it was part of the training package. Thus, GMT women did indeed benefit greatly from their greater access to credit, but it is not true, as stated in the hypothesis, that GMT training itself leads to credit. Regarding employment, again the results are misleading. On the surface, the data show that GMT women were much more likely to report having increased the number of employees in their enterprises. But some confusion existed among women whose enterprise activities had been transformed into group enterprise work through GMT as to whether there actually were more women employed now in the same work. Women who worked in individual enterprises were also confused in their interpretation, but the significantly higher number of GMT women who reported increasing the number of people hired does lend cautious support to the hypothesis that increased employment resulted from the GMT training. Concerning expanded markets, the results show that GMT women were more likely to have changed their marketing pattern and to sell beyond their home villages. However, this again resulted from participating in the program, and not from the training itself. The results came from VOs' marketing of the women's products, not because they learned to seek new markets. For the questions regarding employment, credit, and marketing patterns, then, the findings are interesting but do not prove or disprove the hypotheses.

Concerning the fourth hypothesis, GMT impacts do go beyond the results of
access to credit or savings, according to the findings. Among women who have access to financial services, the difference in annual profit for those who had GMT as opposed to those who did not is Rs 271 (US$8), which is a small amount but still indicates GMT’s positive impact. Moreover, this amount is 5 percent of the average individual annual income of those women with access to financial services, a discernible improvement over the positive effects of credit alone. An interesting corollary finding is that GMT is more likely to have a positive impact on women with access to credit than on women who do not have access to credit but who participate in savings schemes. This result—indeed the whole question of the relationship of financial services and training—deserves further exploration in a study that has access to baseline data and a group of trainees with credit and savings schemes where the interest rates, terms of repayment, and so forth are known.

The third hypothesis dealt with empowerment. We asked whether GMT led to increases in women’s status and authority in family decisions or in participation in community politics. Analysis of the data did not indicate support for GMT’s having a major discernible positive impact on women’s decisionmaking power or family status, or both. There are a number of prior factors that proved to be much more important determinants of who makes the decision, especially on the use of a wife’s income, than GMT. In our sample, differences between ethnic and caste groups and regions did not seem to be primary. On the other hand, poverty, access to credit, education, and literacy were very important. Predictably, women with schooling are significantly more likely than women without to make their own decisions, or at least to participate in decisionmaking about their incomes. So, too, among the uneducated were the literate women. Access to credit had a similar relationship. Women who had credit were more likely to make their own decisions, or do so in concert with their husbands, and much less likely to let the latter take this role. Family income or poverty also was significant, but in the opposite direction. Women whose families earned annually less than Rs 2,200 per capita (US$65) were much more likely to make their own decisions or do so in combination with their husbands. Women from families above the poverty line were much more likely than the poorer group to let their husbands decide how their incomes should be spent (although the majority did not allow husbands this control, even in this group). Even this finding, when reconsidered, was quite predictable, because women’s income was much more central to the family revenues in poorer families.

Only in two areas did we find GMT having a significant impact on decisionmaking (and then only on the use of a woman’s own income). In the first test, poorer women (those below the poverty line) apparently had to be more independent; GMT did not change this. But the better-off women, once they had had GMT training, were significantly more likely than others in their income group to make their own decisions, alone or with their spouses. Thus, GMT seems to have overcome a traditional pattern of husband’s assertion of authority in the wealthier (but still very poor) group. Second, among women who did not have access to credit, GMT-trained women were significantly more likely to make decisions on their own or with their husbands. But GMT-trained women who do have access to credit are not significantly more likely to make their own decisions about their income, or to
participate in them. They are slightly more likely to make their own decisions if they have GMT, but the difference is not significant. Thus GMT does not override the impacts of credit; it works with credit, which appears the more dominant factor, and where credit is absent, it may have a similar effect in empowering women. Of course, the timing of this study may be extremely significant here, because changes in attitude and in family behavior may lag behind increases in income that have resulted; such changes may gradually strengthen as years pass.

Regarding action in the community, the results indicated that GMT did affect the likelihood of a woman taking an active role in community decisions. Trainees were much more likely than other women to do this. The other factors, so important in regard to family decisions, did not seem to be as important here. Neither amount of education nor degree of poverty nor access to credit affected the likelihood of women taking part in community decisions. Simply put, most women in any of the sub groups did not take part. But adding GMT as a factor again began to distinguish among the women. Thus GMT women both above and below the poverty line were significantly more likely to take part in community decision making than their Match peers.

The fifth hypothesis dealt with differential impacts that might result from training being given in different ways and with different emphases by the three PTIs. In fact, the midterm evaluation had criticized this variation and called for a revision—specifically, for a greater emphasis on business skills such as accounting to be introduced in the second phase of training. In this study, however, we could not test this hypothesis, because the women themselves could not give us information on exactly how they were trained, or even the exact times allotted for different parts of their training. However, we did find one interesting fact: type and orientation of PTI predicts to impacts. To take just one result: a larger percent of DD enterprises were in the trade area of the informal sector, traditionally worse paid than production or agriculture, and they came from poorer families overall; as a result, the average actual net profit of enterprises was lower among this group. In contrast, NIESBUD was more likely to work with women in production enterprises. Thus, even though it was also the PTI that was significantly more likely than the other two organizations to use GMT to start new enterprises, its clients were also the women who experienced the largest profit from their enterprises.

In the empowerment area, however, the results were reversed, with DD women already being far more “empowered” than women from VOs that were clients of the other two PTIs. When DD was removed from the sample, GMT did have a significant impact on the likelihood of women to take part in their communities’ political decisionmaking process. Taking DD, alone, however, there was no significant impact for GMT. Obviously, the prior activities—which emphasized training women in empowerment—of the VOs associated with this PTI meant that GMT did not have an innovative or decisive role in this regard. This underlines the role GMT did have for the other organizations where empowerment was not previously given the same emphasis.

Finally, the sixth hypothesis dealt with the extent to which GMT would have greater impacts on women who were poorer than on women who were slightly
better off. The findings were quite revealing, although this hypothesis could not be proven as stated. GMT women had significantly higher profits than other women above or below the poverty line. Looked at more closely, the difference between the average net profit of the GMT women whose family incomes fell below the poverty line and that of similarly poor women without GMT was not as great as the difference between better-off GMT women and the cohort that had not had GMT (the latter showed a difference in average net profit of Rs 729, while the former showed only a Rs 443 difference). From this perspective, GMT impact appears to have been greater on the wealthier women, but an alternate interpretation is perhaps more meaningful. In fact, the net difference in profits for the women in poverty who had GMT was 34 percent of the average of their individual family income (Rs 1,285 or US$38), while among better-off women, this difference was only 17 percent, indicating that GMT may have been more important for the poorer group.

Remembering that in poorer families women are likely to provide a larger share of the families’ revenues, a more important question may be, which group of women is more likely to have increased the share they contribute to their families’ incomes? Here we find that GMT-trained women are significantly more likely than non-GMT-trained women to have experienced an increase in the amount they can contribute to their families, whether or not they are below or above the poverty line—but the likelihood of having increased their share in family income is greater in the below-poverty-line group. In addition, GMT-trained women both above and below the poverty line are significantly more likely to save some of their income. This difference is, in fact, substantially greater in the below-poverty-line group.

Family poverty, then, does have an effect on GMT impacts, but not in the sense of negating or directly undermining those impacts. It is true that family income predicts to profitability; in other words, the wealthier the family group, the more likely the woman is to earn higher profits from her enterprise. Nor is it surprising that these women also are more likely to experience an increase in their profits. These differences could indicate that GMT was more effective—that is, had a stronger impact—in the better-off (but still poor) group. Given what we have shown above, however, this is misleading. Although the profits earned from their enterprises are lower for the poorer GMT women, these smaller profits seem to be more important for the poorer women than the larger ones are for the better-off women. Looked at from this point of view, then, GMT was more effective for the women below the poverty line.

As the Hypothesis Summary (see table 1) shows, GMT appears not only to increase net profits and individual incomes, and but also to increase political participation rates for women trained in the program. The economic impacts are not as significant or as important as those registered simply from having access to credit, but GMT does seem to enable women with access to credit to obtain higher net profits in their principal enterprise (and overall individual incomes) than those who do not have credit. Decisionmaking is more definitively affected by access to credit than GMT, and GMT does not increase the likelihood of gaining power in this domain. But GMT, rather than credit, is likely to lead to women being to participate in community decisionmaking where women have never had empowerment training
before. Evidence also exists that GMT leads to improved business management practices, measured by accounts and stockkeeping. And there is some evidence that the more profitable businesses are increasing their employees, although this result needs further exploration.

Overall, this summary of impacts suggests that GMT achieved in the pilot phase many of the major goals for the training set forth by EDI in the planning stage. The achievement is impressive, given the choice of VOs with no set package of business supports in place; the selection of three distinctly different PTIs to develop the training; the slow development of training modules, initially inconsistent across the three PTIs; and the late start of the village-level training program, which led to a maximum of only two years having passed since training was started when this evaluation took place. These impact findings are significant and should be used in the fourth phase of this evaluation process, when all the different approaches to evaluating WEMTOP are combined. However, a major caveat needs to be noted: what is presented in this report cannot be considered to be definitive. Until more time has passed, impacts will not have been fully registered. Several years at least will be required before we can know if the women who were trained have permanently changed their patterns of business management and the performance and profitability of their enterprises, as well as their status and participation in family and community decisions. At least this much time will be needed to know if the new businesses established in the training period are viable and sustainable, and if women have been sufficiently trained so they can move into new and more profitable lines of business as needed, change their markets, seek out loans, and so forth.

Difficulties encountered in this report in assessing impacts suggest that in a further training project, it would be best to begin with a baseline study, so that a true experimental and control group could be studied before, during, and after the training took place. Furthermore, it would be desirable to ensure that a known and consistent package of business supports (including financial services) was in place before the training, so that the results of GMT could be more definitively disentangled from other factors, in order to accurately measure the package-completion effect of training for poor women in the informal sector.
ANNEX A
Methodology of Survey and Data Analysis

In the final report’s section on terms of reference and study methodology, we present a brief theoretical justification for basing the impacts study on a field survey of two groups: women trained in the WEMTOP program and “match” women without this training but with similar sociodemographic characteristics, similar occupations, and approximately the same economic status as the first group. This approach, although widely used where no baseline data are available, is not without flaws. For evaluation purposes, EDI requested a survey-based impact evaluation and approved a proposal (submitted in March 1996) that set out hypotheses, the data needed to test those hypotheses, the methods for survey administration and data collection, and the analytical and statistical procedures that would be used to respond to the evaluation’s questions.

The four weeks’ time allotted for the pilot study covered the training of enumerators, survey field administration, coding, and data entry; an additional 20 days was allocated to the principal investigator (PI) for questionnaire refinement and field testing, training of enumerators, preparation of sample selection, data cleaning and processing, analysis, and writing. For the larger study, the enumerators had one month to conduct the survey, while the principal investigator had 30 days to train the enumerators, check on their procedures in the field, clean the data and process it, analyze the results, and write the report.

These relatively short time periods prohibited the principal investigator from conducting in-depth field research, using individual interviews and focus groups, to back up the field survey and did not allow analysis of the myriad, complex results emerging in the data. They did permit, however, a full analysis of the principal hypotheses, presented in the report. Simultaneously (in April 1996), another team was sent out for a relatively brief period to produce an evaluation that stressed institutional aspects of the WEMTOP project and had several short interviews with those trainers, staff members, and women trainees available during the three-week country visit. After both these studies, and after a separate Washington-based analysis of the overall costs and benefits of the project was completed, a summary evaluation that would take into account the findings of the three separate analyses was planned.

We believe that there is not a single “correct” method or design for the evaluation of impacts. Quite conceivably, different researchers will come up with different designs favoring their own methodological and theoretical predispositions. The recent literature on evaluation research includes discussions of a variety of evaluation design methods, each of which has its own merits, values, and problems. Our approach, based on a one-time field survey, was certainly not a “true” experimental design. Most of all, we lacked background information on the population to be studied. No attempt was made to identify an experimental and/or control group.
prior to the project's implementation. No data were collected, other than the PM&E data collected after the first wave of training was already completed. The best we could do was to compare those who benefited from the project with those who did not. Samples of beneficiaries and nonbeneficiaries were then selected separately. Without prior information on the two groups, however, no absolute guarantee exists that the changes we observe are attributable to GMT alone. This is, of course, a limitation we will have to live with in the absence of a more reliable design.

Whenever possible, a complete experimental design should be an integral part of future World Bank projects such as WEMTOP. If planned rigorously at the project planning phase, changes between beneficiaries and nonbeneficiaries could be assessed with a much greater degree of reliability. Not only would it be possible to determine which groups actually are "equivalent" prior to an experimental treatment or project, but it would also be possible to measure potential pretest differences between control and experimental groups that could be taken into account when later calculating the effect of the experimental stimulus. In WEMTOP's case, an experimental design would have been a significant advantage, allowing us to have more control over the independent variables, the units of analysis, and the environment in which behavior occurred. We could have eventually asserted with a greater degree of certainty that differences between the GMT and non-GMT groups are caused by the intervention and stochastic factors. Thus, we would be in a more comfortable position to propose causal statements and to rule out alternative explanations.

We do not suggest, however, that a true experimental design would have been without challenges. Because of the necessity for pre- and posttest surveys, instrument reactivity could have been a problem. Admittedly, measurement errors could have affected the reliability of the differences found between pre- and posttesting. Furthermore, if the instrument used in the two tests is imperfectly reliable, the measurement of differences between the two imperfect measures will be even more unreliable. Again, the researcher must accept some margin of error while trying—even in the more ideal experimental situation—to minimize it.

Having offered these caveats, we present here the steps undertaken to conduct this field survey and analyze the data it produced.

**Questionnaire Preparation**

On pages 10 to 14 in the first section, we discuss the preparation of the questionnaire that was used in the pilot survey and then revised and used in the June–July full survey. Without repeating the specifics about the questions presented in that section, we need to emphasize the following points:

- A set of six hypotheses had been developed and all questions were chosen to provide relevant information for the testing of those hypotheses.
- Questions were organized in five areas: (a) individual profile of the woman and her family, including revenue and assets both on a familial and individual level and change therein since GMT; (b) type and amount of GMT and other training and follow-up; (c) enterprise profitability and change therein since GMT;
(d) status of the women in family decisionmaking and change therein since GMT, together with use of time and change therein; (e) individual evaluation by the women of the GMT impacts.

- The questions developed were drawn from four principal sources: (1) a draft questionnaire prepared by EDI in February and March 1996, (2) comments and revisions on this draft suggested by a variety of staff involved with GMT in India and elsewhere and consultants to EDI who had experience with the GMT program, (3) models of successful microenterprise evaluation surveys prepared by the Bank and by other sources such as Gemini, (4) questionnaires on impact assessment of microenterprise programs tested by this researcher in other studies on Africa, Asia, and Latin America.

- The questionnaire was long (193 questions in final form). Some of these were reformulations to test earlier questions and some were items that the interviewer could check off. The administration time for each questionnaire was 45 minutes to 1 hour.

- Two teams of enumerators (one for Rajasthan and one for Orissa and Bihar) hired by Udyogini met the following requirements: (1) they had field experience in survey administration; (2) they were principally composed of women; (3) they had not been involved in the WEMTOP project at any earlier time; (4) they were fluent in the languages needed where the survey was to be administered; (5) they were not drawn from caste, ethnic, or class groups that would have been perceived as hostile by the population to be surveyed.

- Prior to the pilot survey, the enumerators and the principal investigator discussed and modified the survey, eliminating or adding questions as deemed appropriate. The principal investigator also discussed the questionnaire with Udyogini staff and incorporated their comments and suggestions where possible. The survey instrument was pretested in Delhi.

- In June, the principal investigator met with the enumerators (whose teams had been expanded to handle the larger number of respondents in the full survey) to discuss issues raised about certain questions after the pilot field experience. The PI also debriefed the enumerators and got their interpretation of some of the more complex findings that had emerged in the earlier study.

- The PI went to the field to observe the Rajasthan team in action as it began its survey work. It was not possible to perform the same surveillance on the Orissa and Bihar team because of time but, as the latter was the more experienced group headed by a senior woman scholar with extensive survey experience, it was deemed possible to forgo this step. VO feedback reports about the team's performance in the pilot study had been positive, which reinforced the decision to waive an Orissa and Bihar visit.

**Sample Selection**

The report's first section *(see above)* discusses the sample selection of client and
match women. Additional details on the selection process steps and the nature of both the sample and final set of respondents that emerged from the survey follow.

- GMT trainees were identified by a random selection process, using lists of trainees' names maintained by the VOs. In the pilot survey, an actual randomized selection among those who had attended all sessions and been in the PM&E sessions was possible. In the final survey, because the women already surveyed could not be included and because some women had left the region, it was sometimes necessary to select whole groups of trainees, rather than a subgroup. Enumerators were given the names of the trainees selected and their villages, as well as the names and villages of alternates—chosen by the same random selection procedure—if the originally chosen woman had left the zone.
- As stated above, principle characteristics of match women selected for this study included being from a nearby zone, having economic activities similar to the participant women, and living on a scale and level of poverty similar to that of the trainee women at the point trainees first received GMT.\textsuperscript{177}
- Enumerators were instructed to go to designated areas where women were engaged in small and microenterprise activities parallel to those in which the region’s GMT women were engaged. They then chose every third (or fifth, in more populated zones) woman entrepreneur in that field of activity, up to the number specified at the outset.
- In addition, we oversampled specific groups to try and capture certain important characteristics. Thus we overselected those who did not have GMT but were clients in the same organization to assess the spread effect, as well as those who had a complex set of supports to their economic activities before GMT, to try to assess the package-completion impact. We also oversampled women engaged in piece-rate occupations, to compare them to GMT women from this type of enterprise activity.\textsuperscript{178}
- Among GMT trainees, we collected a statistically significant group of those who had not attended all training sessions, in order to compare the impacts differences between them and women who had attended all sessions.
- In addition, we included a group of women who had started GMT in its later phase, even though in many cases it had not been completed in July 1996, when the full survey was taken. These were called the “new” session trainees, as opposed to those attending the “old” sessions.

The sample drawn and given to the enumerators consisted of the following groups:

**West Rajasthan: 145**

*Trainees: 85*

1. Old-session GMT trainees: 65
2. Old and new GMT trainees who did not complete all of course: 25\textsuperscript{179}
3. GMT trainees from new GMT sessions: 20
Match: 60
1. 30 women in similar piece-rate occupations (similar to women clients of RSS, PEDO, and SURE\(^{180}\)) from the same vicinity, from the same caste/ethnic groups, about the same age, at an economic level similar to that of the GMT-trained women before GMT
2. 30 women in similar occupations (but not piece-rate workers) from the same vicinity and caste/ethnic groups, about the same age, at an economic level similar to that of the GMT-trained women before GMT

East Rajasthan: 94

Trainees: 64
1. Old-session GMT trainees: 45
2. Old and new GMT trainees who did not attend all classes: 15\(^{181}\)
3. GMT trainees from new GMT sessions: 19

Match: 30
1. Women in similar occupations (but not piece-rate workers) from the same vicinity and from caste/ethnic groups, about the same age, at an economic level similar to that of the GMT-trained women before GMT

Orissa: 134

Trainees: 44
1. Old-session GMT trainees: 30
2. Old and new GMT trainees who did not attend all of course: 18\(^{182}\)
3. GMT trainees from new GMT sessions: 14

Match: 90
1. 30 women in similar occupations from the same vicinity and caste/ethnic groups, about the same age, at an economic level similar to that of the GMT-trained women before GMT
2. 60 women who have not had GMT but are engaged in income-generating activities (IGAs) and are clients of either NIPDIT or ISED\(^{183}\)

Bihar: 60

Trainees: 30
1. Old-session GMT trainees: 30
2. GMT trainees who did not attend all sessions: 14\(^{184}\)
Match: 30

1. 30 women in similar occupations from the same vicinity and caste/ethnic groups, about the same age, at an economic level similar to that of the GMT-trained women before GMT

Once the survey was completed, certain changes were observed in the actual numbers and distribution of respondents. One major change was caused by the reduction of trainees surveyed in East Rajasthan, owing to severe flooding that prevented enumerators from gaining access to certain specified villages that included the groups that had received the new (postrevision) training. A village in West Rajasthan—recipient of the 1996 training—was substituted, to provide information on how new trainees differed from those trained in old sessions. The reduction eliminated 19 percent of trainees from the East Rajasthan region. In Orissa, the new-session trainees had not even undergone the first phase of their training and so were eliminated. Fourteen trainees from the old-training batch were added instead, maintaining the total trainees from this region at the number originally specified.

Despite these changes, the overall final sample of GMT trainees closely resembled the distribution selected at the outset. No major problems were encountered in meeting the match sample criteria, although four or five women chosen by enumerators did fall outside the parameters, because they were large-scale traders whose income and assets—three to four times those of any other women in either subsample—did not meet the criteria of being in the same economic group as women chosen for GMT training. They had to be treated as outliers in the analysis of economic impacts (see Introducing Udyogini, WEMTOP, and the Situation Facing Assetless Women in India). Finally, the most interesting and unanticipated characteristic of women in the final match sample was the preponderance of VOs’ women clients. Clients had been explicitly oversampled to observe spread effects; however, it emerged in the randomized sampling that large numbers of women in occupations similar to the GMT trainees were in one way or another clients of the same VOs as the trainees. One hundred fifty-one match respondents (or 72 percent) were also clients of VOs, meaning they had received some interventions—although not necessarily in the form of economic-activity assistance. While unanticipated, the effect of this finding downplays rather than exaggerates the possible impacts of GMT, since some spread from GMT-trained VO agents to other clients not explicitly involved in the WEMTOP program might be expected.

The final sample of respondents included the following groups.

West Rajasthan: 160

1. Old-session GMT trainees: 64
2. Old and new trainees who had not completed the course: 915
3. Trainees from the new GMT session: 36
4. Match: 60
East Rajasthan: 76
1. Old-session GMT trainees: 45
2. GMT trainees who had not completed the course: 3
3. Match: 31

Orissa: 134
1. Old-session GMT trainees: 44
2. GMT trainees who did not attend all sessions: 25
3. Match: 90

Bihar: 60
1. Old-session GMT trainees: 30
2. GMT trainees who did not attend all sessions: 18
3. Match: 30

Data Analysis

Once the data had been coded and entered into a spreadsheet program for analysis (using Statview for statistical analysis and Excel for charts and graphs), a standard procedure was followed to test the six hypotheses around which the study was organized. The following steps were undertaken.

1. The GMT and match samples were compared in terms of their sociodemographic characteristics: geographic location, ethnic group, religion, caste, age, marital status, education, family size, and position in household.
2. The economic status of the two samples’ households was explored, including assets owned, total family income, individual income, individual expenditures on family needs and on other assets, percentage of family income provided by the women respondents, and savings by the women. Change in any of these economic measures was also investigated.
3. The extent to which women in either sample had had any kind of business or empowerment training, access to credit and/or savings schemes, or extension agent visits and assistance other than GMT was also explored.
4. The kind of business in which the women were principally engaged was examined, including nature of the business and type of technology utilized, date of its inception, history of employment, access to credit for start-up and thereafter, net profit (calculated from expenditures and receipts for the year before the survey took place), and marketing (including type and location of
markets). Changes experienced by both groups in employment, marketing patterns, credit, expenditures, and profits in the years since GMT was initiated were also examined.

5. The extent to which women in either group kept records of accounts and stock was explored, as well as the decisionmaking pattern in their households: did their husbands, another person, or the women-alone or with their husbands or another family member-make decisions about the women’s occupations, how their income was spent, and whether and how their children were educated? Changes in bookkeeping and decisionmaking patterns were also explored.

6. The trainees’ own evaluations of GMT and its impact on them were also surveyed.

7. The final and most important step in both the economic and empowerment sections was to specifically test each hypothesis by exploring the interactions of all relevant variables to ascertain whether or not GMT training significantly contributes to differences between the groups in the dependent variables studied.

The sections on Analysis of the Economic Impacts of GMT and the Empowerment Impacts of GMT present this study’s findings. In the former section, the principal dependent variables were taken to be individual income of the women from all activities and net profit from their principal enterprises and book keeping skills. The latter section takes women’s decisionmaking power as the principal dependent variable. For both sections, analysis explored the extent to which GMT—as opposed to the other variables such as age of business or access to credit—can be shown as contributing to change in the dependent variables. While testing for significant differences, we did not pair each individual who benefited from GMT with a corresponding person who did not. The survey design and the subsequent data analysis were based on unpaired matching. Tests of significance were conducted using unpaired-match procedures. This statistical technique requires that every member of the GMT group be compared to every member of the nonbeneficiary group. We believe this solves the problem of the aforementioned four to five outliers in the match sample. When disproportionately high scores are present (in this case in terms of individual income and enterprise profits), it is standard procedure to isolate the cases to make the findings more congruent with the reality of a comparison between two like groups.

Data Analysis Procedures

The primary goal of this evaluation report was to provide objective and timely information about the grassroots management training project. We applied a variety of statistical tools and methods to the data to obtain findings that can be used with as much confidence as possible, given the already noted limitations imposed by timing and certain project characteristics. The primary thrust of this study was to produce wide-ranging, fundamental statistics for a variety of issues with little
advance knowledge of where research would lead. Another objective was to address theoretical and practical problems related to GMT by testing critical hypotheses aimed at measuring the significance of “differences” between non-GMT and GMT participants, while minimizing the effects of exogenous (that is, nonproject) factors. To achieve these objectives, we suggested a combination of both descriptive and inferential statistical methods.

Descriptive statistics included univariate and bivariate analyses. We proposed a varied volume of information that was composed of measures of central tendency and of dispersion, graphical, and contingency tables. These univariate and bivariate data descriptions were critical, providing much-needed background information on the individuals surveyed. Bivariate analyses, for instance, not only provided critical information on pairs of variables, but also helped assess the extent and meaning of the relationship between cross-tabulated variables. Chi-square tests of independence were carried out and Cramer’s V scores were computed to assess both the significance and the strength of relationships. This process helped determine from the outset the partial effect of each individual, independent variable on GMT outcome. In addition to these univariate and bivariate analyses, multivariate analyses were also carried out. Some of the multivariate methods of data analysis used included regression and correlation analyses of variance. Analysis of variance was used to determine, for instance, if and to what extent performance was consistent across GMT and non-GMT groups. Regression and correlation procedures were used to determine how much of the variation in performance could be explained by the set of independent variables included in the analysis and to assess both the direction and the extent to which each variable in the model was related to performance when the other ones were held constant.
Notes

1 The project in Bangladesh was dropped in the design phase and in the Philippines was not carried through to a full pilot stage, owing to a lack of local people available to implement it.


3 For example, the PM&E system is being adopted in another World Bank-sponsored training project in Nepal.


5 Support services might have included a variety of interventions other than credit, including marketing assistance, training in the use of new technologies, technical extension support, and even some generalized training, as long as they were not part of the GMT.


7 Annex B includes a fuller discussion of the methodology employed in the survey and in the data analysis.


12 Again, this differs slightly from the methods employed in other pilot countries. In Burkina Faso, for example, the project trained representatives from women’s groups, who then returned and trained the other women.
Projects for women that had been established 10 or more years before had significantly greater impacts, assuming type of intervention was the same, than did those that had been established recently, within the last 2 to 3 years, in an 8-country study conducted for UNIFEM. See Creevey 1996, especially chapter 10.

For the sake of simplicity in the following discussions, this match group is sometimes referred to in this report as “the control group.” It should be noted that this is not technically a control group, because it is not a group of people selected in a baseline period and then followed just as participants—also chosen in the preproject period—are followed.

Without baseline data we did not have an exact picture of the economic status of GMT women at the start of their training. We did have descriptive evidence from each VO as to whether or not, by and large, they had engaged in the economic activity earlier and at what level of profit their enterprises had been. Given that most had had economic activities that were not systematically organized and lacked a long track record of success, this suggested that enumerators could not include the larger-scale women traders and producers, should they encounter any.

The final individual questionnaire is presented in annex C.

This is a subsample of 1 and 3.

These initials refer to three voluntary organizations known for organizing piece-rate workers.

This is a subsample of 1 and 3.

This is a subsample of 1 and 3.

Non-GMT clients of these VOs were chosen in order to study possible spread effects.

This is a subsample of 1.


Viswanath, Vanita. 1995. Building Partnerships for Poverty Reduction;

26 Ibid.


28 For information on what might emerge in this additional study, see Creevey, Lucy, and Mangala Subramaniam (1996), Report on the Monitoring and Evaluation Data from the WEMTOP Program in India.


31 Differences among these PTIs in prior experience and orientation and in type of training offered is referred to in Kapadia, Neill, and Sreedhar, Final Evaluation....

32 See Udyogini, Mid-Term Review of WEMTOP—India 1994.

33 Ibid., p. 44.

34 Ibid., p. 91.

35 Some different estimates have been made by different members of Udyogini staff—slightly higher and slightly lower—depending on whether or not every woman who attended any training session is included. The differences are quite small, however, and do not appear to be significant for this analysis.


38 United Nations Development Programme, 1995. Human Development Report 1995. New York; Oxford University Press: 179. Data are from 1990. The base, which is updated each year in India, was 1973–1974 when the poverty line was Rs 49 per person per month in rural areas and Rs 57 per person per month in urban zones. In 1996 it was estimated for rural areas at Rs 183.33 per individual per month or Rs 11,000 per year for a family of 5.

39 The exchange rate used in this report is Rs 34 = US$1.


41 Educational attainment includes adult literacy (with two-thirds weight) and a combined primary, secondary, and tertiary enrollment rate (with one-third weight). Income is real income (in purchasing parity power) adjusted for the diminishing utility of higher levels of income. See Human Development Report 1995, p. 18.


43 Ibid., pp. 164–165.

44 In early Indian society women apparently had a much more equal status than they did thereafter.


47 The World’s Women 1995, p. 144


49 Ibid., p. 1112.


51 Bennett, p. 26.

This difference does not undermine the comparability of the two samples because the match women are in the same area of economic activities as the GMT women were when chosen for the training program.

Status (GMT, match) and access to credit and/or savings programs (yes, credit; yes, savings; yes, both; no, neither) Chi sq = 59.78, Cramer’s V = .374, p. = .0001.

Status of those with businesses started in 1994 or later (GMT, match) and access to credit and/or savings (credit, savings, both, neither) Chi sq = 38.348, Phi = .435, p. = .0001

Status of those with businesses started after 1994 (GMT, match) and access to credit and/or savings (access, no access) Chi sq = 38.348, Phi = .435, p. = .0001

Status of those whose businesses were started in 1994 or later (GMT, match) and individual income (Rs 0–500; 501–1,500; 1,501–3,000; 3,001+) Chi sq = 15.224, Cramer’s V = .265, p. = .0043

Status (GMT, match) and change in contribution to family income (yes, no) Chi sq = 7.56, Phi = .161, p. = .006

Status (GMT, match) and net profit from enterprise (Rs 0–199, 200–299, 300–399, 400–499, 500–599, 600–799, 800+) Chi sq = 25.608, Cramer’s V = .263, p. = .0003

The mode net profit for the combined sample was Rs 300 (US$9).

This was calculated with the enumerator helping the woman to figure out her business expenses and the amount consumed by the family, using a block of questions suggested by Wim P.M. Vijverberg in Measuring Income from Family Enterprises with Household Surveys. LSMS Working Paper 84. Washington: The World Bank, 1991.

Status of those with businesses started 1994 or later (GMT, match) and net profit from enterprise (Rs 0–199, 200–299, 300–599, 400–499, 500–599, 600–799, 800+) Chi sq = 24.675, Cramer’s V = .37, p. = .0004

Status (GMT, match) and increase in net profit from enterprise (stayed the same, decrease, increase) Chi sq = 10.613, Cramer’s V = .186, p. = .005

The outliers are removed for this calculation.
ANOVA: Status (GMT, match) and net profit (actual amount) among those who had some skills or business training. Fisher PLSD = 573.897, p. = .01, significant at 95%.

Status (GMT, match) and accounts (none, simple–incomplete, simple–complete, complex–multiple ledgers) Chi sq = 83.564, Cramer’s V = .442, p. = .0001

Status (GMT, match) and stock records (sketchy–inadequate, simple–adequate, complex–adequate) Chi sq = 19.39, Cramer’s V = .29, p. = .0002

The Neill report indicates that the VOIs kept records for many of the group businesses. The enumerators did not see these VO records when administering the individual surveys and are not referring to them in their coding of questions 141 and 143. What they saw was whatever the women kept for themselves in their homes. Obviously, it was easier to keep records if the woman’s VO trainer was keeping overall records. Nonetheless, what the survey documented was attention to, and understanding of, the importance of keeping systematic written track of business activities. This was significantly more likely among women trained by GMT than among the match group.

Literacy (none, some) and accounts (none, inadequate, simple–adequate, complex–adequate) Chi sq = 16.906, Cramer’s V = .261, p. = .0002

Schooling (none, some) and stock records (sketchy, simple–adequate, complex–adequate) Chi sq = 19.755, Cramer’s V = .215, p. = .0001

Status of those who had business management training (GMT, match) and stock inventory (sketchy–incomplete, simple–adequate, complex–adequate) Chi sq = 19.39, Cramer’s V = .29, p. = .0002

Status (GMT, match) and change in where sells products (did not change, changed) Chi sq = 57.916, Phi = .39, p. = .0001

Status (GMT, match) among those with businesses starting before 1994 and increase in employment since 1994 (yes, no) Chi sq = 10.294, Phi = .177, p. = .0013

Status (GMT, match) and increase in number of employees since 1994 (yes, no) Chi sq = 7.053, Cramer’s V = .155, p. = .0294

Status (GMT, match) and savings (does not save, saves at home or with neighbor, saves by buying jewelry or through on-lending, saves in post office or bank, invests in business)

Status (GMT, match) among clients of VOIs and savings (does not save, saves at home or with neighbor, saves by buying jewelry or through on-lending, saves in post office or bank, invests in business) Chi sq = 51.885, Cramer’s V = .375, p. = .0001
52 Ibid., p. 74.


54 Three of the GMT women could not be found, thus reducing the sample from the projected size (see Introducing Udyogini, WEMTOP, and the Situation Facing Assetless Women).

55 See annex A on methodology for more detail.

56 This is a subsample of 1 and 3.

57 This is a subsample of 1.

58 This is a subsample of 1.

59 This is a subsample of 1.

60 Studies show, however, that the impact of education is heavily affected (conditioned) by the larger social context in which a woman finds herself. See "Do Schooling and Work Empower Women in Developing Countries? Gender and Domestic Decisions in Sri Lanka," *The Sociological Forum* (1996). Significant differences found in the data analysis are listed on a page at the end of this section.

61 Statistically significant Chi sq and ANOVA results (indicated by lowercase letter superscript notations) are reported in detailed lists in annex A to this report.

62 Status (GMT participant, match) and literacy (illiterate, literate) Chi sq = 9.88, Phi = .199, p = .0017

63 In this report we are examining three types of revenues: family income, overall income received by the individual women respondents, and net profit earned over the past 12 months by the woman from her principal enterprise. Assets—such as houses, land, vehicles, animals, and so forth—are also examined separately.

64 Status (GMT, match) and quality of house (none, small-mud or brick walls, good quality) Chi sq = 6.129, Cramer’s V = .12, p = .0467.

65 Status (GMT, match) and electricity in home (yes, no) Chi sq = 4.053, Phi = .097, p = .0441.

66 Status (GMT, match) and ownership of land for cultivation (small amount, large amount, none) Chi sq = 8.084, Cramer’s V = .137, p = .0176.

67 Status (GMT, match) and family ownership of livestock (none, 1–3, more)
Chi sq = 9.716, Cramer’s V = .151, p. = .0078.

Status (GMT, match) and family ownership of small ruminants (none, 1–3, more) Chi sq = 10.993, Cramer’s V = .16, p. = .0041.

Status (GMT, match) and ownership of cycle (yes, no) Chi sq = 4.541, Phi = .103, p. = .0331.

These results are in fact skewed in favor of the match sample. Five of the match respondents need to be considered outliers, as they have incomes three times higher than anyone else in their comparison sample (or in the GMT group) and profits of the same order. These are older women with businesses established for long periods of time, mothers of the heads of household, and in no way can be considered suitable as a “match” to the GMT women’s status (as defined in the first section). They are included in most calculations, but removed in some later calculations of comparisons of profits and individual incomes. When they are removed, this is indicated in the text.

Status (GMT, match) and % contribution to household income (up to 25, 25–50, 50+) Chi sq = 5.057, Cramer’s V = .109, p. = .08

1: Family financial status (Rs 0–11,000; 11,000–30,000, 30,000+) and percentage contribution to family revenues (less than 25, 25–50, 50–75, 75–100) Chi sq = 82.388, Cramer’s V = .386, p. = .0001

2: per capita income—derived from dividing each woman’s family income by the number of people in household (below Rs 2,200, above) and % contribution to family (to 25, 25–50, 50–75, 75+) Chi sq = 14.742, Cramer’s V = .231, p. = .002

Age (to 18, 19–30, 31–40, 41–50, 51+) and percentage of family income contributed (to 50, 50+) Chi sq = 13.593, Cramer’s V = .179, p. = .0087.

Age (to 30, 31–40, 41–50, 51+) and percentage of family income contributed (25 or less, 25–50, 50–75, 75–100) Chi sq = 19.079, Cramer’s V = .122, p. = .0245.

Charts include unweighted percentages. In the presentation of this report, the overall tables comparing the characteristics of the GMT and match samples are in the text itself, but the charts from this section and that of the section on Empowerment are included in annex A, as these are numerous and distract from reading of the arguments presented.

Status (GMT, match) and type of activity (trade, production, service, agriculture) Chi sq = 20.127, Cramer’s V = .217, p. = .0005

Status (GMT, match) and management of business (salaried, piece-rate, self-employed, group enterprise, nonagricultural activities) Chi sq = 58.331, Cramer’s V = .369, p. = .0001

Status (GMT, match) and start-up date of enterprise (before 1985,
Status (GMT, match) and why greater expenditures for food (earns more, costs more, more or older children, other) Chi sq = 21.47, Cramer’s V = .236, p. = .0001

1. GMT combined with credit and support services leads to  
   a) increased income from the sum of her economic activities for the woman entrepreneur in the survival and microenterprise economy  
   b) increased savings for the woman entrepreneur  
   c) increased personal and family assets  
   d) improved family well-being (measured by greater family consumption of nutritious foods and increased education for children)


ANOVA State (East or West Rajasthan, Orissa, Bihar) and profit. p. = .0001.

Location (urban, rural–accessible, rural–remote) and type of enterprise (trade, production, service, agriculture) Chi sq = 55.605, Cramer’s V = .26, p. .0001

ANOVA type of enterprise (commerce, production, service, agriculture) and profit. p. = .011.

ANOVA start date of enterprise (before 1994, 1994 or later) and profit. p = .045

ANOVA, among women with businesses started in 1994 or later, status (GMT, match) and profit. p. = .07

See Dr. M.M.P. Akhouri, “Analysis of the Curriculum of all GMTIs.” Fax to Jim Edgerton, March 8, 1986, and Kapadia et al., draft of *Final Evaluation ... : 6.*

ANOVA: PTI (DD, PKT, NIESBUD) and individualized family income. p. = .0002

PTI (PKT, NIESBUD, DD) and nature of enterprise (trade, production, services, agriculture) Chi sq = 46.509, Cramer’s V = .233, p. = .0001

PTI (DD, PKT, NIESBUD) and access to credit/savings (credit, savings, both, neither) Chi sq = 45.807, Cramer’s V = .231, p. = .0001

PTI (DD, NIESBUD, PKT) and savings (does not save, saves at home or with neighbor, saves by buying jewelry or through on-lending, saves in post office or bank, invests in business) Chi sq = 35.615, Cramer’s V = .204, p. = .0001
PTI (DD, NIESBUD, PKT) and accounts (no info, simple—incomplete, simple—complete, complex—multiple ledgers) Chi sq = 107.327, Cramer’s V = .354, p. = .0001

PTI (DD, NIESBUD, PKT) and net profit (Rs 0–500, 500–799, 800+) Chi sq = 84.244, Cramer’s V = .337, p. = .0001.


DD clients (GMT, match) and net profit from enterprise (Rs 0–500, 501–799, 800+) Chi sq = 6.568, Cramer’s V = .212, p. = .0375

DD Women (GMT, match) and savings (does not save, saves at home or with neighbor, saves by buying jewelry or through on-lending, saves in post office or bank, invests in business) Chi sq = 10.645, Cramer’s V = .256, p. = .0138

DD clients (GMT, match) and increase in enterprise profits (new enterprise, stayed the same, decrease, slight increase, large increase) Chi sq = 7.823, Cramer’s V = .224, p. = .0983.

Among PKT clients, status (GMT, match) and net profit (Rs 0–500, 501–799, 800+) Chi sq = 24.507, Cramer’s V = .372, p. = .0001

Among PKT clients, status (GMT, match) and change in profits (same, decrease, increase some or a lot) Chi sq = 15.215, Cramer’s V = .306, p. = .0005

Among clients of PKT, status (GMT, match) and access to credit/savings (credit, savings, credit and savings, neither) Chi sq = 37.07, Cramer’s V = .428, p. = .0001

5. Type of GMT (degree of emphasis on each of the following: marketing, human resource management, finance, and credit), and amount of (number of days) of GMT and follow-up will lead to different degrees of impact, measured by the dimensions identified in hypotheses 1–3.

Credit (access, no access) and individual income (Rs 0–500; 501–1,500; 1,501–3,000; 3,001–8,500; 8,501+) Chi sq = 18.785, Cramer’s V = .218, p. = .0009

There is no evidence that these women are using their credit for their household needs. A more likely interpretation is that increased profits (also indicated by the data as resulting from credit availability) allow them more funds for contribution to household needs. It should be pointed out, however, that in other surveys of credit recipients conducted by this researcher, women were much more likely than their husbands to use the first profits resulting from credit for family needs, al-
though they were also just as, or more, likely to pay off the credit debt as their spouses. Their husbands were more likely to invest the increased profits into their businesses.

127 Credit/savings (access, no access) and net profit from enterprise (Rs 0–500, 501–799, 800+) Chi sq = 6.164, Cramer’s V = .129, p. = .0459

128 Status of those with credit (GMT, match) and individual revenue (Rs 0–500; 501–1,500; 1,501–3,000; 3,001–8,500; 8,501+) Chi sq = 15.193, Cramer’s V = .237, p. = .0043

129 There is no contradiction in the fact that individual income did not illustrate the impacts of GMT in this group while net profits of the same group were significantly higher if they had received GMT. In fact, when profit and income amounts are very small, net profits may be expected to show improvements before overall income changes significantly.

130 Status of those with credit (GMT, match) and change in contribution to family income (increased, did not increase) Chi sq = 7.56, Phi = .161, p. = .006

131 Status of those with credit (GMT, match) and net profit from enterprise (Rs 0–500, 501–799, 800+) Chi sq = 5.111, Cramer’s V = .139, p. = .0776

132 Status of those without credit (GMT, match) and net profit from enterprise (Rs 0–500, 500–799, 800+) Chi sq = 15.281, Cramer’s V = .381, p. = .0005

133 Status of those with credit (GMT, match) and change in profits (same, decrease, increase) Chi sq = 7.881, Cramer’s V = .191, p. = .0194

134 Credit (access, no access) and accounts (none, sketchy, adequate) Chi sq = 46.887, Cramer’s V = .332, p. = .0001

135 Credit (access, no access) and stock inventory (sketchy, simple–adequate, complex–adequate) Chi sq = 46.887, Cramer’s V = .332, p. = .0001

136 Among women with access to credit, status (GMT, match) and accounts (none, simple–inadequate, adequate–simple or complex) Chi sq = 44.407, Cramer’s V = .392, p. = .0001

137 Among women with access to credit, status (GMT, match) and stock inventories (sketchy, simple–adequate, complex–adequate) Chi sq = 45.686, Cramer’s V = .397, p. = .0001

138 Some required no interest payments, for example, while others charged 18 percent or more. Some permitted access to credit only as a proportion of the amount saved. Others offered credit independent of savings and so on.
2. GMT leads to
   a) improved access to credit and to extension services
   b) expanded markets (beyond the immediate local market) for microenterprises
   c) increased employment
   d) increased enterprise income

4. Women who have had access to credit and/or other support services, but not to GMT, will show smaller levels of improvement than women with GMT (who have also had access to credit and/or other support services) in the dimensions specified in hypotheses 1 and 3.


For those with families above the poverty line, status (GMT, match) and level of individual income (Rs 0–500; 501–1,500; 1,501–3,000; 3001–8,500; 8,501+) Chi sq = 25.163, Cramer’s V = .274, p. = .0001

Women below poverty line, status (GMT, match) and increase in net profit from enterprise (Rs 0–500; 501–1,500; 1,501+) Chi sq = 4.309, Cramer’s V = .303, p. = .116

Women below poverty line, status (GMT match) and increase in net profit from enterprise (Rs 0–500, 501+) Chi sq = 4.235, Phi = .3, p. = .0396

Women above poverty line, status (GMT, match) and increase in net profit from enterprise (Rs 0–500; 501–1,500; 1,501+) Chi sq = 14.96, Cramer’s V = .215, p. = .0006

Women below poverty line, status (GMT, match) and increase in contribution to family income (yes, no) Chi sq = 8.883, Phi = .375, p. = .0029

Women above poverty line, status (GMT, match) and increase in contribution to family income (yes, no) Chi sq = 10.885, Phi = .172, p. = .001

Above the poverty line, status (GMT, match) and savings (does not save, saves at home or with neighbor, saves by buying jewelry or through on-lending, saves in post office or bank, invests in business) Chi sq = 54.177, Cramer’s V = .384, p. = .0001

Below the poverty line, status (GMT, match) and savings (does not save, saves at home or with neighbor, saves by buying jewelry or through on-lending, saves in post office or bank, invests in business) Chi sq = 7.995, Cramer’s V = .356, p. = .0184
Family Income (Rs 0–11,000; 11,000–30,000; 30,000+) and net profits (Rs 0–500; 501–1,500; 1,501+) Chi sq = 58.009, Cramer’s V = .359, p. = .0001

6. The poorer the entrepreneur (measured by family and individual income and assets), the greater the GMT impacts (as measured in hypotheses 1–3).


Status (GMT, match) and change in time used for childcare (no change, more time, less time) Chi sq = 11.005, Cramer’s V = .161, p. = .0041

Status and time used for preparation of meals (no change, more time, less time) Chi sq = 5.238, Cramer’s V = .111, p. = .0721

Status and fetching water or fuel (no change, more time, less time) Chi sq = 6.232, Cramer’s V = .121, p. = .0443

Status and time used for rest/leisure (no change, more time, less time) Chi sq = 18.68, Cramer’s V = .209, p. = .0001

Status and time used for own education (No change, more time, less time) Chi sq = 37.563, Cramer’s V = .297, p. = .0001

See Creevey 1996.

Status and outlook on the future (will get worse, stay the same, improve—and I can play a role in changing things) Chi sq = 7.139, Cramer’s V = .129, p. = .0282

See “Do Schooling and Work Empower Women in Developing Countries?...,” which documents that culture and traditions often override other factors. These was not enough difference in culture, class, or caste for this to emerge, although other factors did condition the impacts of training.

Education (some, none) and decision on use of own income (self, husband, other family members, self and husband, women’s group) Chi sq = 17.254, Cramer’s V = .201, p. = .004

Access to credit (access, no access) and decision on use of own income (self, husband, other family members, self and husband, women’s group) Chi sq = 13.288, Cramer’s V = .176, p. = .0013

Family Income (below poverty line, above) and decision on use of own income (self, husband, self and husband) Chi sq = 5.922, Cramer’s V = .146, p. = .0518
162 It is important to emphasize that this entire sample is poor. Were we to include middle-class women, this finding might not have emerged.

163 PTI (PKT and NIESBUD versus DD) and decision on use of own income (self, husband, other family members, self and husband, women’s group) Chi sq = 9.848, Cramer’s V = .245, p. = .0796

164 For women above the poverty line, status (GMT, match) and decision on own income (self, husband, husband and self) Chi sq = 5.586, Cramer’s V = .122, p. .0612

165 Women with no access to credit, status (GMT, match) and decision on use of own income (self, husband, self and husband) Chi sq = 7.551, Cramer’s V = .234, p. = .0229

166 Status (GMT, match) and taken active role in community decision (yes, no) Chi sq = 30.953, Phi = .271, p. = .0001

167 Among women above the poverty line, status (GMT, match) and community action (yes, no) Chi sq = 8.375, Cramer’s V = .398, p. = .0152.

168 Among women in poverty, status (GMT, match) and community action (yes, no) Chi sq = 8.375, Cramer’s V = .398, p. = .0152

169 PTI (PKT, NIESBUD, DD) and community action (yes, no) Chi sq = 20.648, Cramer’s V = .221, p. = .0001

170 Among PKT and NIESBUD clients, status (GMT, match) and community decisionmaking (yes, no) Chi sq = 49.254, Cramer’s V = .43, p. = 0001.

171 PTI (PKT, NIESBUD, DD) and GMT leading to large increase in income (yes, no) Chi sq = 15.263, Cramer’s V = .187, p. = .0042

172 PTI (PKT, NIESBUD, DD) and GMT leading to better quality product (yes, no) Chi sq = 20.806, Cramer’s V = .218, p. = .0003

173 PTI (PKT, NIESBUD, DD) and GMT leading to a gain in power in family (yes, no) Chi sq = 15.268, Cramer’s V = .187, p. = .0042

174 PTI (PKT, NIESBUD, DD) and GMT leading to increase in role in family discussions (yes, no) Chi sq = 16.942, Cramer’s V = .197, p. = .002

175 PTI (PKT, NIESBUD, DD) and GMT leading to learning more about what women can do (yes, no) Chi sq = 15.301, Cramer’s V = .187, p. = .0041

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See, for example, the studies produced by the Gemini Project for USAID.

Without baseline data, we did not have an exact picture of the economic status of GMT women at the beginning of their training. We did have descriptive evidence from each VO as to whether, by and large, they had engaged in the economic activity earlier and at what level of profit their enterprises had been. Given that most had had economic activities that were not systematically organized and lacked a track record of financial success, this suggested that enumerators could not include the larger-scale women traders and producers, should they encounter any.

This is one example of those matters into which we could not delve in the report—although the data is certainly available—because of the short time permitted for analyzing and writing up the survey results.

This is a subsample of 1 and 3.

These initials refer to three voluntary organizations known for organizing piece-rate workers.

This is a subsample of 1 and 3.

This is a subsample of 1 and 3.

Non-GMT clients of these VOs were chosen in order to study possible spread effects.

This is a subsample of 1.

This is a subsample of 1 and 3.

This is a subsample of 1.

This is a subsample of 1.
ANNEX C
Tables, Charts and Graphs

Table 1: Hypothesis Summary

<table>
<thead>
<tr>
<th>Evidence for:</th>
<th>Hypotheses Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. GMT combined with credit and other support services leads to</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>a. increased income for the woman entrepreneur in the survival and microenterprise economy from the total of her economic activities</td>
</tr>
<tr>
<td>Yes</td>
<td>b. increased savings for the woman entrepreneur</td>
</tr>
<tr>
<td>No</td>
<td>c. increased personal and family assets</td>
</tr>
<tr>
<td>No</td>
<td>d. improved family well-being (measured by greater family consumption of nutritious food and increased education for children)</td>
</tr>
<tr>
<td>2. GMT leads to</td>
<td></td>
</tr>
<tr>
<td>Yes*</td>
<td>a. improved access to credit and to extension services</td>
</tr>
<tr>
<td>Partially</td>
<td>b. expanded markets (beyond the immediate local market) for microenterprises</td>
</tr>
<tr>
<td>Partially</td>
<td>c. increased employment</td>
</tr>
<tr>
<td>Yes</td>
<td>d. increased enterprise income</td>
</tr>
<tr>
<td>3. GMT leads to</td>
<td></td>
</tr>
<tr>
<td>Partially</td>
<td>a. empowerment—the ability of a woman at the survival or microenterprise economy level to have a respected and influential position in decisions in her family</td>
</tr>
<tr>
<td>Yes</td>
<td>b. empowerment—the ability of women to take a larger, more decisive role in the community as well as in family decisions</td>
</tr>
<tr>
<td>4. Women who have had access to credit and/or other support services, but not to GMT, will show smaller levels of improvement than women with GMT, who have also had access to credit and/or other support services, in the dimensions specified in hypotheses 1 and 3.</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>5. Type (degree of emphasis on each of the following: marketing, human resource management, finance and credit), and amount (number of days) of GMT and follow-up will lead to different degrees of impact, measured by the dimensions identified in hypotheses 1–3.</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
<tr>
<td>6. Impacts of GMT (as measured in hypotheses 1–3) will be greater the poorer the entrepreneur (measured by family and individual income and assets), the greater the GMT impacts.</td>
<td></td>
</tr>
</tbody>
</table>

*Participation in the GMT program results in greater access to credit; this is not a result of training as such, but is a resource provided by the VO along with the training.
<table>
<thead>
<tr>
<th>Population (millions)</th>
<th>Sex Ratio Females per 1,000 males</th>
<th>Life Expectancy (years)</th>
<th>Adult Literacy %</th>
<th>Share of Economic Active Population %</th>
<th>Non-Ag Wage (Rs per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bihar</td>
<td>86.4</td>
<td>911</td>
<td>58.3</td>
<td>60.4</td>
<td>18.2</td>
</tr>
<tr>
<td>Orissa</td>
<td>31.7</td>
<td>971</td>
<td>54.8</td>
<td>55.9</td>
<td>29.0</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>44.0</td>
<td>910</td>
<td>57.8</td>
<td>57.6</td>
<td>17.5</td>
</tr>
<tr>
<td>All India</td>
<td>846.3</td>
<td>927</td>
<td>59.4</td>
<td>59.0</td>
<td>33.9</td>
</tr>
</tbody>
</table>
Table 3: Sociodemographics Profile

<table>
<thead>
<tr>
<th>Items</th>
<th>GMT</th>
<th>Match</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Categories</td>
<td>Categories</td>
</tr>
<tr>
<td>Location</td>
<td>urban</td>
<td>rural, access+</td>
</tr>
<tr>
<td></td>
<td>13.76%</td>
<td>67.89%</td>
</tr>
<tr>
<td>Age of respondent</td>
<td>&lt;18%</td>
<td>19.30%</td>
</tr>
<tr>
<td></td>
<td>1.84%</td>
<td>26.61%</td>
</tr>
<tr>
<td>Language/ethnicity</td>
<td>Hindu</td>
<td>Urdu</td>
</tr>
<tr>
<td></td>
<td>14.22%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Religion</td>
<td>Hindu</td>
<td>Muslim</td>
</tr>
<tr>
<td></td>
<td>97.25%</td>
<td>0.92%</td>
</tr>
<tr>
<td>Caste</td>
<td>Brahmin</td>
<td>Kahatriya</td>
</tr>
<tr>
<td></td>
<td>1.38%</td>
<td>10.09%</td>
</tr>
<tr>
<td>Schooling</td>
<td>none</td>
<td>part prim.</td>
</tr>
<tr>
<td></td>
<td>80.28%</td>
<td>9.63%</td>
</tr>
<tr>
<td>Literacy</td>
<td>n/a</td>
<td>illiterate</td>
</tr>
<tr>
<td></td>
<td>33.03%</td>
<td>56.88%</td>
</tr>
<tr>
<td>Marital status</td>
<td>unmarried</td>
<td>married</td>
</tr>
<tr>
<td></td>
<td>5.04%</td>
<td>82.57%</td>
</tr>
<tr>
<td>Household status</td>
<td>head</td>
<td>wife</td>
</tr>
<tr>
<td></td>
<td>16.97%</td>
<td>62.84%</td>
</tr>
<tr>
<td>Type of house</td>
<td>n/a</td>
<td>small-mud</td>
</tr>
<tr>
<td></td>
<td>0.92%</td>
<td>53.67%</td>
</tr>
<tr>
<td>Land for cultiv.</td>
<td>yes-small</td>
<td>yes-large</td>
</tr>
<tr>
<td></td>
<td>28.90%</td>
<td>33.95%</td>
</tr>
<tr>
<td>Household size misc. stats</td>
<td>mean</td>
<td>deviation</td>
</tr>
<tr>
<td></td>
<td>6.89%</td>
<td>3.25%</td>
</tr>
</tbody>
</table>

1. **GMT** and **Match** columns represent different sets of data regarding sociodemographics profile.
2. The **Ni** column indicates the number of individuals for each category.
3. The data includes various categories such as location, age, language, religion, caste, schooling, literacy, marital status, and household status, among others.
4. Each category is represented with percentage values, indicating the proportion of individuals belonging to that category.
<table>
<thead>
<tr>
<th>Items</th>
<th>GMT Women Categories</th>
<th>Nt</th>
<th>Match Women Categories</th>
<th>Nt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per capita income</td>
<td><strong>mean</strong> 4,277.19</td>
<td><strong>mean</strong> 3,961.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>deviation</strong> 2,450.67</td>
<td><strong>deviation</strong> 2,500.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>minimum</strong> 1,357.51</td>
<td><strong>minimum</strong> 1,201.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>maximum</strong> 17,000.00</td>
<td><strong>maximum</strong> 18,000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>215</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual's income</td>
<td><strong>mean</strong> 5,569.65</td>
<td><strong>mean</strong> 5,766.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>deviation</strong> 359.61</td>
<td><strong>deviation</strong> 796.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>minimum</strong> 0.00</td>
<td><strong>minimum</strong> 500.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>maximum</strong> 11,000.00</td>
<td><strong>maximum</strong> 40,000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>190</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual profit income</td>
<td><strong>mean</strong> 1,172.19</td>
<td><strong>mean</strong> 1,583.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>deviation</strong> 1,875.18</td>
<td><strong>deviation</strong> 6,059.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>minimum</strong> 0.00</td>
<td><strong>minimum</strong> 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>maximum</strong> 11,000.00</td>
<td><strong>maximum</strong> 40,000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>218</td>
<td>211</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More food expense</td>
<td><strong>yes</strong> 86.65</td>
<td><strong>yes</strong> 95.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>no</strong> 15.14</td>
<td><strong>no</strong> 6.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>218</td>
<td>211</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food-only more</td>
<td><strong>earn more</strong> 2.65</td>
<td><strong>earn more</strong> 2.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>expensive</strong> 0.00</td>
<td><strong>expensive</strong> 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>children</strong> 4.64</td>
<td><strong>children</strong> 4.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>other</strong> 4.56</td>
<td><strong>other</strong> 4.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>199</td>
<td>211</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contribution to household</td>
<td><strong>annual</strong> 51.65</td>
<td><strong>annual</strong> 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>&lt;1/4</strong> 30.55</td>
<td><strong>&lt;1/4</strong> 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>1/4 to &lt;1/2</strong> 7.44</td>
<td><strong>1/4 to &lt;1/2</strong> 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>1/2 to &lt;2/3</strong> 5.91</td>
<td><strong>1/2 to &lt;2/3</strong> 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>&gt;2/3 to all</strong> 0.00</td>
<td><strong>&gt;2/3 to all</strong> 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>215</td>
<td>211</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased contribution</td>
<td><strong>yes</strong> 82.57</td>
<td><strong>yes</strong> 63.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>no</strong> 17.43</td>
<td><strong>no</strong> 36.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>218</td>
<td>211</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to save</td>
<td><strong>no</strong> 16.54</td>
<td><strong>no</strong> 31.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>yes, cash</strong> 16.51</td>
<td><strong>yes, cash</strong> 19.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>yes, trust</strong> 5.03</td>
<td><strong>yes, trust</strong> 1.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>yes, animal</strong> 0.44</td>
<td><strong>yes, animal</strong> 0.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>yes, jewelry</strong> 0.44</td>
<td><strong>yes, jewelry</strong> 0.47</td>
<td></td>
<td></td>
</tr>
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Table 5: Measurements/strength of Relationships between Selected Characteristics*

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GMT side
Match side

* Numbers in cells represent the computed Chi scores of association and relevant measures of strength.
Chart 1: Annual Family Income
Table 6: GMT Trainees' Evaluation of GMT Impacts

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<tr>
<td>Moderate increase in income</td>
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<td>Access to new means of production</td>
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<td>Helped become more efficient in business</td>
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<td>Helped gain more power in family decisions</td>
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<td>Improved the quality of products sold</td>
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<td>Helped my group influence decisions</td>
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Chart 2: Individual Income of Women from All Economic Activities

[Bar chart showing percentage of respondents in different income brackets for GMT and Match]
Chart 3: Percentage Contribution to Family Income