

Recycling by Men and Women in Quito Neighborhoods: Findings and Implications

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GreenCOM
Environmental Education and Communication Project



Written by:

Orlando Hernández
Barbara Rawlins

In consultation with:
Elizabeth Mills Booth, GreenCOM
Marco Encalada, Corporación OIKOS
Javid Kaiser, Research Unit, AED
Nancy Diamond, GreenCOM

For more information contact:

GreenCOM Project
Academy for Educational Development (AED)
1255 23rd Street, NW
Washington, DC 20037
USA

Tel: (202) 884-8992
Fax: (202) 884-8997
E-mail: greencom@aed.org

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Kate Barba, Project Officer, G/ENV/ENR

Corporación OIKOS

Marco Encalada, Director
Rocío Bastidas, Education Coordinator
Jorge Campaña, Environmental Education Officer
Luisa Trujillo, Documentation Officer
Janet Ulloa, Planning Manager

MARKOP

Luis Subía, Director

Academy for Educational Development

Richard Bossi, Acting Director, GreenCOM
Mona Grieser, EE&C Specialist, GreenCOM
Susan Middlestadt, Senior Research Adviser, GreenCOM
Sara Marlay, Project Assistant, GreenCOM

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Overview

A. Introduction

This report examines the attitudes, beliefs and behaviors of male and female residents regarding recycling household waste in six neighborhoods of Quito, Ecuador. At the time of the study, four of these neighborhoods were served by a pilot waste recycling program, and two were targeted by the municipal government for future expansion of the program. This report focuses on survey results of a two-phase investigation which sought to determine (1) why compliance with program guidelines for separating and disposing of waste through the recycling program had decreased over time and (1) which factors, including gender, have an influence on whether or not residents practice recycling. In addition, information was gathered from residents on common sources of neighborhood news and other communication channels in order to identify the best avenues to disseminate pro-recycling messages.

Most of the neighborhoods participating in the program are in Southern Quito and are either lower or lower-middle class neighborhoods. A pilot recycling program was initiated in these neighborhoods by a municipal initiative that targeted areas of Quito unserved by municipal waste collection services. The initiative reflected the concerns of a municipal council member with a long tradition of environmental activism. The neighborhoods participating in the program represented a variety of social dynamics. Some of them are old established and cohesive neighborhoods with relative stable residents, many of whom are public sector employees. In some cases, these are neighborhoods where residents have come together to participate in previous neighborhood development efforts. Others are more recent neighborhoods bringing together immigrants from different parts of the country, both urban and rural, characterized by a looser social structure.

Residents of the neighborhoods surveyed through the study reported here represent the different socio-economic strata participating in the pilot recycling program and came from both the lower and lower-middle classes. Based on an objective definition of waste separation, 49% of the sample practices waste separation, the rest does not. The sample includes both men and women, yet it is skewed towards women. The data were gathered in the daytime, capturing many housewives. The data collected indicate that most of the 373 respondents live in one or two-story houses, although some reside in unfinished houses and rented rooms. The most common occupations for the main breadwinner in the family fall into two categories: micro-entrepreneurs (e.g. home-based industries) or working class/wage earners. In 35% of the visited households, adult females in the household generate family income. Most of them are self-employed, merchants, or work as administrative assistants in the service industry. The data indicate the primary female adult decision-makers among households that separate waste were more likely to have a higher status occupation (self-employed, professional or merchant) than their counterparts in households that do not separate waste. Approximately one-third of

respondents received some primary school education, one-half received some secondary school education, and only a small proportion obtained any post-secondary school instruction.

Furthermore, the study addressed the issue of how to increase the benefits of recycling for women while recognizing the different roles they play with respect to recycling waste. The income generated by the common practice of selling household recyclables to scavengers may be used by women in the household to meet family needs. The scavengers going from house to house trying to purchase recyclable products are generally women, and most of the micro-enterprise personnel are also women.

B. Background

In 1993, the city of Quito initiated a pilot recycling program in several lower and lower-middle class neighborhoods. The City Council Office promoted the program in these neighborhoods by working with existing neighborhood committees. By 1995, the pilot program had expanded to cover 11 neighborhoods, predominantly in the southern part of the city, including approximately 4,500 families. The program is managed by an autonomous non-profit municipal authority, Empresa Municipal de Aseo, which is responsible for sanitation city-wide.

The program requires that participating families separate their household waste for neighborhood collection into three categories: organic, recyclable, and unusable (bathroom waste products, such as toilet paper, sanitary napkins, etc.). Each type of waste is picked up at the curb on different days of the week. Neighborhood teams, which are called micro-enterprises, receive salaries to collect the waste and may serve more than one neighborhood. The team usually consists of a manager, a bell holder to warn residents of their impending approach, and two or three collectors. Neighborhood committees, whose most active members are often women, are instrumental in identifying residents to organize the micro-enterprises.

The micro-enterprise is responsible for collecting and disposing of the different types of waste through multiple mechanisms. Recyclable waste is sold. In some neighborhoods organic waste is composted and sold. Unusable waste is taken to nearby dumpsters and later transported by city trucks to the landfill. Revenue from the sales are given to each neighborhood committee to create a neighborhood development fund. Any money funneled into local development projects is matched by the municipality. The recycling program has the potential to not only benefit participating neighborhoods by generating development project funds, but also to decrease the municipality's costs for transporting waste to its landfill.

Confronted with dwindling levels of recycling in pilot neighborhoods over time, the municipality of Quito sought to discover what was changing. At the request of the municipality, Corporación OIKOS, a national non-governmental environmental organization, with technical assistance from the Environmental Education and Communication (GreenCOM) Project, agreed to conduct a two-part study to examine the reasons why only an estimated one-third of eligible residents actively participate in the recycling program. The purpose of the study was to generate information that would guide the development of an educational intervention to promote

recycling, both in currently served neighborhoods and also in areas where the municipality was considering expanding the program. An important component of the study was to examine differences between people who separate waste and those who do not. This study placed special emphasis on exploring the impact that gender has on the practice of recycling, and how to make the benefits of participation in the program more equitable for women.

Specific objectives were:

- 1) To understand the impact that gender has on program promotion, waste collection services provided, and waste separation practices at the household level;
- 2) To identify the level of satisfaction that male and female residents have with the current waste collection services provided;
- 3) To identify knowledge factors that influence waste separation practices;
- 4) To identify psycho-social factors that determine waste separation at the household level; and
- 5) To identify communication channels that can be used to implement an educational strategy.

The study was carried out in two phases. Phase One of the study consisted of a qualitative analysis that helped to clarify the role of gender in the promotional activities and in the operation of the waste collection micro-enterprises. Findings from this phase, a summary of which is provided in the Introduction section of this report (pages 1-6), resulted in the formation of several general hypotheses about which forces influence waste separation practices. These hypotheses, in turn, served as the conceptual basis for the design of a quantitative questionnaire for Phase Two of the study.

This report presents findings from Phase Two of the study examining waste recycling and separation practices; beliefs about the impact of not recycling waste; and sources of neighborhood information and common communication channels. Six neighborhoods were surveyed: 4 served by the pilot program and 2 that are currently not served but are being considered for future expansion. Selection of these neighborhoods was intended to produce a representative sample of men and women from the lower and lower-middle classes, and to include both waste separators and non-separators. A total of 410 persons were surveyed, with a greater number of women than men included in the sample. It is possible that women are over-represented in the sample because the majority of the interviews were conducted during weekdays, when more women than men were at home.

This report was prepared for Corporaci\u00f3n OIKOS but is also intended for use by other institutions and individuals interested in designing gender-sensitive educational and promotional interventions to promote recycling in the Quito area. It has been designed as a reference document that environmental educators can use in the design of such interventions.

C. Results

Results of the study suggested that the municipal government's perception of waste differed greatly from the household perspective. From the point of view of neighborhood residents, the only real waste was unusable bathroom waste. All other types of waste were viewed as valuable commodities that could either be reused by household members, given to others to reuse, or sold to scavengers. In contrast, the municipal government viewed waste from a systems approach, as an issue that needed to be addressed in a systematic way in order to improve communities in the municipality. Although the municipality recognized the usefulness of the role that scavengers play as an informal part of the waste collection system, it was concerned about reducing the number of scavengers who comb its landfill and decreasing the adverse health effects this practice can cause. To address this issue, the municipal government tried to create incentives for scavengers to operate from collection points inside the city, rather than the site of the landfill. At the same time, it provided protective equipment (e.g., gloves) to scavengers for handling waste.

Results of the study also revealed that whether or not neighborhood residents practice waste separation can be predicted by several factors, including:

- 1) knowledge of the pilot program guidelines and the kinds of waste products that make up organic, recyclable, and unusable waste;
- 2) satisfaction with the waste collection service, particularly its reliability;
- 3) agreement with giving waste which has commercial value to collectors; and
- 4) perceptions of social pressure about separating waste.

Men and women respond differently to some of these variables. For example, agreement with giving waste which has commercial value to collectors was a predictor of waste separation for women but not for men. The sources of social pressure to which men and women respond when they separate their waste are also different. Whereas social pressure from neighbors is a predictor of waste separation for men, social pressure from neighbors and family members is a predictor of that same behavior for women.

The study included questions on residents' perceptions of the health, environmental, and social effects of disposing of waste in ways other than giving it to collectors. Both male and female respondents considered insects and unhygienic conditions to be the major adverse outcome when trash was not given to recyclers. Pollution and environmental destruction were reported to be the primary environmental effects. The poor appearance of the neighborhood was the most commonly voiced social concern. Interestingly, when asked how waste should be handled to prevent destruction of the environment, statistically significant differences between separators and non-separators were found. The former more often suggested to recycle than the latter. No gender differences were noted.

For both men and women, separation practices were clearly linked to their perception of what happens with the funds generated by the sale of the recyclable waste given to the micro-enterprise. In order for residents to give up the profits that the sale of recyclables to scavengers and middle men produces for their families, they wanted to be certain that the funds will be channeled into a worthwhile project to benefit their neighborhood.

The mass media channels most commonly used by males and females (in decreasing order of popularity), include: television, radio, newspapers and magazines. However, males more often read newspapers than females. Neighborhood news, on the other hand, is generally obtained through more informal networks. In general, relatives and friends serve as the most common source of information about neighborhood events. Churches and neighborhood assemblies also serve this function. Only a small portion of the sample, however, reported belonging to any type of local organization. Overall, for-profit neighborhood committees and housing cooperatives were the most commonly mentioned local membership organizations. While men more often reported belonging to sports clubs, women more often belonged to housing cooperatives.

D. Recommendations

Results of the analyses led to the formulation of several recommendations that can be classified into three categories: those pertaining to programmatic issues, those pertaining to educational issues, those pertaining to methodological issues.

1. Programmatic Recommendations

- a) *Organize a meeting of male and female stakeholders, including neighborhood representatives, to decide the future direction of the program.*
- b) *Evaluate alternative ways of handling organic waste, including the feasibility of composting.*

2. Educational/Promotional Recommendations

If the pilot program continues to be implemented in its current form, the following recommendations should be applied.

- a) *Educate the public about pilot program guidelines and terms to promote the correct separation of waste which is given to collectors in the micro-enterprises. Preferably, messages should be disseminated on a continual basis.*
- b) *Convince residents that giving commercially valuable waste to collectors is beneficial to themselves and the community as a whole. Involve the community in setting neighborhood development goals for using funds generated by the sale of recyclables collected by the micro-enterprises.*

- c) *Publicly recognize residents who are contributors to the recycling effort in their neighborhood.*
- d) *Interpersonal communication channels should be combined with other media channels to disseminate promotional messages about the recycling program.*
- f) *Develop promotional messages about recycling waste.*

i. Suggested Topics for Promotional/Educational Strategy:

If the stakeholders determine that the goal of the municipality is to reduce the amount of waste destined for the landfill:

- < Indicate that the city approves of both the formal pilot program collection system and the informal collection system, and dispose of some waste products through scavengers. Indicate that they are both are good options.
- < Explain the three categories of waste used by the pilot recycling program: organic, recyclable, and unusable. Organic waste consists of raw and cooked non-meat food products. Recyclable materials include paper, boxes, glass, plastic, and metal. Unusable waste is defined as bathroom products.
- < There is much confusion about which plastic can be recycled. Explain which types should be saved.
- < Explain that each of the three categories of waste, organic, recyclable and unusable, is picked up on different days of the week. Indicate when and how to put waste on the curb to be collected on the designated pick-up day. Request a collection schedule sticker from the micro-enterprise in your neighborhood.
- < Residents should put garbage out on the morning of the collection day, not the night before.
- < Suggest that if garbage is not collected on the designated day, store it or give it to scavengers, do not dispose of it in the ravine.
- < Suggest to alert the micro-enterprise manager if garbage is not collected according to the schedule.
- < Indicate that recycling waste generates funds that can be used to reinvest into community development projects in your neighborhood.
- < Invite residents to participate on a planning team to decide how to use recycling revenues generated by your micro-enterprise.

- < Offer testimonies from program participants who are satisfied with the pilot collection program to help promote the work of the micro-enterprises and enhance their image.

ii. Gender-specific messages:

Target men:

- < Your neighbors are separating waste and approve of the practice (Show a neighbor supporting another for the contributions made to the development fund.)
- < Waste separation is not be a dirty task. Separation takes place prior to disposal of waste in a container.
- < Some family income derived from recyclables may be preserved if both the informal and formal waste collection systems are used.

Target women:

- < Your family members (children and spouses) and neighbors approve of separating waste. (Show different women, home-based and professionals, in their roles as resource manager in the home.)
- < Turning in recyclable waste to micro-enterprises is an expression of solidarity with neighborhood development goals.

3. Methodological Recommendations

- < Questions addressing the occupation of adults in the household need to be reworded in similar studies conducted in the future, and better quality control measures adopted, to ensure that the information is properly collected. It may also be helpful to add a time reference to these questions. For example:
 - C How many adult males live in the household?
 - C How many adult males contributed to the household income (in the last month)?
 - C Which adult male contributed the most? (Grandfather? Son/Son-in-law? Grandson? Uncle?)
 - C How many adult females live in the household?
 - C How many adult females contributed to the household income (in the last month)?
 - C Which adult female contributed the most? (Grandmother? Mother?)

Daughter/Daughter-in-Law? Niece?)

- < Future studies may need to examine the behaviors other than separation (e.g. storing garbage, putting it out, etc.) that together compose the practice of recycling.
- < Future studies need to survey people who dropped out from recycling programs. This study examined the reasons why some people recycle and others do not, but did not determine why some people who used to recycle dropped out.
- < It may be useful in the future to conduct intra-household research. In other words, survey a male and female from the same household.
- < More information should be gathered about the roles that scavengers, who serve as an informal waste collection system, play in waste disposal, and the politics surrounding this issues. Scavengers should be surveyed to better understand their views, and to create a Typology of scavengers.@
- < It could prove useful in the future to conduct a class analysis by gender to tease out any differences related to socio-economic status.

I. Introduction

A. Recycling in Southern Quito: A Municipal Initiative

In 1993, the municipality of Quito initiated a pilot recycling program in several areas in lower-middle and lower class neighborhoods. Currently, the program is being implemented in eleven neighborhoods covering approximately 4,500 families. Most of them are located in the southern part of the city. Others are nearby satellite communities. The municipality plans to expand coverage to 40,000 families. The program is managed by an autonomous municipal authority in charge of city cleaning, Empresa Municipal de Aseo (EMASEO).

The program requires participating households to separate solid waste into three categories: organic, recyclable and unusable (essentially bathroom waste such as used toilet paper). Organic waste is picked up curbside three times per week: Mondays, Wednesdays and Fridays; recyclable waste is picked up on Tuesdays; and unusable waste on Thursdays.

Neighborhood teams, called **micro-enterprises**, collect the waste. Depending on the size of the area, teams may serve more than one neighborhood. Usually, contiguous pilot program areas are served by the same micro-enterprise. The micro-enterprise is generally composed of a manager, a driver, a bell holder (who announces the curbside pickup), and two or three waste collectors. Anecdotal evidence suggests that gender plays a role in the quality of service provided by the micro-enterprises, which in turn has an impact on program participation at the household level. Specifically, female-headed neighborhood organizations promoted the pilot program more actively, and it has been argued by the municipality that female-managed micro-enterprises demonstrated more commitment to the program.

The term **micro-enterprise** may be a misnomer. Most of the employees receive salaries. In principle, no profits are involved except for the driver who rents his or her vehicle to the municipality and collects both a salary and truck rental fee. Neighborhoods with no streets, only alleys, use small carts. The average monthly cost to EMASEO of each micro-enterprise is about US \$480.

In some neighborhoods, organic waste is composted and sold. When a warehouse is available, recyclable waste may be stored and then sold in bulk by the micro-enterprise. Otherwise, it is sold the day of collection to middle men. Unusable waste is loaded on small pick-up trucks and transported to nearby dumpsters, where it is collected by a larger municipal truck and taken to the municipal landfill (Sambiza).

Citywide, the municipality spends about \$30/ton to transport waste to its landfill. The recycling program, if successful, may help reduce those costs. It can also help create neighborhood jobs, rent unused vehicles, and generate profits for neighborhood development projects. The program will also permit recycling to take place at the source of waste generation, reducing the presence of scavengers at the landfill and the health problems resulting from this practice.

The City Council Office promoted the program in neighborhoods by working with existing neighborhood committees. The committees assumed responsibility for doing a neighborhood census to identify potential program participants. These committees, largely driven by female members, also helped identify residents interested in organizing the micro-enterprise and advertised the program to residents. An agreement was established between EMASEO and the micro-enterprise once it was formed. Collectors working for the micro-enterprises further advised residents of what was required of them, and when and how curbside pick-up would operate. Currently, collectors are in charge of enforcing the program's collection policies. In principle, they are expected to refuse waste that should be picked up on other days and explain to customers why they are doing so.

The micro-enterprise turns over the money it receives from the sale of the recyclables collected to its partner neighborhood committee, which uses the revenue from the sales of compost and/or recyclables to create a neighborhood development fund. The municipality matches the funds obtained from the sale of recyclables when the money is used in small neighborhood development projects. For example, one neighborhood recently used this fund to erect street signs.

Up until June 1995, the program distributed plastic bags to project participants to help motivate them to separate and recycle waste. One free plastic bag was distributed per each bag used. In principle, families received five bags per week. The retail value of the bags was about US\$1/month. The annual cost of about US\$54,000 is one of the reasons why EMASEO stopped distributing bags. Participants reacted negatively to the discontinuation of this component of the service.

The primary problem facing the pilot program is that recycling levels are low and have deteriorated over time. Estimates are that, at best, only one third of neighborhood residents actively participate in the program. In some neighborhoods, however, the level of household participation may be even lower.

B. Designing an Educational Intervention and GreenCOM's Involvement

The municipality was interested in understanding the reasons why people dropped out of the recycling program in order to plan for an educational intervention to promote recycling in both currently served neighborhoods, and in areas where the program may be expanded. The municipality asked Corporaci\u00f3n OIKOS, an environmental education firm headquartered in Quito, to provide support for the design and implementation of this intervention. In the past, Corporaci\u00f3n OIKOS and the Environmental Education and Communication Project (GreenCOM) were partners in implementing several environmental education interventions in Ecuador. With the concurrence of the USAID Mission, GreenCOM funded a formative study, implemented in cooperation with Corporaci\u00f3n OIKOS, to help conceptualize the educational intervention. This report is intended for Corporaci\u00f3n OIKOS, which is expected to use it to help the Municipality of Quito meet its objectives pertaining to solid waste collection services and environmental protection. The report is also expected to be of interest to those who are planning and managing solid waste activities elsewhere.

The study was carried out to meet the following objectives:

- 1) To understand the impact that gender has on program promotion, waste collection services provided, and waste separation practices at the household level;
- 2) To identify the level of satisfaction residents have with the services provided;
- 3) To identify knowledge factors that can influence waste separation practices;
- 4) To identify psycho-social factors that determine waste separation at the household level; and
- 5) To identify channels that can be used to implement an educational strategy.

From a behavioral standpoint, the focus of the study was on waste separation practices. Such practices include separating household waste into organic, recyclable and unusable categories. Waste separation is perceived as the first step in the waste disposal process. This process also includes accumulation, packaging, and transport to the curb.

The study was designed in two phases. The first phase included a qualitative study which helped provide an understanding of the role of gender in the promotional activities and in the operation of the waste collection micro-enterprises. That phase also helped identify attitudes and beliefs that are potential determinants of separation. The second phase included a quantitative study to: (a) determine the level of program satisfaction among residents; (b) identify knowledge and psycho-social factors that influence separation in order to help determine the content of the messages to be included in the educational intervention; and (c) gain a better understanding of information channels that are normally used by residents in order to determine how to best disseminate the educational messages. This report presents the methodology and the major findings of both the qualitative and the quantitative studies. The major conclusions of the first phase served to elaborate the research questions that were answered through the second phase.

C. Methodology and Major Findings of the Qualitative Study

The qualitative study was implemented through field visits, in-depth interviews with four micro-enterprise managers, and over 10 separate focus groups discussions with female and male collectors and neighborhood residents, who were classified as either waste separators or non-separators.

Women played an important part in getting the pilot program on its feet. Although men hold the majority of the positions on neighborhood committees, especially the more powerful positions, most of the daily activities of the committees and the institutional relationships between the committees in the municipalities are in the hands of women.

No conclusive findings emerged about the role of gender in micro-enterprise management as there were only four micro-enterprises participating in the program. Three of them were managed by women and one was managed by a man. The one managed by a man had only recently been organized. Consequently, comparisons between female and male managed micro-enterprises were not possible.

The qualitative study indicated that all residents report that they separate their waste, regardless of being categorized as separators or non-separators by collectors and verifying this categorization through spot checks to determine the content of their waste. Those categorized as non-separators may separate their waste also. However, when they do so, they may do it for certain waste products and for purposes other than those suggested by the program. Cooked organic waste, for example, is for the most part given away to beggars, fed to animals, or given to friends and relatives to do the same. Other waste products, such as newspapers, may be reused in the household for different purposes including cleaning windows and glass, making clippings for children's homework, collecting animal waste, etc.

The qualitative study also indicated that there are four major areas of concern into which perceptions about waste separation can be grouped: financial, development-related, self-growth and self-image, and time and effort required to separate waste.

- < **Financial concerns** relate to who benefits from the sale of recyclable products: the resident or the micro-enterprise. Advocates of residents personally benefitting from the proceeds of the sale of recyclables are worried about the honesty with which the micro-enterprises manage the funds generated. They express their interest in having families who generate the waste keep the profits from the sale of recyclables. On the other hand, advocates of having micro-enterprises be the recipients of the profits argue in favor of the possibility of creating a neighborhood development fund with the proceeds from the sale of recyclables. Non-separators prefer families to keep the profits, and separators are in favor of the funds being generated with the participation of the micro-enterprises. Men seem more favorable to families keeping the profits made from the sale of recyclables.
- < Some residents are supporters of recycling because of the **economic implications** that it has for their neighborhood's development, or for industrial and/or national economic development. Those concerned with neighborhood improvement are generally separators. The others believe that waste separation can help generate raw materials for industry, reducing the need for importation of such materials and helping their country to develop more independently. These views were more commonly expressed by female non-separators than others.
- < **Self-growth and self-image concerns** are related to what may be personally gained or lost from separating waste. On the positive side, there are respondents who felt that separating waste allows them to be progressive. They learn new habits, set a good example for their children and show their level of involvement in community development affairs. These views were more often expressed by separators and by both separators and non-separator female respondents. On the negative side, there are respondents who

believe that waste separation is a demeaning task which is more appropriate for scavengers than residents to perform. Often, these respondents are non-separators and male.

- < The **time and effort needed** to separate waste was an issue among some residents. Those respondents who believed that the required tasks are not time consuming and are simple, tended to be separators. Non-separators tend to believe the opposite. Some non-separators also believed that waste separation is a **dirty task** as they wrongly believed separation requires sorting out the different kinds of waste after they have been deposited in a container. This was more common among men than women.

An important conclusion of the qualitative research is that gender may have an important influence on the practice of recycling household waste. Opposition to waste separation may come mainly from men. Getting men to come to focus group discussions was very difficult. In one case, most of the men who were being invited to attend a focus group meeting for the second time decided to send their male children to represent them. Female opposition to the waste separation and recycling program was also present, but to a lesser extent.

D. Hypotheses Guiding the Quantitative Research

- < The perception that waste separation and recycling should be done for the financial benefit of the family, rather than the community, is likely to be more prevalent among non-separators, especially males, than separators.
- < Separators are more likely to believe that separation has benefits related to self-growth and image. Separators will be perceived as being more industrious, knowledgeable, collaborative with neighborhood activities, and better parents.
- < Familiarity with the pilot program guidelines about when to dispose of, and how to separate, waste will be more common among separators than non-separators. This knowledge may influence their waste separation practices and may be greater among females than males.
- < Waste separators are likely to be more supportive of separating waste and turning waste with commercial value over to the micro-enterprise collectors, than non-separators.
- < High levels of satisfaction with the waste collection service will influence separation practices. The reasons behind satisfaction with the service need to be explored.
- < Messages about recycling waste will be more effective if they are transmitted via channels of communication which are favored by respondents. Communication channel preference may vary for men and women.

II. Methodology

A. Design

The research design used in this study is a four group comparison between separators and non-separators broken down by gender. In other words, female separators and non-separators are compared, and male separators and non-separators are compared. An attempt has been made to assure that persons who practice waste separation and those who do not are statistically comparable with respect to socio-economic status by analyzing several socio-economic related measures. The dependent variable examined in the analyses is separation behavior, and the independent variables (predictors of separation behavior) considered are knowledge, attitudes, normative and outcome beliefs, and level of satisfaction with the waste collection service.

B. Sampling

Six neighborhoods were chosen to participate in the quantitative study. Quito Sur, San José Chilibulo, El Carmen and Solanda 186, were served by the pilot recycling program at the time of the study. The other three neighborhoods, La Argelia, Solanda 189 and Solanda 185, were chosen to represent the areas where the pilot program planned to expand. Two neighborhoods, Solanda 189 and Solanda 185, were combined in the selection and analysis as they are similar and constitute sections of a larger unserved area.

The neighborhoods currently served by the pilot program were selected to increase the chances of finding separators and non-separators, and to represent both middle and lower class families. Waste collectors have indicated that, since the pilot program started, waste separation has been slightly higher in Quito Sur and possibly also in El Carmen. In contrast, waste separation rates have been lower in San Jose Chilibulo. Solanda 189 may fall in between those two poles. The assumption is that this combination of neighborhoods offers a good balance of middle and lower class families. This balance was desirable in order to help hold constant the potentially confounding influence of socio-economic status. Expansion neighborhoods were chosen because the pilot program may expand there in the near future. Furthermore, they were selected to reflect a range of middle and lower class families.

Based on the estimated unit cost per interview, the sampling plan required interviews with 400 households. The number of households to be visited per neighborhood was pro-rated to reflect the total number of pilot plan beneficiaries in the areas to be visited. For example, if among the neighborhoods chosen for this study, 20% of families lived in Neighborhood X, 20% of the sample had to come from that neighborhood. Household selection was done by randomly selecting blocks and households located in the census segments served by the pilot program. The number of households to be selected in each neighborhood was determined based on the quota per neighborhood to be met. Within each household, the study called for interviewing male or female primary providers or primary decision makers who were 18 years of age or older. The distribution of respondents per neighborhood and by gender are presented in Table 1. As the data

in that table indicate, more women than men were interviewed. This imbalance seems likely to be related to the fact that many interviews were conducted during the daytime. Respondents at home during these hours were primarily women.

Table 1
Distribution of Study Respondents by Neighborhood and Gender

| Area | Neighborhood | Men | | Women | |
|----------------|--------------------|-----|-----|-------|-----|
| | | n | % | n | % |
| Served Area | Quito Sur | 13 | 14 | 45 | 14 |
| | San Jose Chilibulo | 6 | 6 | 53 | 17 |
| | El Carmen | 26 | 28 | 64 | 20 |
| | Solanda 186 | 21 | 23 | 80 | 25 |
| Expansion Area | Solanda 185/189 | 17 | 18 | 34 | 11 |
| | La Argelia | 10 | 11 | 41 | 13 |
| Total | | 93 | 100 | 317 | 100 |

C. Questionnaire

The questionnaire used in this study is included in Appendix A. Trained interviewers asked the questions of respondents. The questionnaire was pretested twice and revised prior to its final use. It contains sections pertaining to:

- C how the recycling program operates,
- C the level of satisfaction with waste collection service,
- C waste handling practices in the household,
- C perceptions about environmental effects when waste is not given to collectors and disposed of otherwise,
- C attitudes concerning the separation of waste,
- C attitudes about giving waste with commercial value to the collectors,
- C beliefs about the drawbacks and benefits of separating waste,
- C normative beliefs about waste separation,
- C information channels for neighborhoods events,
- C participation in neighborhood associations,
- C media use,
- C socio-demographics.

Questions about: (a) attitudes about waste separation, (b) attitudes about giving waste with commercial value to collectors, (c) normative beliefs about separating waste, and (d) beliefs about the benefits and drawbacks of waste separation all used a Likert scale to code answers. In these

scales, 1 means *ATotally Disagree@* and 5 means *ATotally Agree@*. To facilitate data gathering, drawings of faces expressing levels of agreement were used. All the faces were on a sheet of paper which was held by the respondent when listening to the question. The respondent orally expressed his/her level of agreement with the statements being read by pointing out which face better reflected the level of intensity of the attitude or belief being measured. This procedure has been used extensively by research firms working in Ecuador. The procedure was pretested along with the questionnaire.

D. Measures of Determinants

The presumed determinants of the behavior, separation of waste, can be grouped into the following categories: 1) knowledge, 2) attitudes about waste separation, 3) social pressure to practice the suggested practices, 4) beliefs about what may be achieved if the those practices are performed, and 5) level of satisfaction with the service. These determinant were also analyzed separately by gender.

1. Developing Measures of the Causes of the Waste Separation

Construction of Composite Scales for Knowledge, Attitudes and Social Pressure (Normative Beliefs)

Respondents were asked if they knew if a collection and recycling program exists in their neighborhood. Those persons who answered *Ayes@* were then asked to correctly identify different guidelines for recycling required by the pilot recycling program, including how to separate waste, how to pack it, and which day each type of waste should be given to collectors. Correct responses to these questions were added together to create one composite score for knowledge about the program. Respondents who did not know if a collection and recycling program existed in their neighborhood were not asked about pilot program guidelines.

Three different sets of Likert-scaled questions about (a) attitudes towards waste separation, (b) attitudes about giving waste with commercial value to collectors, and (c) normative beliefs were added together by topic to form three different composite scales.

Reliability analyses were performed for each of the composite scales constructed and each of the variables met the minimum required score of 0.7 or better. Scores are provided in Appendix B.

Grouping of Outcome Beliefs

Perceived benefits and drawbacks of waste separation are referred to in this report as outcome beliefs. Questions about outcome beliefs also used a Likert scale. The answers provided to these questions were used to perform a factor analysis in order to determine if subgroups of outcome belief questions were associated.

Three groups of associated outcome beliefs were discovered in the factor analysis: 1) personal/family benefits associated with waste separation, 2) distant benefits of waste separation, and 3) drawbacks associated with waste separation. Personal benefits include aspects associated with self-growth or self-image. Distant benefits are benefits associated with the development of the country. The drawbacks may be due to financial reasons or to the fact that the task of waste separation itself is considered demeaning. Results of the analysis are provided in Appendix B.

2. Measuring Behaviors: Definitions of Separation

Two definitions of waste separation were established: the first *constructed definition* is more restrictive and associated with performing separation within a certain time frame, but it is also more objective; the second *self description* definition is more subjective and not bound to time limitations.

Constructed Definition

This is a strict definition of waste separators and non-separators. Two questions in the questionnaire helped determine: (a) whether the respondent had a certain waste product in the household the week prior to the survey, and (b) if it were separated from organic, unusable or recyclable waste prior to giving it to the collector. Respondents were considered separators if, during the recall period, they always gave to the collector all waste products from their household separated according to program guidelines. Anyone who had a given waste product but had not given that product properly separated to the collector was considered a non-separator. No partial credit was given for disposing of some waste products in a separated fashion but not others. Thirty-seven cases were excluded from this definition as they did not provide an answer as to whether or not they separated their waste when giving it to the collector. Thirty-two of these respondents were women and 5 were men.

Self-Description Definition

This is a self-labeled definition of separators and non-separators. The survey instrument included a question asking respondents whether or not any waste separation was practiced in their home. The three possible answer choices included *yes*, *no*, and *I don't know*. This question is used as one way of defining waste separators and non-separators in this report. Those persons who responded *I don't know* were excluded. Eleven respondents were excluded as a result of not knowing or giving no answer, 2 men and 9 women.

Similarities Between the Two Definitions of Separation

To determine the similarities between the two classifications of separators that emerged from the use of different definitions of separations the relationship between separation and program

participation may be studied. This approach would suggest that, regardless of the definition used, the percentage of separators should always be higher in pilot program neighborhoods than elsewhere because there is no promotion of separation outside the pilot program area. Any separation that may be occurring in non-pilot neighborhoods may be due to natural events occurring in those communities and not the result of an induced performance. Table 2 presents the results of this comparison and it confirms the expectation. The percentage of separators is higher among respondents living in neighborhoods participating in the pilot program. This is true for both definitions of separation.

Table 2
Comparison of Participation Status and Waste Separation (Column Percent)

| Neighborhood | Self-Described Separator | | | Constructed Definition of Separator | | | | | | |
|-------------------|--------------------------|----|----------|-------------------------------------|---------|----------|----------|-----|----|------|
| | No n | % | Yes n | <i>p</i> | No n | Yes n | <i>p</i> | | | |
| Participatory | 157 | 67 | 141 | 86 | .001 | 120 | 63 | 163 | 89 | .001 |
| Not Participatory | 77 | 33 | 23 | 14 | | 70 | 37 | 20 | 11 | |

The two different definitions of separators and non-separators were also compared using a cross tabulation. Results of that comparison are presented in Table 3. They indicate a statistically significant correlation between the two measures. That is, 63% of non-separators using the self-description were also considered non-separators by the constructed definition. Furthermore, 67% of those classified as separators by self-description were considered also as separators by the constructed definition. These results suggest that the measures could be used interchangeably. However, despite the correlation detected, the self-descriptions are more generic and are not necessarily linked to turning in waste in any given fashion to a waste collector. In fact, those who self-describe themselves as collectors could very well be separating their waste but giving it to scavengers. Despite the correlation, these subtleties suggest the need to use both definitions of separation for the analysis to be performed as part of this study to predict waste separation practices.

Table 3
Correlation Between the Two Definition of Separators

| Constructed Definition of Separation | Self-Described Separation | | | | |
|--------------------------------------|---------------------------|-----|-----------|-----|----------|
| | Non-Separator | | Separator | | <i>p</i> |
| | n | % | n | % | |
| Non-Separator | 116 | 63 | 59 | 33 | .001 |
| Separator | 68 | 37 | 121 | 67 | |
| Total | 184 | 100 | 180 | 100 | |

E. Analysis Approach

Logistic regression was used to explore which of the presumed causes predict waste separation. In this exploration, the presumed causes are called *predictors*. This analysis was done in two stages. Composite predictors were used in the first stage, and components of those composites were used in the second stage.

III. Summary of Results

Waste separation practices were examined using two different definitions of separation, one constructed from two different survey questions and one using a question that directly asks respondents if they separate waste. This was done in an effort to examine all possible predictors of waste separation behavior, both among persons who perceive themselves to be separators as well as those who are more objectively defined as such.

The fact that the sample consisted of many more women than men raises the question about the extent to which results can be generalized to all residents in the neighborhoods visited. The assumption is that the sample may be skewed towards residents who generate their income partially or fully after hours or who do not work outside the home or generate income from the home.

An integration of the findings using both definitions of separation indicates that there are four predictors of separation for all respondents:

- < knowledge about recycling program guidelines and definitions of different types of waste;
- < satisfaction with collection services derived from the perception that it is reliable;
- < agreement with giving waste with commercial value to the municipal collectors; and
- < social pressure to separate waste.

Gender similarities were revealed in several areas. Predictors of separation among female respondents were:

- < knowledge of program guidelines;
- < satisfaction with collection service;
- < agreement with giving waste with commercial value to the municipal collectors; and
- < beliefs about social pressure emanating from neighbors and family members (spouses and children).

Among male respondents, the variables that emerged as the best predictors of waste separation were:

- < knowledge of program guidelines;
- < satisfaction with collection service; and
- < beliefs related to social pressure emanating from neighbors.

Thus, agreement with turning in waste with commercial value to municipal collectors is a predictor of separation for females but not for males. One difference that emerged was that male respondents place more importance on whether or not their neighbors approve of separating waste, while females were sensitive to the approval of their neighbors *and* family members.

The emergence of attitudes about giving valuable waste to collectors as a predictor of separation is most likely to be an indication of the importance that respondents attribute to income and the use of the funds generated from the sale of precious waste products. Although a large part of the research conducted was devoted to understanding attitudes and beliefs about separation practices, these results underscore the economic importance of giving commercially valuable waste to collectors. Due to the low socio-economic level of the households in the neighborhoods visited and in light of the qualitative research results, it is possible to assume that the general preference among families is to sell their household waste products such as cardboard and certain types of glass themselves and keep the profit. Traditionally, these are waste products that families have sold to scavengers. The income generated from the sale is likely to be controlled by women in the household. The pilot program asks residents to give up that revenue for the common good. Thus, if women are to support the pilot program, they need to be persuaded that neighborhood development is as or more important than their income. In conventional social marketing terms, foregoing income is a difficult product to promote.

The difficulty of asking people to forego income raises the question of what is the final objective of the recycling program. If it is to reduce the amount of waste that ends up in the landfill, then does it matter if the recycling is done through the pilot program micro-enterprises or through scavengers? A corollary question is the extent to which the pilot program may be competing with an existing informal recycling system and if this competition is beneficial to families, neighborhoods, and the environment. Can and should both the collection systems continue to operate side-by-side? Only stakeholders, both women and men, can arrive at the answers to these questions.

Scavengers are selective in the type of waste products that they recycle. Because their interest is limited primarily to cardboard and certain types of glass, families that rely mainly on scavengers would still be forced to dispose of their raw organic waste and the rest of the recyclables (e.g., plastics, papers, cans and metals, etc.), as well as unusable waste, on their own. Many products could end up in ravines or below cliffs. Consequently, it may be possible to consider the expansion of the informal waste collection system to include these other waste products. Scavengers could be organized into this type of micro-enterprise. Such expansion, however, would require a better understanding of the market for new waste products scavengers would handle, and if it would be possible to organize scavengers to manage the collection and sale of such products.

The effort to convince residents of the importance of neighborhood improvement through the sale of valuable waste products by the micro-enterprises may require several actions. The relative merits of suggested courses of action should be judged in the context of a stakeholders meeting.

One approach is to promote resident participation in deciding how to use the profits made from the sale of recyclables. Because the amount of money that can be made from the sale of recyclables may be small at the outset of the renewed promotion of recycling through the pilot program, the type of neighborhood improvement projects that can be implemented are likely to be small in scope. However, as more funds are generated, the implementation of larger projects may be possible. Neighborhood participation in deciding how to use the profits made from the sale of

recyclables by the micro-enterprises, therefore, would become an on-going activity. Besides, once a neighborhood development problem has been addressed, there will be others to be resolved. The funds generated through the recycling program may contribute to its solution.

In addition to participating in decision-making about the use of neighborhood improvement funds, the community must have tangible evidence of what has been done with the funds. Reminders may have to be used regularly. If the community decides to save up funds for a larger project, the reminder may include messages about how much money has been collected and how much more is needed to meet a target that was jointly decided upon.

Furthermore, separators who are contributing to the neighborhood development fund may need to be publicly recognized for their contributions. Such recognition could potentially take the form of stickers on the doors of separators. The cultural acceptability of such an approach will need to be examined and pretested.

Messages about recycling and separating waste must be addressed to both men and women. In the particular case of men, messages may be presented in the form of one neighbor supporting another for the contributions made to the development fund. Public recognition is a way to demonstrate to others that a family is adhering to social norms and that families are acting in accordance with the expectations of their neighbors.

The success of recycling through micro-enterprises may be partially based on a message that also communicates to residents that it is acceptable for them to dispose of some of their waste products through scavengers. However, since scavengers may continue to deal with only certain types of waste products, the rest of the solid waste must be given to the micro-enterprises. And when giving waste to the micro-enterprises, it must be separated into the three categories that the pilot program uses.

Educating residents about the contents of those waste categories should definitely contribute to the performance of waste separation, as will informing them of program guidelines in general. An understanding of the different categories of waste as defined by the pilot recycling program is vital in order for the participants to be able to make proper distinctions about how to separate their waste for pick-up on designated days.

Ensuring that residents feel that the waste collection service is reliable will also help promote separation and recycling. Testimonies of satisfaction with the service due to its reliability will be helpful in promoting the work of micro-enterprises and in enhancing their image. However, monitoring the actual performance of the micro-enterprises must be considered by EMASEO.

Last, but not least, consideration needs to be given to appropriate technical solutions for handling organic waste. It is assumed that in the southern neighborhoods of Quito, as elsewhere, most of the waste generated by families is organic. Although residents report they are using their cooked organic waste, they are disposing of their raw organic waste. Micro-enterprises may be taking this organic waste to the landfill, instead of producing compost. The reasons may be both technical and economical in nature. Micro-enterprise managers and neighborhood committees do

not always fully understand how to compost. In cases where they have composted, they may not have been able to find buyers for the compost. If this is true, a tremendous effort has been made to deal with a small portion of the waste generated by the neighborhoods (non-organic waste), and the bulk of the waste generated in these neighborhoods (organic) is continuing to be transported to the landfill.

IV. Conclusions and Recommendations

Conclusions

Study findings suggest that the municipal government's perception of waste differed greatly from the residents' perspective. From the point of view of neighborhood residents, the only real waste was unusable bathroom waste. All other types of waste were viewed as valuable commodities that could either be reused by household members, given to others to reuse, or sold to scavengers. In contrast, the municipal government viewed waste from a systems approach, as an issue that needed to be addressed in a systematic way in order to improve communities in the municipality. Although the municipality recognized the usefulness of the role that scavengers play as an informal part of the waste collection system, it was concerned about reducing the number of scavengers who comb its landfill and decreasing the adverse health effects this practice can cause. To address this issue, the municipal government tried to create incentives for scavengers to operate from collection points inside the city, rather than the site of the landfill. At the same time, it provided protective equipment (e.g., gloves) to scavengers for handling waste.

Recommendations

Results of the analyses led to the formulation of several recommendations that can be classified into three categories: those pertaining to programmatic issues, those pertaining to educational issues, those pertaining to methodological issues.

A. Programmatic Recommendations

- 1) *Organize a meeting of male and female stakeholders, including neighborhood representatives, to decide the future direction of the program.*

The recycling program is a formal waste collection system that parallels the informal system, which consists of scavengers that visit the neighborhood to buy certain waste products. Although the recycling program greatly differs from the informal waste collection system, they compete. Most likely, this competition results from the fact that some of the residents in the served neighborhoods do not want to give up the discretionary income obtained by selling recyclable products to scavengers. Some residents may also have realized there is money to be made in selling recyclables that scavengers do not necessarily buy.

The municipality, micro-enterprises, informal sector scavengers, and residents are all stakeholders. Together they should discuss in-depth the role that scavengers play in the disposal and recycling of waste, and determine if the ultimate goal of the municipality is to reduce the volume of waste in the landfill or to create development funds for participating

neighborhoods. If the goal is to reduce the amount of waste, does it matter if the recycling is done through the pilot program micro-enterprises or through scavengers, or a combination of both? Can and should both collection systems continue to operate side-by-side? What are the comparative advantages and disadvantages of having parallel systems? The success of recycling through micro-enterprises could be enhanced through community messages saying that it is fine for residents to dispose of some of their waste products through scavengers. The message can say that they may also dispose of the remaining waste through the system supported by the municipality. However, a compromise solution, built upon the positive elements of both systems, may be required. One possible alternative is to organize the scavengers into their own micro-enterprises. Participating stakeholders are likely to raise other viable solutions.

Furthermore, the discussion should address the issue of how to create an equitable distribution of the benefits derived from recycling between men and women. The scavengers who go from house to house trying to purchase recyclable products are generally women. The income generated by the sale of recyclables is used by women. Most of the micro-enterprise personnel are women. Furthermore, it is possible that working women who are home-based more frequently practice waste separation and recycling than other women who work outside the home. Male and female residents of served neighborhoods need to be involved in deciding how to spend accrued funds for neighborhood development purposes.

- 2) *Evaluate alternative ways of handling organic waste, including the feasibility of composting.*

Most of the waste generated by families is organic. Stakeholders should assess appropriate technical solutions for handling organic waste. Although residents report using cooked organic waste, they dispose of their raw organic waste. Some micro-enterprises are taking the disposable waste to the landfill rather than composting it, either because the micro-enterprise managers and neighborhood committees do not understand how to compost, or because they have not have been able to find buyers for compost in the past. Markets for compost need to be explored, and if found, managers and committees should then be taught how to manage this waste effectively.

B. Educational/Promotional Recommendations

If the pilot program continues to be implemented in its current form, the following recommendations should be applied.

- 1) *Educate the public about pilot program guidelines and terms to promote the correct separation of waste which is given to collectors in the micro-enterprises. Preferably, messages should be disseminated on a continual basis.*

Educational messages should provide residents with the practical knowledge they need

about the program requirements. Relevant information includes the waste collection schedule and detailed information about what types of waste products are included in the three categories of waste used by the program. Even among those who are now waste separators, knowledge of the program requirements for separating and collecting waste, particularly how different types of waste are classified, is not as high as it could be. Any educational intervention must include accurate information, and perhaps actual hands-on demonstrations, on the proper separation of waste. The qualitative research results revealed that some men have the misconception that waste separation takes place after it is disposed of inside the home, requiring them to rummage through garbage. Program guidelines should be clarified at the same time that misconceptions are dispelled.

Messages concerning program guidelines should be disseminated through multiple channels at regular intervals. Visual reminders of how the program operates might be helpful. This could take the form of stickers that residents can put on their doors.

- 2) *Convince residents that giving commercially valuable waste to collectors is beneficial to themselves and the community as a whole. Involve the community in setting neighborhood development goals for using funds generated by the sale of recyclables collected by the micro-enterprises.*

Waste has become a valuable commodity and can be sold for personal gain to middle men. Messages should explain and reinforce how recycling waste can be an excellent way of generating funds to reinvest into community development projects for the benefit of all. A greater emphasis should be placed on promoting the common good over family profit.

In order to promote recycling under the current pilot program, male and female residents need to be reassured that the revenues received by the micro-enterprise will be used in a productive fashion. The idea that residents are concerned about who benefits financially from the sale of recyclable products is further supported by the results of the qualitative phase of the study, which revealed some concerns on the part of residents about the honesty of the micro-enterprises. In order to create a sense of community ownership, and foster a sense of trust and commitment to the recycling program, male and female residents and micro-enterprise members must collaborate in deciding upon a feasible project to undertake with the recycling revenue, and work together to develop strategies for obtaining this common goal.

The goals that neighborhoods set for themselves may vary in scope. When medium to long range goals have been chosen, a strategy to achieve those goals may be set in place and residents should be informed regularly of progress made in collecting funds to meet those goals. This should clarify the destination of profits among residents and improve the image of the micro-enterprise in the community.

- 3) *Publicly recognize residents who are contributors to the recycling effort in their neighborhood.*

Residents who are making a concerted effort to follow the program guidelines, sacrificing individual profit for the betterment of the community, should be publicly commended, perhaps given a certificate or small token of appreciation, and held up as an example to their neighborhood. This would serve to reinforce this positive behavior in the recipient, set a good example, and possibly exert social pressure on others to follow suit. Publicly recognizing model residents is a way to demonstrate to others that a family is adhering to social norms and that families are acting in accordance with their neighbors' expectations. Also, obtaining testimonies of residents' satisfaction with the service due to its reliability should further prove to be helpful in promoting the work of micro-enterprises and in enhancing their image.

- 4) *Interpersonal communication channels should be combined with other media channels to disseminate promotional messages about the recycling program.*

Stakeholders need to consider such common sources of information as radio, loud speakers, neighborhood assemblies, housing committees, churches and sports clubs as potential communication channels to disseminate educational messages. In general, relatives and friends served as the most common sources of information for news about neighborhood events for male and female respondents, while television was the most widely used formal media source. Churches and neighborhood assemblies were structured sources of neighborhood information. Sports clubs may serve as an additional avenue of news for men. Examples of other communication channels include print materials, such as stickers, posters, etc., which may be displayed in public places. When using associations to convey messages, associations attracting both men and women should be utilized.

- 5) *Develop promotional messages about recycling waste.*

Messages about recycling and separating waste must be targeted to both men and women. Study results indicate that men respond to the normative pressure exerted by neighbors to separate waste. Women respond to pressure from neighbors as well, but are more likely than men to seek their partners' or children's approval before separating waste. The qualitative research suggested that opposition to waste separation at the household level comes largely from men, reinforcing the conclusion that they deserve special attention in any educational efforts. As the number of residents practicing separation increases in a neighborhood, this should create a stronger tide of social pressure for others, both men and women, to separate their waste.

Educational and promotional messages about recycling and separating waste can be general, addressed to both men and women, or specifically targeted to one sex.

Suggested Topics of General Messages:

If the stakeholders determine that the goal of the municipality is to reduce the amount of waste destined for the landfill:

- < The city approves of both the formal pilot program collection system and the informal collection system, and dispose of some waste products through scavengers. Both are good options.
- < The three categories of waste used by the pilot recycling program are: organic, recyclable, and unusable. Organic waste consists of raw and cooked food products. Recyclable materials include paper, boxes, glass, plastic, and metal. Unusable waste is defined as bathroom products.
- < The types of plastic that can be recycled are(describe in-depth)
- < Each of the three categories of waste, organic, recyclable and unusable, is picked up on different days of the week. Put waste on the curb to be collected on the designated pick-up day. Request a collection schedule sticker from the micro-enterprise in your neighborhood.
- < Put garbage out on the morning of the collection day, not the night before.
- < If garbage is not collected on the designated day, store it or give it to scavengers, do not dispose of it in the ravine.
- < Alert the micro-enterprise manager if garbage is not collected according to the schedule.
- < Recycling waste generates funds that can be used to reinvest into community development projects in your neighborhood.
- < You are invited to participate on a planning team to decide how to use recycling revenues generated by your micro-enterprise.
- < Offer testimonies from program participants who are satisfied with the pilot collection program to help promote the work of the micro-enterprises and enhance their image.

Gender-specific messages:

- < *Target men:*

Your neighbors are separating waste and approve of the practice (Show a neighbor supporting another for the contributions made to the development fund.)

Waste separation need not be a dirty task. Separation takes place prior to disposal of waste in a container.

Some family income derived from recyclables may be preserved if both the informal and formal waste collection systems are used.

< *Target women:*

Your family members (children and spouses) and neighbors approve of separating waste. (Show different women, home-based and professionals, in their roles as resource manager in the home.)

Turning in recyclable waste to micro-enterprises is an expression of solidarity with neighborhood development goals.

C. Methodological Recommendations

< Questions addressing the occupation of adults in the household need to be reworded in similar studies conducted in the future, and better quality control measures adopted, to ensure that the information is properly collected. It may also be helpful to add a time reference to these questions. For example:

C How many adult males live in the household?

C How many adult males contributed to the household income (in the last month)?

C Which adult male contributed the most? (Grandfather? Son/Son-in-law? Grandson? Uncle?)

C How many adult females live in the household?

C How many adult females contributed to the household income (in the last month)?

C Which adult female contributed the most? (Grandmother? Mother? Daughter/Daughter-in-Law? Niece?)

< Future studies may need to examine the behaviors other than separation (e.g. storing garbage, putting it out, etc.) that together compose the practice of recycling.

< Future studies need to survey people who dropped out from recycling programs. This study examined the reasons why some people recycle and others do not, but did not determine why some people who used to recycle dropped out.

< It may be useful in the future to conduct intra-household research. In other words, survey a male and female from the same household. Such an approach would provide more insightful information about household dynamics concerning recycling and the use of recycling funds. For example, men would prefer that households retain the income generated from selling recyclable products. However, there are indications that such income is mainly used by women in the

household who may be more disposed to have such income be used for neighborhood development activities. This disparity raises the issue of whether men's position may be explained by the fact that men may have to provide to women any income that women would give up for neighborhood development activities connected with the recycling program. Intra household data would help clarify issues such as this one.

- < More information should be gathered about the roles that scavengers, who serve as an informal waste collection system, play in waste disposal, and the politics surrounding this issues. Scavengers should be surveyed to better understand their views, and to create a **A**typology of scavengers.@
- < It could prove useful in the future to conduct a class analysis by gender to tease out any differences related to socio-economic status.

V. Socio-Demographic Profile of the Sample

For separators and non-separators, socio-demographic characteristics such as gender, occupation, level of education as well as for the characteristics of the dwelling occupied by respondents were compared. These comparisons were made to determine if the two groups, waste separators and non-separators, were comparable. The constructed definition of separation was used in these comparisons. Results concerning the socio-demographic characteristics of respondents are provided in Table 4. Those concerning the characteristics of their dwelling are presented in Table 5.

Results presented in these tables indicate that the groups are comparable because no statistically significant differences were found between the two study groups of concern. The exception to the rule is the occupation of the adult female in household who is either the head of household or the spouse of the head of household. Among separators, it was significantly more likely for that occupation to be in the **A**self employed/professional/merchant@category. Among non-separators, the occupation was more likely to be in two categories, **A**office worker/cottage industry@ or **A** vendor/working class/maid@.

However, as only 143 respondents provided an answer to the question on the occupation of the adult female in the household, the information was considered to be incomplete for use as a covariate. The reason for the low response rate is unknown. This type of question may need to be reworded for use in future surveys and/or better quality control measures taken. It would be interesting to explore if, among women and men, working at home may positively influence waste separation practices. Questions which specifically ask respondents if they work inside or outside the home are needed in future studies.

Table 4
Socio-Demographic Profile of Respondents by Garbage Separation Practices

| Socio-economic Characteristics | Separation Practices | | | | <i>p</i> |
|--|----------------------|----------|------------|----------|----------|
| | Non-Separators | | Separators | | |
| | n | % | n | % | |
| Sex of Respondents | | | | | |
| Male | 42 | 22 | 46 | 25 | .49 |
| Female | 148 | 78 | 137 | 75 | |
| Occupation of Primary Income Earner | | | | | .84 |
| Mason/mechanic/cottage industry/merchant | 54 | 28 | 57 | 31 | |
| Driver/working class/guard | 46 | 24 | 39 | 21 | |
| Public servant/military | 18 | 10 | 22 | 12 | |
| Private employee/dental technician | 13 | 7 | 18 | 10 | |
| Housewife | 5 | 3 | 3 | 2 | |
| Pension | 19 | 10 | 17 | 9 | |
| Other | 34 | 18 | 26 | 14 | |
| Occupation of Female Spouse/Companion | | | | | .01 |
| Unemployed | 0 | 0 | 1 | 2 | |
| Self-employed/professional/merchant | 27 | 38 | 41 | 68 | |
| Office worker/cottage industry | 19 | 26 | 9 | 15 | |
| Vendor/working class/maid | 21 | 29 | 7 | 12 | |
| Pension | 5 | 7 | 2 | 3 | |
| Education of Head of Family | | | | | .12 |
| Up to 6th grade | 75 | 40 | 53 | 30 | |
| Up to 12th grade | 88 | 47 | 98 | 55 | |
| Some/full post secondary | 23 | 12 | 26 | 15 | |
| Education of Adult Female in the House | | | | | .17 |
| None | 2 | 1 | 1 | 1 | |
| Up to 6th grade | 70 | 39 | 52 | 30 | |
| Up to 12th grade | 93 | 51 | 92 | 54 | |
| Some/full post secondary | 17 | 9 | 27 | 16 | |

Table 5
Dwelling Characteristics by Garbage Separation Practices for Constructed Definition

| Household Characteristics | Separation Practices | | | | <i>p</i> |
|--|----------------------------|-------------|------------------------|-------------|----------|
| | Non-Separators | | Separators | | |
| | n | % | n | % | |
| Type of House | | | | | |
| One story home | 74 | 39 | 70 | 38 | .27 |
| Two story home | 64 | 34 | 57 | 31 | |
| Apartment | 25 | 13 | 37 | 20 | |
| Unfinished house | 18 | 10 | 12 | 7 | |
| Room | 6 | 3 | 2 | 1 | |
| Rooming house | 3 | 2 | 5 | 3 | |
| Source of Water for Kitchen | | | | | |
| Outside home | 76 | 40 | 76 | 41 | .76 |
| Home service | 114 | 60 | 107 | 59 | |
| Human Waste Disposal Method Used | | | | | |
| Private toilet | 182 | 96 | 179 | 98 | .17 |
| Public toilet | 4 | 2 | 3 | 2 | |
| Latrine | 4 | 2 | 0 | 0 | |
| Outdoors/open space | 0 | 0 | 1 | 1 | |
| Number of Bedrooms | | | | | |
| Smaller house (2 or fewer) | 94 | 49 | 100 | 55 | .32 |
| Larger house (3 or greater) | 96 | 51 | 83 | 45 | |
| Household Characteristic | Non-Separators n | mean | Separators n | mean | <i>p</i> |
| Mean Number of Appliances in the Home (i.e., radio, T.V., vacuum, dish washer , VCR) | 190 | 2.4 | 183 | 2.2 | .07 |

VI. Detailed Results: Characteristics of Waste Separators Versus Non-Separators

A. Introduction

To determine which variables can statistically predict separation, the two definitions of separation described earlier were used: constructed definition and self-described. The analysis included all valid cases in the sample, i.e., residents in neighborhoods currently served by the pilot program as well as neighborhoods targeted for expansion. Both the qualitative and quantitative phases of this study have shown that waste separation is practiced in both types of neighborhoods even though it is a more common practice in the pilot program area than elsewhere.

Logistic regression was used in the first stage of the investigation to help determine which variables act to increase the chances of respondents being categorized as separators. The variables examined through this procedure as possible predictors of waste separation practices include:

- C the composite measure of knowledge;
- C the different composite measures of attitudes (about separating waste and giving waste with commercial value to the collectors);
- C the three composite measures, found in Appendix B, on outcome beliefs about recycling constructed through factor analysis (personal/family benefits associated with waste separation, distant benefits of waste separation, and drawbacks associated with waste separation);
- C the measure of degree of satisfaction with the waste collection system; and
- C exposure to messages about recycling.

In the second stage of the process, items pertaining to respondents' knowledge about the pilot recycling program were analyzed using the chi-square statistic. Tables compare the percentage of correct responses for non-separators and separators. Non-parametric tests, using Mann-Whitney U, were performed for all other items. Non-parametric analysis was used as the distribution of the responses to the items were generally skewed. Tables for these analyses report the mean rank for each item. The discussion of results is presented first.

B. Using a Constructed Definition of Separation

1) Composite Measures

Of all the independent variables included in the regression model, three emerged as predictors of waste separation for all valid cases in the sample:

- < knowledge about how the recycling program works,
- < attitudes about giving waste with commercial value to collectors, and

< the level of satisfaction with waste collection system.

This means that respondents with greater knowledge, more positive attitudes and higher satisfaction were more likely to be categorized as waste separators.

When the different potential predictors of separation were examined by gender, the findings are the same for female respondents: the same predictors of separation for all cases predict separation for women. However, the results are different for men. Only one independent variable emerged as a predictor of separation: normative beliefs about separating waste. Tables 6 presents results for all valid cases in the sample. Tables 7 and 8 present results for men and women, respectively. In these tables, the top includes the variables that emerged as statistical predictors. The bottom contains the variables excluded from the calculations because they did not meet statistical significance.

Table 6
Predictors of Separation Behavior for All Respondents
(Constructed Definition of Separation)

| Composite Variables Included in Logistic Regression Model | Beta Weight | Partial Correlation R | <i>p</i> |
|---|-------------|-----------------------|----------|
| Knowledge about recycling program/classification of waste | .02 | .13 | .001 |
| Attitudes about waste with commercial value | .08 | .09 | .02 |
| Satisfaction with neighborhood waste collection system | .34 | .15 | .0003 |
| Composite Variables Excluded From the Logistic Regression Model | Score | Partial Correlation R | <i>p</i> |
| Attitudes about separating waste | .005 | N/A | .94 |
| Normative beliefs about separating waste | .13 | | .71 |
| Personal outcome beliefs | .73 | | .39 |
| Distant outcome beliefs | .15 | | .70 |
| Negative outcome beliefs | .56 | | .45 |
| Exposure to messages about recycling waste | .04 | | .85 |

Table 7
Predictors of Separation for Male Respondents
(Constructed Definition of Separation)

| Composites Included in Logistic Regression Model | Beta Weight | Partial Correlation R | <i>p</i> |
|--|-------------|-----------------------|----------|
| Normative beliefs about separating waste | .14 | .14 | .04 |

| Composites Excluded From Logistic Regression Model | Beta Weight | Partial Correlation R | <i>p</i> |
|---|--------------------|------------------------------|-----------------|
| Satisfaction with neighborhood waste collection system | 2.2 | N/A | .14 |
| Attitudes about waste with commercial value | 1.03 | | .31 |
| Personal outcome beliefs | .08 | | .78 |
| Distant outcome beliefs | 1.4 | | .24 |
| Negative outcome beliefs | .08 | | .78 |
| Exposure to messages about recycling waste | .002 | | .96 |
| Attitudes about separating waste | .34 | | .56 |
| Knowledge about recycling program/classification of waste | .53 | | .47 |

Table 8
Predictors of Separation Behavior for Female Respondents
(Constructed Definition of Separation)

| Composite Variables Included in Logistic Regression Model | Beta Weight | Partial Correlation R | <i>p</i> |
|---|-------------|-----------------------|----------|
| Attitudes about waste with commercial value | .10 | .09 | .02 |
| Knowledge about recycling program/classification of waste | .26 | .15 | .001 |
| Satisfaction with neighborhood waste collection system | .36 | .15 | .0009 |
| Composite Variables Excluded From Logistic Regression Model | Score | Partial Correlation R | <i>p</i> |
| Personal outcome beliefs | .73 | N/A | .94 |
| Distant outcome beliefs | .15 | | .70 |
| Negative outcome beliefs | .56 | | .45 |
| Exposure to messages about recycling waste | .04 | | .85 |
| Attitudes about separating waste | .01 | | .94 |
| Exposure to messages about recycling waste | .04 | | .85 |

C. Individual Components of Statistically Significant Composites

As expressed earlier, composite variables identified as predictors of separation in the previous analyses were next examined on an item-by-item basis in order to explore which of the items that make up the composite helped to distinguish separators from non-separators. The following findings emerged:

< Knowledge

The survey instrument included seven questions addressing the guidelines for sorting and collecting waste under the pilot recycling program. Three additional questions asked respondents to provide a definition for three waste categories: organic, recyclable, and unusable. Each of the ten questions had only one right answer.

A significantly higher percentages of separators than non-separators knew how often collectors pass, how the trash should be packed, and when different waste products are collected. Results are provided in Table 9.

An analysis of the differences by gender indicated that, in general, the same differences found for the sample as a whole were also found for women, except for one question: **A** when recyclable waste products are collected?@ Results for women are presented in Table 10.

The analysis was not done for male respondents because knowledge did not emerge as a predictor of separation for males.

< **Attitudes About Waste With Commercial Value**

Separators believed more strongly than non-separators that giving waste with commercial value to the collector is useful, profitable and expresses solidarity. Results are presented in Table 11. Female separators felt more strongly than female non-separators that giving waste with commercial value to the collector shows solidarity. Results for female respondents are presented in Table 12.

Again, no data are presented for men as the attitudes in question did not emerge as a predictor of separation among men.

< **Normative Beliefs About Separating Waste**

Male separators more strongly believed than male non-separators that their neighbors approve of separating household waste. Results are presented in Table 13.

This analysis was not done for women because this was not a predictor of waste separation among them.

< **Satisfaction with Neighborhood Waste Collection System**

Female separators, who are predominantly from neighborhoods where the pilot program is present, were significantly more satisfied with their collection system than female non-separators for several reasons. Female respondents who rated their waste collection system as excellent or good did so primarily because they found it to be reliable, with collectors coming by on scheduled days. Female respondents who were somewhat dissatisfied with the collection system in their neighborhood, rating it only alright, reported that the collectors miss days. Among female respondents who were very dissatisfied with their collection system, non-separators more commonly reported that collectors do not come by as scheduled, while separators more often complained that their neighbors do not use garbage bags. Additional information about respondents=degree of satisfaction is provided in Appendix C.

Table 9
Knowledge by Separation Behavior for Program Participants
(Percent Answering Correctly Using Constructed Definition of Separation)

| Knowledge Question | Non-Separators | Separators | | <i>p</i> |
|--------------------|----------------|------------|---|----------|
| | n % | n | % | |

| | | | | | |
|---|----|----|-----|----|-----|
| How must the trash be separated? | 14 | 52 | 61 | 46 | .57 |
| How often do recycling collectors pass? | 16 | 60 | 105 | 79 | .03 |
| How must you pack the trash for pick-up? | 23 | 85 | 129 | 97 | .01 |
| When do they collect kitchen (cooked) waste? | 10 | 37 | 79 | 59 | .03 |
| When do they collect unusable waste? | 6 | 22 | 59 | 44 | .03 |
| When do they collect boxes, paper, plastic and bottles? | 7 | 26 | 66 | 50 | .02 |
| Who is responsible for collecting waste in your neighborhood? | 4 | 15 | 18 | 14 | .86 |
| Which household waste can be classified as organic? | 14 | 52 | 86 | 65 | .21 |
| Which household waste can be classified as recyclable? | 17 | 63 | 82 | 62 | .90 |
| Which household waste can be classified as disposable? | 11 | 41 | 60 | 45 | .68 |

Table 10
Knowledge by Separation Behavior for Female Program Participants
(Percent Answering Correctly Using Constructed Definition of Separation)

| Knowledge Question | Non-Separators | | Separators | | <i>p</i> |
|---|----------------|----|------------|----|----------|
| | n | % | n | % | |
| How must the trash be separated? | 11 | 52 | 48 | 49 | .75 |
| How often do recycling collectors pass? | 12 | 57 | 79 | 80 | .03 |
| How must you pack the trash for pick-up? | 17 | 81 | 96 | 97 | .00 |
| When do they collect kitchen (cooked) waste? | 7 | 33 | 65 | 66 | .01 |
| When do they collect unusable waste? | 5 | 24 | 47 | 48 | .05 |
| When do they collect boxes, paper, plastic and bottles? | 7 | 33 | 54 | 55 | .08 |
| Who is responsible for collecting waste in your neighborhood? | 3 | 14 | 10 | 10 | .58 |
| Which household waste can be classified as organic? | 10 | 48 | 63 | 64 | .17 |

| | | | | | |
|--|----|----|----|----|-----|
| Which household waste can be classified as recyclable? | 13 | 62 | 59 | 60 | .84 |
| Which household waste can be classified as disposable? | 7 | 33 | 46 | 47 | .27 |

Table 11
Attitudes About Giving Waste With Commercial Value to Collectors By Separation Behavior for All Cases (Mean Rank Using Constructed Definition of Separation)

| Attitude | Non-Separators (n=190) | Separators (n=183) | Mann-Whitney U <i>p</i> |
|---|---------------------------|-----------------------|----------------------------|
| Giving your waste with commercial value to the collector is: | | | |
| Good | 185.3 | 188.7 | .74 |
| Convenient | 181.3 | 192.9 | .25 |
| Useful | 174.5 | 199.9 | .01 |
| Profitable | 177.2 | 197.1 | .05 |
| Shows solidarity | 175.6 | 198.8 | .02 |

Table 12
Attitudes About Giving Waste With Commercial Value to Collectors By Separation Behavior for Females (Mean Rank Using Constructed Definition of Separation)

| Attitude | Females | | |
|---|---------------------------|-----------------------|----------------------------|
| | Non-Separators (n=148) | Separators (n=137) | Mann-Whitney U <i>p</i> |
| Giving your waste with commercial value to the collector is: | | | |
| Good | 141.1 | 145.0 | .66 |
| Convenient | 136.9 | 149.6 | .14 |
| Useful | 135.4 | 151.2 | .06 |
| Profitable | 136.6 | 149.9 | .14 |
| Shows solidarity | 132.5 | 154.4 | .01 |

Table 13
Normative Beliefs by Separation Behavior for Males
(Mean Rank Using Constructed Definition of Separation)

| Normative Belief | Males | | |
|---|--------------------------|----------------------|----------------------------|
| | Non-Separators (n=42) | Separators (n=46) | Mann-Whitney U <i>p</i> |
| People important to you want you to separate waste before disposing of it | 43.8 | 45.1 | .79 |
| Your partner thinks you should separate waste before disposing of it | 41.4 | 47.4 | .24 |
| Your children think you should separate waste before disposing of it | 40.4 | 48.2 | .13 |
| Your neighbors think you should separate waste before disposing of it | 36.2 | 52.1 | .002 |

D. Using a Self-Description of Separation

1) Composite Measures

Overall, respondents were more likely to be categorized as separators if they had:

- < greater knowledge about the pilot program,
- < more strongly perceived social pressure to separate waste, and
- < were generally more satisfied with their neighborhood waste collection system.

The important difference between these results and those connected with a constructed definition of separation is the emergence of normative beliefs as a marginally significant predictor for all cases. These results are presented in Table 14.

Gender analyses revealed that the predictors of separation for female respondents were the same that were found for all respondents. Although attitudes about separating household waste were included in the model for females, they did not emerge as a predictor of separation. In the case of males, however, only knowledge emerged as a predictor of separation. Satisfaction with collection system did not. Results by gender are presented in Tables 15 and 16.

Table 14
Predictors of Separation Behavior for All Cases
(Self-Description of Separation)

| Composite Variables Included in Logistic Regression Model | Beta Weight | Partial Correlation R | <i>p</i> |
|--|--------------------|------------------------------|-----------------|
| Knowledge about recycling program/classification of waste | .39 | .23 | .000 |
| Normative beliefs about separating waste | .06 | .05 | .06 |
| Satisfaction with neighborhood waste collection system | .28 | .12 | .002 |
| Composite Variables Excluded From Logistic Regression Model | Score | Partial Correlation R | <i>p</i> |
| Attitudes about separating waste | .21 | N/A | .65 |
| Attitudes about waste with commercial value | 1.1 | | .29 |
| Personal outcome beliefs | .86 | | .35 |
| Distant outcome beliefs | .49 | | .48 |
| Negative outcome beliefs | .83 | | .36 |
| Exposure to messages about recycling waste | .007 | | .93 |

Table 15
Predictors of Separation Behavior for Male Respondents
(Self-Description of Separation)

| Composites Included in Logistic Regression Model | Beta Weight | Partial Correlation R | <i>p</i> |
|---|--------------------|------------------------------|-----------------|
| Knowledge about recycling program/classification of waste | .27 | .15 | .03 |

| | | | |
|---|--------------|------------------------------|-----------------|
| Satisfaction with neighborhood waste collection system | .33 | .07 | .10 |
| Composites Excluded From the Logistic Regression Model | Score | Partial Correlation R | <i>p</i> |
| Normative beliefs about separating waste | .002 | N/A | .96 |
| Attitudes about separating waste | 1.1 | | .29 |
| Attitudes about waste with commercial value | .72 | | .40 |
| Personal outcome beliefs | 1.55 | | .21 |
| Distant outcome beliefs | .59 | | .44 |
| Negative outcome beliefs | .03 | | .87 |
| Exposure to messages about recycling waste | .71 | | .40 |

Table 16
Predictors of Separation Behavior for Female Respondents
(Self-Description of Separation)

| Variables Included in Logistic Regression Model | Beta Weight | Partial Correlation R | <i>p</i> |
|---|-------------|-----------------------|----------|
| Attitudes about separating household waste. | -.05 | -.05 | .09 |
| Knowledge about recycling program/classification of waste | .45 | .24 | .000 |
| Normative beliefs about separating waste | .11 | .11 | .01 |
| Satisfaction with neighborhood waste collection system | .24 | .09 | .02 |
| Variables Excluded From Logistic Regression Model | Score | Partial Correlation R | <i>p</i> |
| Attitudes about waste with commercial value | .0001 | N/A | .99 |
| Personal outcome beliefs | .56 | | .45 |
| Distant outcome beliefs | .04 | | .85 |
| Negative outcome beliefs | 2.1 | | .15 |
| Exposure to messages about recycling waste | .35 | | .55 |

E. Individual Components of Statistically Significant Composites

< Knowledge

In general, more separators are aware of program guidelines than non-separators. Results indicate that the percentage differences between separators and non-separators are higher for those items pertaining to collection days for certain types of waste. A significantly higher percentage of separators also knew how waste is classified and were thus more familiar with of such terms as organic, recyclable and unusable waste. This is striking as correct knowledge of terminology used by the program did not distinguish separators and non-separators when using the constructed definition of separation. These findings have important implications for correctly separating waste. Results are provided in Table 17.

< Normative Beliefs by Self-Described Separation Practices

Most referents*, including children, partners and neighbors, have an influence on separation. Separators more strongly believed than non-separators that these referents approve of separating household waste. These findings are included in Table 18. When an analysis by gender was performed, this tendency was confirmed among women. Results are included in Table 19.

* Referents: individuals in social milieu who can exert social pressure to have behaviors performed.

Table 17
Knowledge by Separation for Program Participants
(Percent Answering Correctly Using Self-Description of Separation)

| Knowledge Question | Non-Separators | | Separators | | <i>p</i> |
|---|----------------|----|------------|----|----------|
| | <i>n</i> | % | <i>n</i> | % | |
| How must the trash be separated? | 30 | 48 | 49 | 45 | .78 |
| How often do recycling collectors pass? | 41 | 65 | 89 | 82 | .01 |
| How must you pack the trash for pick-up? | 59 | 94 | 104 | 96 | .43 |
| When do they collect kitchen (cooked) waste? | 23 | 37 | 75 | 69 | .0001 |
| When do they collect unusable waste? | 11 | 18 | 62 | 57 | .0001 |
| When do they collect boxes, paper, plastic and bottles? | 14 | 22 | 65 | 60 | .0001 |
| Who is responsible for collecting waste in your neighborhood? | 5 | 8 | 17 | 16 | .14 |
| Which household waste can be classified as organic? | 31 | 49 | 77 | 71 | .004 |
| Which household waste can be classified as recyclable? | 34 | 54 | 76 | 70 | .03 |
| Which household waste can be classified as disposable? | 17 | 27 | 64 | 59 | .001 |

Table 18
Normative Beliefs for All Cases by Separation Behavior
(Mean Rank Using Self-Description of Separation)

| Normative Belief | Non-Separators (<i>n</i> =164) | Separators (<i>n</i> =235) | Mann-Whitney U <i>p</i> |
|--|------------------------------------|--------------------------------|----------------------------|
| People important to you want you to separate waste before putting in a can | 194.5 | 207.8 | .22 |
| Your partner thinks you should separate waste before putting in a can | 190.4 | 213.8 | .03 |
| Your children think you should separate waste before putting in a can | 189.2 | 215.5 | .02 |

| | | | |
|--|-------|-------|-------|
| Your neighbors think you should separate waste before putting in a can | 183.2 | 224.2 | .0002 |
|--|-------|-------|-------|

Table 19
Normative Beliefs for Females by Separation Behavior
(Mean Rank Using Self-Description of Separation)

| Normative Belief | Females | | |
|--|---------------------------|-----------------------|----------------------------|
| | Non-Separators (n=111) | Separators (n=123) | Mann-Whitney U <i>p</i> |
| People important to you want you to separate waste before putting in a can | 112.8 | 122.7 | .23 |
| Your partner thinks you should separate waste before putting in a can | 108.8 | 127.2 | .02 |
| Your children think you should separate waste before putting in a can | 107.3 | 128.8 | .01 |
| Your neighbors think you should separate waste before putting in a can | 105.8 | 130.5 | .003 |

VII. Detailed Results: Other Beliefs About Separating Waste

Corporaci\n OIKOS had a special interest in the perceptions that residents have of the effects of disposing of waste in appropriate ways on health, the environment, and society. Thus, several additional questions were included in the survey to explore these issues. Comparisons were made between separators and non-separators using the constructed definition of separation.

Problems with insects and unsanitary conditions were reported as the major effect on health when trash was not given to waste collectors, with a significantly higher percentage of non-separators mentioning this problem. Pollution and environmental destruction were reported to be the primary environmental effects. The most common social effect reported was that the neighborhood looks bad. When asked how waste should be handled to prevent destruction of the environment, respondents mentioned: donate money; give waste to collectors and recycle waste most frequently. A significantly higher percentage of separators than non-separators mentioned A recycle@, while non-separators more often mentioned Aput trash out on correct days.@ Results are included in Tables 20-23, which provide the percentage of respondents who mentioned each item. Comparisons between separators and non-separators are presented in those tables. The constructed definition of separation is used in all tables. Only in the case of health is there a significant difference between separators and non-separators.

Table 20
Effects on Health When You Don't Give Trash to Collectors (Percent)

| Effect on Health | Non-Separators | | Separators | | <i>p</i> |
|------------------|----------------|----|------------|----|----------|
| | n | % | n | % | |
| Illness | 163 | 86 | 142 | 78 | .04 |

| | | | | | |
|-----------------------|----|----|----|----|-----|
| Insects/contamination | 40 | 95 | 37 | 80 | .03 |
|-----------------------|----|----|----|----|-----|

Table 21
Effects on the Environment When You Don't Give Trash to Collectors (Percent)

| Effect on Environment | Constructed Separation | | | | <i>p</i> |
|---|------------------------|----------|------------|----------|----------|
| | Non-Separators | | Separators | | |
| | n | % | n | % | |
| Pollution and Environmental Destruction | 122 | 64 | 112 | 61 | .55 |
| Bad Odor | 44 | 23 | 36 | 20 | .41 |
| Dirtiness | 3 | 2 | 7 | 4 | .18 |
| Flies | 9 | 5 | 9 | 5 | .93 |
| Ozone Destruction | 3 | 2 | 6 | 3 | .33 |
| Other effects | 2 | 1 | 0 | 0 | .50 |
| Don't know | 11 | 6 | 14 | 8 | .47 |

Table 22
Social Effects on Neighborhood When You Don't Give Trash to Collectors (Percent)

| Social Effect | Constructed Separation | | | | <i>p</i> |
|---------------------------|------------------------|----------|------------|----------|----------|
| | Non-Separators | | Separators | | |
| | n | % | n | % | |
| Neighborhood looks bad | 90 | 47 | 90 | 49 | .72 |
| Non-hygienic | 15 | 8 | 21 | 12 | .24 |
| Lowers neighborhood value | 12 | 6 | 8 | 4 | .40 |
| Neighborhood is dirty | 21 | 11 | 15 | 8 | .35 |
| Hurts everyone | 3 | 2 | 4 | 2 | .67 |
| Depreciates neighborhood | 4 | 2 | 5 | 3 | .69 |
| Other effects | 8 | 4 | 7 | 4 | .85 |
| Did not say | 40 | 21 | 34 | 19 | .55 |

Table 23
How Should Waste Be Handled to Avoid Harming the Environment? (Percent)

| Social Effect | Constructed Separation | | | | |
|-------------------------------|------------------------|----|------------|----|----------|
| | Non-Separators | | Separators | | <i>p</i> |
| | n | % | n | % | |
| Donate money | 47 | 25 | 34 | 19 | .15 |
| Give to the waste collector | 45 | 24 | 31 | 17 | .11 |
| Don't throw trash away | 3 | 2 | 7 | 4 | .18 |
| Start separating trash | 5 | 3 | 3 | 2 | .51 |
| Recycle | 27 | 14 | 46 | 25 | .01 |
| Pick up trash (litter) | 6 | 3 | 12 | 7 | .13 |
| Put trash in waste cans | 6 | 3 | 4 | 2 | .56 |
| Throw out trash every day | 7 | 4 | 7 | 4 | .94 |
| Put out trash on correct days | 12 | 6 | 4 | 2 | .05 |
| Burn trash | 0 | 0 | 0 | 0 | --- |
| Put lid on trash can | 15 | 8 | 11 | 6 | .48 |
| Throw waste in the ravine | 0 | 0 | 2 | 1 | .24 |
| Other | 3 | 2 | 3 | 2 | .96 |
| Did not respond | 9 | 5 | 9 | 5 | .93 |

VIII. Detailed Results: Membership in associations and Information Channels

In order to explore how best to disseminate educational messages about recycling and separating waste, the instrument included detailed questions about which communication channels respondents use most frequently.

A. Neighborhood News Sources and Membership in Local Organizations

In general, relatives and friends serve as the most common source of information for news about neighborhood events. The church and neighborhood assembly followed, respectively. Results, by gender, are provided in Table 24.

Only 11% of the sample reported belonging to any type of local organization. However, men were more likely to report belonging to some type of social, neighborhood, or cultural organization than women. Results are included in Table 25. Overall, for-profit neighborhood committees and housing cooperatives were the most popular local membership organizations, as illustrated in Table 26. However, a noticeably higher percentage of men than women belonged to sports clubs, while more women belonged to housing cooperatives. As shown in Table 26, however, those differences are not statistically significant.

Table 24
How You Get Information About Events in Your Neighborhood

| Information Source | All (n=410) % | Males | | Females | | <i>p</i> |
|-------------------------|---------------------|-------|----|---------|----|----------|
| | | n | % | n | % | |
| Relatives/friends | 45 | 40 | 43 | 144 | 45 | .68 |
| Loud speaker at church | 16 | 15 | 16 | 51 | 16 | .99 |
| Ambulatory loud speaker | 6 | 4 | 4 | 21 | 7 | .41 |
| Church bulletin board | 0 | 0 | 0 | 1 | .3 | 1.0 |
| Health center/nurse | 1 | 0 | 0 | 2 | 1 | 1.0 |
| Posters | 0 | 0 | 0 | 1 | .3 | 1.0 |
| Leaflets | 11 | 6 | 7 | 37 | 12 | .15 |
| Neighborhood assembly | 15 | 17 | 18 | 46 | 15 | .38 |
| Social events | 1 | 2 | 2 | 0 | 0 | .06 |
| Religious groups | 1 | 0 | 0 | 2 | 1 | .44 |
| Other forms | 6 | 9 | 10 | 15 | 5 | .07 |

Table 25
Membership in Any Organization

| Belong to Any Organization | All (n=410) % | Males | | Females | | <i>p</i> |
|----------------------------|---------------------|-------|----|---------|----|----------|
| | | n | % | n | % | |
| Yes | 11 | 18 | 19 | 26 | 8 | .002 |
| No | 89 | 75 | 81 | 291 | 92 | |

Table 26
Which Organizations (Of Those Who Belong to Any Organization)

| Organization | All (n=44) % | Males | | Females | | <i>p</i> |
|-----------------------------------|--------------------|-------|----|---------|----|----------|
| | | n | % | n | % | |
| For profit neighborhood committee | 25 | 5 | 28 | 6 | 23 | .11 |
| Neighborhood committee | 18 | 2 | 11 | 6 | 23 | |
| Neighborhood league | 5 | 2 | 11 | 0 | 0 | |
| Housing cooperative | 25 | 2 | 11 | 9 | 35 | |
| Sports club | 16 | 5 | 28 | 2 | 8 | |
| Aid society | 11 | 2 | 11 | 3 | 12 | |

B. Media Use

The different mass media channels through which respondents receive information that were assessed, running from most widely accessed to least widely used, include: television, radio, newspapers and magazines. Results indicate that males were significantly more likely than females to read newspapers. Furthermore, among females, separators were more likely to read newspapers than non-separators. While radio is generally more frequently listened to work day mornings, television is more commonly viewed work day evenings. More detailed information about what days/hours respondents watch TV and/or listen to the radio, which programs and stations they prefer, and which newspapers and magazines they read is provided in Appendix D.

Table 27 provides the breakdown, by gender, of the percentage of respondents in each category who utilize each media source.

Table 27
Summary Table of All Media Channels

| Medium | Males | | Females | | <i>p</i> |
|------------|-------|----|---------|----|----------|
| | n | % | n | % | |
| Television | 93 | 95 | 317 | 94 | .82 |
| Radio | 93 | 80 | 317 | 80 | .93 |
| Newspapers | 93 | 70 | 317 | 56 | .02 |
| Magazines | 93 | 23 | 317 | 32 | .09 |

C. Messages and Discussions About Recycling Waste

Respondents were asked if they had recently seen or heard on TV, the radio, the newspaper, or

magazines, any message or notice about recycling waste. Those who answered **Yes**, 158 respondents or 38 percent of the total sample, were asked additional questions about the nature of the message they saw or heard as well as any discussions about waste they have recently had with others. The proportion of respondents who had recently been exposed to a recycling message did not differ by waste separation practices or gender.

Other questions explored whether or not respondents had recently discussed the subject of waste with someone else, and if so, what in particular they had discussed. A total of 68 respondents, or 17% of the total sample, reported that they had discussed waste with someone in the recent past. Female respondents who separate their waste were significantly more likely to have discussed waste with someone than were female respondents who do not separate their waste. Results are provided in Table 28.

Separators most commonly discussed the advantages of recycling while non-separators most often discussed how to keep the neighborhood clean and how to recycle trash. Results are provided in Table 29.

Table 28
Have You Recently Discussed Waste With Someone?

| Respondent Category | | N | % Responded Yes | <i>p</i> |
|----------------------------|----------------|-----|-----------------|----------|
| | All | 410 | 17 | --- |
| | Non-Separators | 190 | 13 | .06 |
| | Separators | 183 | 20 | |
| | Males | 93 | 19 | .41 |
| | Females | 317 | 16 | |
| M a l e | Non-Separators | 42 | 19 | .95 |
| | Separators | 46 | 20 | |
| F e m a l e | Non-Separators | 148 | 11 | .04 |
| | Separators | 137 | 20 | |

Table 29
Subject You Recently Discussed With Someone Pertaining to Waste (Percent)

| Subject Discussed | All (n=68) | Non-Separators (n=24) | Separators (n=36) | Males (n=18) | Females (n=50) |
|------------------------------------|------------|-----------------------|-------------------|--------------|----------------|
| How to keep the neighborhood clean | 12 | 21 | 8 | 11 | 12 |
| How to recycle trash | 21 | 21 | 17 | 17 | 22 |
| The organic trash program | 6 | 4 | 6 | 6 | 6 |
| About the advantages of recycling | 31 | 17 | 44 | 33 | 30 |
| Don't throw waste on the street | 13 | 17 | 11 | 17 | 12 |
| The lack of control | 10 | 17 | 3 | 11 | 10 |
| The lack of culture | 7 | 4 | 11 | 6 | 8 |

Appendix A: Instrument

Study of Garbage Treatment Habits August, 1995 Collection and Recycling Program in Neighborhoods South of Quito

Good morning/afternoon. I am ____, surveyor of Markop, an agency that performs social and marketing studies. I am visiting some homes in this area to understand the cleanliness problem. Your opinion is very important to us and your answers are confidential. I want to thank you for helping with your honest response.

I. SOCIAL PARTICIPATION

2 C2. Do you belong to any organization: social, neighborhood, cultural or any other kind?

Coding: 1. Yes 2. No (Skip to question 6)

3 C3. What organization(s) do you belong to? (OPEN ENDED RESPONSE)

Coding: 1. For profit neighborhood committee
2. Neighborhood committee
3. Neighborhood league
4. Housing cooperative
5. Sports club
6. Aid society

4 C4. How actively involved are you when you join?

Coding: 1. Participate in all of the activities
2. Participate in most of the activities
3. Participate in some of the activities
4. Don't really participate

5 What motivated you to participate/not participate in the organization(s)? (OPEN ENDED RESPONSE)

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|--------------------------------|-----------------|
| C5. | To have a clean neighborhood | 1 |
| C6. | Neighborhood improvement | 2 |
| C7. | Neighborhood needs fulfillment | 3 |
| C8. | Personal development | 4 |
| C9. | Area unity | 5 |
| C10. | The good of the community | 6 |
| C11. | Sports participation | 7 |
| C12. | To meet/get to know people | 8 |
| C13. | It is the obligation of all | 9 |

6 C14. What are the most important activities of the Neighborhood Improvement Committee?

Coding: 1. Collect trash

2. Other activities

| 13 When giving garbage to the recycler, do you separate organic/unusable? | C496: | C497: | C498: | C499: | C500: | C501: | C502: | C503: | C504: |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Yes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| No | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Don't know | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Doesn't apply | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |

14 C32. Who decided to get rid of the garbage in the manner it is done?

- Coding:
1. Interviewee
 2. Spouse
 3. Son
 4. Daughter
 5. Other family member
 6. Domestic employee
 7. Don't know

15 C33. Who got rid of the trash?

- Coding:
1. Interviewee
 2. Spouse
 3. Son
 4. Daughter
 5. Other family member
 6. Domestic employee
 7. Don't know

III. COLLECTION AND RECYCLING PROGRAM

16 C34. Do you know if a collection and recycling program exists in your neighborhood?

- Coding:
1. Yes, I know it exists
 2. Don't know

17 C35. How has the trash had to be separated? (READ)

- Coding:
1. Wet and dry
 2. Organic and inorganic
 3. Organic, recyclable, and disposable (Correct answer)
 3. Don't know

18 C36. According to the program, how often do the recycling collectors pass?

- Coding:
1. Every work day (Correct answer -others should be collapsed)
 2. Once a week
 3. Every other day
 4. They don't pass
 5. Don't know

19 C37. How do you have to pack the trash for pick up?

- Coding:
1. Plastic bags (Correct answer -others should be collapsed)
 2. Box/carton

3. Sack/bag
4. Other container
5. Don't know

20 C38. When do they come to collect kitchen (cooked) garbage?

- Coding:
1. Correct days (Monday, Wednesday, Friday)
 2. Incorrect day(s) (other days)
 3. Don't know

21 C39. When do they come to collect unusable garbage?

- Coding:
1. Correct day (Thursday)
 2. Incorrect day (other days)
 3. Don't know

22 C40. When do they come to collect garbage such as boxes, paper, plastic and bottles?

- Coding:
1. Correct day (Tuesday)
 2. Incorrect day (other days)
 3. Don't know

23 C41. Who is responsible for collecting garbage in your neighborhood?

- Coding:
1. A micro-enterprise (Correct answer -others should be collapsed)
 2. The municipality/EMASEO
 3. For Profit Committee
 4. No one
 5. Don't know

IV. TERMINOLOGY

24 C42. What do you think is classified as organic trash that you produce in your house?

- Coding:
1. Correct (cooking remains, food rinds/shells, food leftovers)
 2. Incorrect (other types of garbage)
 3. Don't know

25 C43. And what do you think is recyclable trash you produce in your home?

- Coding:
1. Correct (boxes, paper, plastic, glass, tin, metals)
 2. Incorrect (other types of garbage)
 3. Don't know

26 C44. What do you think is classified as disposable trash that you produce in your house?

- Coding:
1. Correct (unusable garbage (from the bathroom))
 2. Incorrect (other types of garbage)
 3. Don't know

V. OTHER AREAS OF KNOWLEDGE

27 What effects are there on health when you don't give trash to the collectors?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|--------------------|-----------------|
| C45 | Illness | 1 |
| C46 | Insects | 2 |
| C47 | Epidemics | 3 |
| C48 | Bad odor | 4 |
| C49 | Contamination/dirt | 5 |
| C50 | Infection | 6 |
| C51 | Cholera | 7 |
| C52 | Fever | 8 |
| C53 | Plagues/Pests | 9 |

28 What effects are there on the environment when you don't give trash to the collectors?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|---|-----------------|
| C54 | Pollution and environmental destruction | 1 |
| C55 | Bad odor | 2 |
| C56 | Dirtiness | 3 |
| C57 | Flies | 4 |
| C58 | Ozone destruction | 5 |
| C59 | Other effects | 6 |
| C60 | Don't know | 7 |

29 What social effects are there on the neighborhood when you don't give trash to the collectors?

(OPEN

ENDED RESPONSE)

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|---------------------------|-----------------|
| C61 | Neighborhood looks bad | 1 |
| C62 | Non-hygienic | 2 |
| C63 | Lowers neighborhood value | 3 |
| C64 | Neighborhood is dirty | 4 |
| C65 | Hurts everyone | 5 |
| C66 | Depreciates neighborhood | 6 |
| C67 | Other effects | 7 |
| C68 | Didn't say | 8 |

30 How should waste be handled to avoid harming the environment? (OPEN ENDED RESPONSE)

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|-------------------------------|-----------------|
| C69 | Donate money | 1 |
| C70 | Give to the garbage collector | 2 |
| C71 | Don't throw trash in street | 3 |
| C72 | Start separating trash | 4 |
| C73 | Recycle | 5 |
| C74 | Pick up trash (litter) | 6 |
| C75 | Put trash in garbage cans | 7 |
| C76 | Throw out trash every day | 8 |
| C77 | Put out trash on correct days | 9 |
| C78 | Burn trash | 0 |
| C79 | Put lid on trash can | A |
| C80 | Throw garbage in the ravine | B |
| C81 | Other | C |
| C82 | Did not respond | D |

31 C83. How would you rate the collection system in this neighborhood? (READ ANSWERS)

- Coding:
1. Excellent
 2. Good
 3. More or less
 4. Bad
 5. Terrible
 6. Don't know (Skip to question 33)

32 Why? (OPEN ENDED)

If good or excellent:

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|-----------------------------|-----------------|
| C84 | Goes by every three days | 1 |
| C85 | Daily (timely) pick-up | 2 |
| C86 | Passes by on scheduled days | 3 |
| C87 | Reliable on scheduled days | 4 |

| | | |
|-----|--------------------------------|---|
| C88 | They don't drop the garbage | 5 |
| C89 | Neighborhood is clean | 6 |
| C90 | Go by exactly when they should | 7 |
| C91 | Never miss a day | 8 |
| C92 | Other reasons | 9 |
| C93 | Didn't say | 0 |

If more or less

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|------------------------------|-----------------|
| C84 | No time to get garbage ready | 1 |
| C85 | They go by too quickly | 2 |
| C86 | Collectors miss days | 3 |

If terrible (or bad)

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|----------------------------------|-----------------|
| C84 | Lacks organization | 1 |
| C85 | Collectors are rude | 2 |
| C86 | They don't come by as planned | 3 |
| C87 | Neighbors don't use garbage bags | 4 |
| C88 | Drop garbage as collected | 5 |
| C89 | No collection | 6 |

33 C94. Is the time of collection adequate or inadequate?

Coding: 1. Adequate(Skip to question 35) 2. Inadequate

34 What hour do you prefer?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|-----------------|-----------------|
| C95 | 6 am | 1 |
| C96 | 7 am | 2 |
| C98 | 8 am | 3 |
| C99 | 9 am | 4 |
| C100 | Anytime | 5 |

35 C101. How frequently should unusable waste be picked up?

Coding: 1. Daily
2. Every other day
3. Every three days
4. Twice a week
5. Once a week
6. No response

- 51** C123. Allows you to set a good example for your kids
- 52** C124. Avoids/prevents disease
- 53** C125. Makes you orderly
- 54** C126. Keeps the house cleaner
- 55** C127. Keeps the garbage dry
- 56** C128. Avoids vectors (insects and rodents)
- 57** C129. Avoids bad odors
- 58** C130. House is prettier
- 59** C131. Makes micro-enterprises get profits
- 60** C132. Neighborhood development fund is created
- 61** C133. Produces raw material for industry
- 62** C134. Helps country's development
- 63** C135. Reduces environmental pollution
- 64** C136. It's not my job
- 65** C137. Forces spending too much money on garbage bags
- 66** C138. It forces me to practice a habit that I hate
- 67** C139. It is demeaning
- 68** C140. I can get some money

- Coding:
- 1. Totally disagree
 - 2. Disagree
 - 3. Neutral
 - 4. Agree
 - 5. Totally agree

IX NORMS

- 69** C141. People that are important to you want you to separate kitchen, unusable and other waste before you throw it in the can(s).
- 70** C142. Your partner thinks that you should separate kitchen, unusable and other waste before you throw it in the can(s).
- 71** C143. Your children think that you should separate kitchen, unusable and other waste before you throw it in the can(s).
- 72** C144. Your neighbors think that you should separate kitchen, unusable and other waste before you throw it in the can(s).

- Coding:
- 1. Totally disagree
 - 2. Disagree
 - 3. Neutral
 - 4. Agree
 - 5. Totally agree

X. ATTITUDES ABOUT PARTICIPATION

Giving your garbage with commercial value to the collector is

- 73** C145. Good
- 74** C146. Convenient
- 75** C147. Useful

76 C148. Profitable

77 C149. Shows expression of solidarity

- Coding:
1. Totally disagree
 2. Disagree
 3. Neutral
 4. Agree
 5. Totally agree

XI. MEDIA USE

78 C150. Do you usually watch television?

- Coding:
1. Yes
 2. No (skip to question 88)

79 What morning hours do you watch television during workdays? (OPEN ENDED RESPONSE)

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|----------------------------|-----------------|
| C151 | 7 to 8 am | 1 |
| C152 | 8 to 9 am | 2 |
| C153 | 9 to 10 am | 3 |
| C154 | 10 to 11 am | 4 |
| C155 | 11 to 12 am | 5 |
| C156 | All morning | 6 |
| C157 | Don't watch in the morning | 7 |

80 What afternoon hours do you watch television during workdays? (OPEN ENDED RESPONSE)

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|------------------------------|-----------------|
| C158 | from 12 to 1 pm | 1 |
| C159 | from 1 to 2 pm | 2 |
| C160 | from 2 to 3 pm | 3 |
| C161 | from 3 to 4 pm | 4 |
| C162 | from 4 to 5 pm | 5 |
| C163 | from 5 to 6 pm | 6 |
| C164 | All afternoon | 7 |
| C165 | Don't watch in the afternoon | 8 |

81 What evening hours do you watch television during workdays? (OPEN ENDED RESPONSE)

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|-----------------|-----------------|
| C166 | 6 to 7 pm | 1 |

| | | |
|------|----------------------------|---|
| C167 | 7 to 8 pm | 2 |
| C168 | 8 to 9 pm | 3 |
| C169 | 9 to 10 pm | 4 |
| C170 | from 10 pm on | 5 |
| C171 | All night | 6 |
| C172 | Don't watch in the evening | 7 |

82 What programs do you prefer to watch in the morning during workdays?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|------------------------------|-----------------|
| C173 | news | 1 |
| C174 | sports | 2 |
| C175 | soap operas | 3 |
| C176 | comedies | 4 |
| C177 | live programs | 5 |
| C178 | cultural programs | 6 |
| C179 | series | 7 |
| C180 | scientific programs | 8 |
| C181 | interviews | 9 |
| C182 | cartoons | 0 |
| C183 | exercise programs | A |
| C184 | woman's programs | B |
| C185 | other | C |
| C186 | Don't watch during this time | D |

83 What programs do you prefer to watch in the afternoon during workdays?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|---------------------|-----------------|
| C187 | news | 1 |
| C188 | sports | 2 |
| C189 | soap operas | 3 |
| C190 | comedies | 4 |
| C191 | live programs | 5 |
| C192 | cultural programs | 6 |
| C193 | series | 7 |
| C194 | scientific programs | 8 |

| | | |
|------|------------------------------|---|
| C195 | interviews | 9 |
| C196 | cartoons | 0 |
| C197 | exercise programs | A |
| C198 | woman=s programs | B |
| C199 | other | C |
| C200 | Don=t watch during this time | D |

84 What programs do you prefer to watch in the evening during workdays?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|------------------------------|-----------------|
| C201 | news | 1 |
| C202 | sports | 2 |
| C203 | soap operas | 3 |
| C204 | comedies | 4 |
| C205 | live programs | 5 |
| C206 | cultural programs | 6 |
| C207 | series | 7 |
| C208 | scientific programs | 8 |
| C209 | interviews | 9 |
| C210 | cartoons | 0 |
| C211 | exercise programs | A |
| C212 | woman=s programs | B |
| C213 | other | C |
| C214 | Don=t watch during this time | D |

85 What programs do you watch on the weekend?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|------------------------------|-----------------|
| C215 | news | 1 |
| C216 | sports | 2 |
| C217 | soap operas | 3 |
| C218 | comedies | 4 |
| C219 | live programs | 5 |
| C220 | cultural programs | 6 |
| C221 | series | 7 |
| C222 | scientific programs | 8 |
| C223 | interviews | 9 |
| C224 | cartoons | 0 |
| C225 | exercise programs | A |
| C226 | woman=s programs | B |
| C227 | other | C |
| C228 | Don=t watch during this time | D |

86 C229. What channel do you watch during the week?

| | |
|---------|-------------------|
| Coding: | 1. Gamavision 2 |
| | 2. Teleamazonas 4 |
| | 3. Telesistema 5 |
| | 4. Ecuavisa 8 |
| | 5. Telecentro 10 |

- 6. Teletrece 13
- 7. Other

87 C230. What channel do you watch during the weekend?

- Coding:
- 1. Gamavision 2
 - 2. Teleamazonas 4
 - 3. Telesistema 5
 - 4. Ecuavisa 8
 - 5. Telecentro 10
 - 6. Teletrece 13
 - 7. Other

88 C231. Do you listen to the radio with any frequency?

- Coding:
- 1. Yes
 - 2. No (skip to question 94)

89 What programs do you listen to in the morning during workdays?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|-------------------------------|-----------------|
| C232 | news | 1 |
| C233 | sports | 2 |
| C234 | music | 3 |
| C235 | live programs | 4 |
| C236 | women/home programs | 5 |
| C237 | other | 6 |
| C238 | Don't listen during this time | 7 |

90 C239. What programs do you listen to in the afternoon during workdays?

- Coding:
- 1. news
 - 2. sports
 - 3. music
 - 4. live programs
 - 5. women/home programs
 - 6. other
 - 7. Don't listen during this time

91 What programs do you listen to in the evening during workdays?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|-------------------------------|-----------------|
| C240 | news | 1 |
| C241 | sports | 2 |
| C242 | music | 3 |
| C243 | live programs | 4 |
| C244 | women/home programs | 5 |
| C245 | other | 6 |
| C246 | Don't listen during this time | 7 |

92 What stations do you listen to during workdays? (OPEN ENDED RESPONSE)

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|-----------------|-----------------|
|---------------|-----------------|-----------------|

| | | |
|------|--------------|---|
| C247 | Zaracay | 1 |
| C248 | Tarqui | 2 |
| C249 | Accoucheur | 3 |
| C250 | Melodía | 4 |
| C251 | Sideral | 5 |
| C252 | Onda Azul | 6 |
| C253 | La Bruja | 7 |
| C254 | Quito | 8 |
| C255 | Cristal | 9 |
| C256 | Visi\n | 0 |
| C257 | Espejo | A |
| C258 | Col\n | B |
| C259 | others | C |
| C260 | no response | D |
| C261 | don't listen | E |

93 What programs do you listen to on the weekends?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|-------------------------------|-----------------|
| C262 | news | 1 |
| C263 | sports | 2 |
| C264 | music | 3 |
| C265 | live programs | 4 |
| C266 | women/home programs | 5 |
| C267 | other | 6 |
| C268 | Don't listen during this time | 7 |

94 What stations do you listen to on the weekends? (OPEN ENDED RESPONSE)

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|-----------------|-----------------|
| C269 | Zaracay | 1 |
| C270 | Tarqui | 2 |
| C271 | Ecuashyri | 3 |
| C272 | Melodía | 4 |
| C273 | Sideral | 5 |
| C274 | Onda Azul | 6 |
| C275 | La Bruja | 7 |
| C276 | Quito | 8 |
| C277 | Cristal | 9 |
| C278 | Visi\n | 0 |
| C279 | Espejo | A |
| C280 | Col\n | B |
| C281 | others | C |
| C282 | no response | D |
| C283 | don't listen | E |

95 C284. Do you usually read newspapers?

Coding: 1. Yes 2. No (skip to question 100)

96 What newspapers do you read during the week?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|-------------------------------------|-----------------|
| C285 | El Comercio | 1 |
| C286 | El Hoy | 2 |
| C287 | Ultimas Noticias | 3 |
| C288 | Others | 4 |
| C289 | None of those (skip to question 98) | 5 |

97 Which section of the paper do you like to read during the week?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|--------------------|-----------------|
| C290 | National news | 1 |
| C291 | International news | 2 |
| C292 | Sports | 3 |
| C293 | Business | 4 |
| C294 | Horoscope | 5 |
| C295 | Comic Strips | 6 |
| C296 | Other | 7 |

98 What newspapers do you read on the weekend?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|--------------------------------------|-----------------|
| C297 | El Comercio | 1 |
| C298 | El Hoy | 2 |
| C299 | Ultimas Noticias | 3 |
| C300 | Others | 4 |
| C301 | None of those (skip to question 100) | 5 |

99 Which section of the paper do you like to read on the weekend?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|--------------------|-----------------|
| C302 | National news | 1 |
| C303 | International news | 2 |
| C304 | Sports | 3 |
| C305 | Business | 4 |
| C306 | Horoscope | 5 |
| C307 | Comic Strips | 6 |
| C308 | Other | 7 |

100 C309. Do you usually read magazines?

Coding: 1. Yes 2. No (skip to question 102)

101 What magazines do you read?

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|-----------------|-----------------|
| C310 | Estadio | 1 |
| C311 | Vistazo | 2 |

| | | |
|------|-------------------|---|
| C312 | Selecciones | 3 |
| C313 | Vanidades | 4 |
| C314 | Buen Hogar | 5 |
| C315 | religious reviews | 6 |
| C316 | others | 7 |

102 C317. Recently, have you seen or heard on TV, the radio, the newspaper, or magazines, any message or notice about trash recycling?

Coding: 1. Yes 2. No (skip to question 104)

103 Can you repeat it to me? (OPEN ENDED RESPONSE)

| <u>Column</u> | <u>Response</u> | <u>Coded As</u> |
|---------------|---|-----------------|
| C318 | Recycling is beneficial | 1 |
| C319 | You can recycle | 2 |
| C320 | They are collecting trash in plastic bags | 3 |
| C321 | Put trash in the recycling trucks | 4 |
| C322 | Don't throw trash elsewhere | 5 |
| C323 | How to recycle trash | 6 |
| C324 | Keep the neighborhood clean | 7 |
| C325 | Recycle bottles | 8 |
| C326 | Protect the environment | 9 |
| C327 | Other theme | 0 |
| C328 | Can't recall | A |

104 C329. Have you recently discussed the topic of trash with someone?

Coding: 1. Yes
2. No (skip to question 106)
3. Didn't say

105 C330. What subject did you discuss? (OPEN ENDED RESPONSE)

Coding: 1. How to keep the neighborhood clean
2. How to recycle trash
3. The organic trash program
4. About the advantages of recycling
5. The lack of control
6. The lack of culture

II. DISPOSAL SERVICES

106 C331. How do you get water for the kitchen?

Coding: 1. Tanker
2. Public service (clean)
3. Home service

107 C332. Which of these human waste disposal methods do you use?

Coding: 1. S.H.(servicios higiénicos/toilet) private

| | | |
|------|-----------------|---|
| C341 | Television | 2 |
| C342 | Refrigerator | 3 |
| C343 | Washing machine | 4 |
| C344 | Dish washer | 5 |
| C345 | Vacuum cleaner | 6 |
| C346 | VHS, Betamax | 7 |
| C347 | None of these | 8 |

XV. FAMILY COMPOSITION

116 C348. How many people live in your home?

- Coding:
1. 1 person
 2. 2 people
 - 3.- 8. 3-8 people
 9. 9 or more

117 C349. Of them, how many are males under 7 years old?

- Coding:
1. 1 person
 2. 2 people
 - 3.- 8. 3-8 people
 9. 9 or more

118 C350. Of them, how many are males 7 to 12 years old?

- Coding:
1. 1 person
 2. 2 people
 - 3.- 8. 3-8 people
 9. 9 or more

119 C351. Of them, how many are males 13 to 18 years old?

- Coding:
1. 1 person
 2. 2 people
 - 3.- 8. 3-8 people
 9. 9 or more

120 C352. Of them, how many are males older than 18 years?

- Coding:
1. 1 person
 2. 2 people
 - 3.- 8. 3-8 people
 9. 9 or more

121 C353. Of them, how many are females 7 to 12 years old?

- Coding:
1. 1 person
 2. 2 people
 - 3.- 8. 3-8 people
 9. 9 or more

122 C354. Of them, how many are females 13 to 18 years old?

Coding: 1. 1 person
2. 2 people
3.- 8. 3-8 people
9. 9 or more

123 C355. Of them, how many are females older than 18 years?

Coding: 1. 1 person
2. 2 people
3.- 8. 3-8 people
9. 9 or more

XVI. LEVEL OF EDUCATION

124 C356. What is the level of education of the head of the family? (OPEN ENDED RESPONSE)

- Coding:
1. Didn't complete primary
 2. Completed primary
 3. Didn't complete secondary
 4. Completed secondary
 5. Didn't complete higher education
 6. Completed higher education
 7. Technical school
 8. Didn't say

125 C357. What is the level of education of the lady of the house? (OPEN ENDED RESPONSE)

- Coding:
1. Didn't complete primary
 2. Completed primary
 3. Didn't complete secondary
 4. Completed secondary
 5. Didn't complete higher education
 6. Completed higher education
 7. Technical school
 8. Didn't say

126 C358. How many people in your house are in school?

- Coding:
1. 1 person
 2. 2 people
 - 3.- 8. 3-8 people
 9. 9 or more

127 C359. How many people in your house are in college?

- Coding:
1. 1 person
 2. 2 people
 - 3.- 8. 3-8 people
 9. 9 or more

XVII. OCCUPATION

128 C360. Who does the family depend on economically (principle breadwinner)?

- Coding:
1. The father
 2. The mother
 3. Widowed mother
 4. Divorced mother
 5. Single mother
 6. Older child
 7. Someone else in the family (grandparent, aunt, uncle,...)

129 C361. What is the occupation of this person? (OPEN ENDED RESPONSE)

- Coding:
1. Merchant
 2. Chauffeur
 3. Pension of retired person
 4. Military
 5. Private employment
 6. Mechanic
 7. Guard
 8. Public employment
 9. House cleaning, maid
 0. Laborer, journeyman
 - A. Dental technician
 - B. Artist, craftsman
 - C. Bricklayer
 - D. Other occupation
 - E. Didn't say

130 C362. Does the lady of the house contribute economically?

- Coding:
1. Yes
 2. No (Skip to question 132)

131 C363. What is the occupation of the lady of the house?

- Coding:
1. Self-employed
 2. Professional employee
 3. Secretary
 4. Merchant
 5. Traveling salesman
 6. Artist, craftsman
 7. Domestic servant, maid in someone else's house
 8. Artisan
 9. Pensioned retired person
 0. Unemployed

XVIII. DEMOGRAPHICS

132 C364. Interviewee's sex

- Coding:
1. Male
 2. Female

133 C365. Age (OPEN ENDED RESPONSE)

- Coding:
1. Up to 24 years old
 2. From 25 to 34 years
 3. From 35 to 44 years
 4. 45 years and older

XIX. HOME CHARACTERISTICS (INTERVIEWER OBSERVATION)

134 C366. Type of house

- Coding:
1. One story home
 2. Two story home

3. Apartment
4. Unfinished house
5. Room
6. Rooming house

135 C367. Location

- Coding:
1. External, give street
 2. Internal, no street

136 C368. Program participation

- Coding:
1. Participants
 2. Not participants
 3. Don't know about program

Interviewee name _____

Address _____

Telephone number _____

Community _____ Block _____ House #

Neighborhood _____

Date _____ Interviewer _____

Date supervisor reviewed _____ Supervisor _____

C505. Interviewing sector

- Coding:
1. Solanda Zone 186
 2. San José de Chilibulo
 3. El Carmen
 4. La Argelia
 5. Quito Sur
 6. Solanda Zone 189 & 185

C506-C508. Three digit interview code

Appendix B: Methodology

Procedure (Continued)

In the analysis to predict separation, the mean score for the composite scale for all respondents who answered the knowledge questions (n=202) was calculated and given those respondents with missing values, or those who did not know about/did not have a collection and recycling program in their neighborhood. This permitted keeping all cases in the logistic regression models used. When knowledge was examined on an item-by-item basis, only those respondents who were from neighborhoods currently participating in the pilot program, and who knew that a waste collection system exists in their neighborhood (n=174), were included in the analyses.

Reliability scores for each of the composite scales created are provided in Table 1 below.

Table 1: Reliability Tests for Composite Scales of Knowledge, Attitudes and Normative Beliefs

| Composite Scale | Number of Items in Scale | Cronbach-s Alpha/Kuder Richardson |
|---|--------------------------|-----------------------------------|
| Knowledge | 10 | .77 |
| Attitudes about waste with commercial value | 5 | .79 |
| Attitudes about separating waste | 7 | .68 |
| Normative beliefs about separating waste | 4 | .80 |

An Equamax rotation model was used. The meaning of the factors was interpreted by studying the correlations of .50 and above between the factor and the items concerning drawbacks and benefits of waste separation. Four factors were identified in the analysis and three retained for further analysis. The fourth did not contain an adequate number of items above .5 that exhibited any interpretable relationship or adequately explained the variance and was thus dropped. The three factors retained were labeled as: 1) personal/family benefits associated with waste separation, 2) distant benefits of waste separation, and 3) drawbacks associated with waste separation. Personal benefits include aspects associated with self-growth or self-image. Distant benefits are benefits associated with the development of the country. The drawbacks may be due to financial reasons or to the fact that task of waste separation itself is considered demeaning. Factor scores associated with each one of those dimensions were used in a model to isolate predictors of separation that will be presented in the Results section of this report. Table 5 presents the Pearson correlations between the factors and the items measuring beliefs about drawbacks and benefits of separation. The correlations of .50 and above are highlighted in the table below.

Table 5: Correlations Between Items and Factors

| Items | Factor 1 | Factor 2 | Factor 3 |
|-----------------------------------|----------|----------|----------|
| I feel I support the neighborhood | .59 | .12 | .10 |
| I set a good example for my kids | .63 | .18 | .13 |
| Separation helps prevent disease | .67 | .09 | .14 |
| Makes be more orderly | .72 | .10 | .04 |

| | | | |
|--|------|------|------|
| Keeps the house cleaner | .71 | .16 | .12 |
| Keeps waste dry | .58 | .33 | .07 |
| Helps to avoid vectors | .74 | .14 | .21 |
| Avoids bad odors | .73 | .15 | .26 |
| House is prettier | .59 | .21 | .08 |
| Makes micro-enterprises get profits | .14 | .67 | -.12 |
| Generates raw materials for industry | -.06 | .63 | .09 |
| Help the country develop | .16 | .67 | .14 |
| Reduces environmental pollution | .29 | .55 | .11 |
| Neighborhood development fund created | .04 | .48 | .03 |
| Makes me do a job that should be done by somebody else | -.00 | .05 | .51 |
| Requires spending too much on bags | .02 | -.08 | .68 |
| It is demeaning | .24 | .21 | .56 |
| Makes me be a good parent | .09 | .18 | -.02 |
| It is a good habit | .40 | .16 | .09 |
| Makes you learn more | .40 | .21 | .12 |
| Makes you feel industrious | .38 | .31 | .21 |

The analysis was done in two stages, moving from composite or aggregate variables to specific items. During the first stage, all conceptually relevant independent variables were included in a model. Most of those variables were the composite independent variables described earlier in the Methodology section. Three models were tested: the first included all cases, the second included only men, and the third only women. Composite predictors of separation that emerged from these analyses were used in the second stage. At that time, the relationships between separation as a dependent variable and the individual items making up the composite predictors were examined. The presentation of results in Appendix B follows that same order.

Logistic regression was used in the first stage of the process discussed here as the dependent variable was dichotomous. This statistical procedure helped determine which independent variables act to increase the chances of respondents being categorized as separators. The independent variables examined through this procedure as possible predictors of waste separation practices included: the different composite measures of knowledge, attitudes and beliefs about recycling; the measure of degree of satisfaction with the waste collection system, and; exposure to messages about recycling.

In the logistic regression analyses, the statistic AR^2 represents the partial correlation between each of the independent variables and the dependent variable. In other words, AR^2 serves to estimate how important an independent variable is, relative to other independent variables, when predicting if a respondent is a waste separator or non-separator. In the models discussed here, predictors were extracted using a backward stepwise model. The results that are presented are those that emerged in the last step of the model.

In the second stage, items pertaining to respondents' knowledge about the pilot recycling program were analyzed using the chi square statistic. Tables compare the percentage of correct responses for non-separators and separators. Non-parametric tests, using Mann-Whitney U, were

performed for all other items. Non-parametric analysis was used as the distribution of the responses to the items were generally skewed. Tables for these analyses report the mean rank for each item. The discussion of results is presented first.

Appendix C: Satisfaction With Waste Collection System

The following tables examine differences between separators and non-separators for their level of satisfaction with their waste collection system for the constructed definition of separation.

A. Rating of Neighborhood Waste Collection System

Table 1: System Rating by Waste Separation Practices (Percent)

| Rating of Waste Collection System | All Cases | | | Females | | |
|-----------------------------------|------------------------|--------------------|----------|------------------------|--------------------|----------|
| | Non-Separators (n=190) | Separators (n=183) | <i>p</i> | Non-Separators (n=148) | Separators (n=137) | <i>p</i> |
| Excellent/Good | 43 | 58 | .01 | 45 | 59 | .02 |
| Alright | 25 | 20 | | 22 | 21 | |
| Bad/Terrible | 33 | 22 | | 27 | 20 | |

Separators as a whole, as well as female separators, were more likely to rate their collection system as good or excellent, and less likely to rate it as bad or terrible, than are non-separators.

Table 2: System Rating by Participation and Awareness (Percent)

| Rating of Waste Collection System | Participation | | | Awareness | | |
|-----------------------------------|-------------------------|---------------------|----------|-----------------|---------------|----------|
| | Non-Participant (n=102) | Participant (n=308) | <i>p</i> | Unaware (n=175) | Aware (n=235) | <i>p</i> |
| Excellent/Good | 29 | 56 | .001 | 46 | 52 | .49 |
| Alright | 31 | 17 | | 22 | 20 | |
| Bad/Terrible | 39 | 27 | | 32 | 29 | |

A greater proportion of respondents from neighborhoods participating in the pilot recycling program rated their waste collection system as good or excellent than did respondents from non-participating neighborhoods.

Table 3: Reasons for Rating System as Excellent/Good (Percent)

| Reason for Rating Collection System as Excellent/Good | All Cases | | | Females | | |
|---|-----------------------|--------------------|----------|-----------------------|-------------------|----------|
| | Non-Separators (n=81) | Separators (n=106) | <i>p</i> | Non-Separators (n=49) | Separators (n=27) | <i>p</i> |
| Goes by every 3 days | 6 | 4 | .45 | 6 | 4 | .50 |
| Daily pick-up | 15 | 16 | .82 | 17 | 16 | .92 |
| Passes by on scheduled days | 25 | 11 | .02 | 24 | 11 | .04 |
| Reliable on scheduled days | 14 | 19 | .34 | 14 | 21 | .25 |
| Collectors don't drop waste | 12 | 19 | .23 | 15 | 21 | .36 |
| Neighborhood is clean | 0 | 7 | .02 | 0 | 6 | .06 |
| Go by exactly when they should | 19 | 9 | .04 | 17 | 7 | .08 |
| Never miss a day | 7 | 11 | .37 | 6 | 9 | .55 |
| Other reasons | 3 | 4 | .62 | 2 | 4 | .63 |

Two significant differences are apparent using the constructed definition of separation. Separators are more likely to mention **A**neighborhood is clean@ while non-separators are more likely to mention **A**collectors go by exactly when they should@. Non-separators also mentioned **A**passes by on scheduled days@ more often than separators did.

Table 4: Reasons for Rating System as Alright (Percent)

| Reason for Rating Collection System as Alright | All Cases | | | Females | | |
|--|-----------------------|-------------------|----------|-----------------------|-------------------|----------|
| | Non-Separators (n=47) | Separators (n=37) | <i>p</i> | Non-Separators (n=33) | Separators (n=29) | <i>p</i> |
| No time to get waste ready | 19 | 11 | .29 | 24 | 10 | .15 |
| Collectors go by too quickly | 15 | 8 | .34 | 18 | 7 | .19 |
| Collectors miss days | 70 | 81 | .25 | 61 | 83 | .05 |

Waste collectors missing collection days is the most common reason mentioned by both separators and non-separators for rating the collection system as only **A**alright@. Female separators were significantly more likely to report that collectors missed days than were female non-separators.

Table 5: Reasons for Rating System as Terrible/Bad (Percent)

| Reason for Rating System Alright | All Cases | | | Females | | |
|----------------------------------|-----------------------|-------------------|----------|-----------------------|-------------------|----------|
| | Non-Separators (n=62) | Separators (n=40) | <i>p</i> | Non-Separators (n=49) | Separators (n=27) | <i>p</i> |
| Lacks organization | 8 | 18 | .15 | 8 | 4 | .45 |

| | | | | | | |
|--------------------------------------|----|----|-----|----|----|-----|
| Collectors are rude | 11 | 13 | .85 | 8 | 15 | .44 |
| Collectors do not come by as planned | 47 | 25 | .03 | 51 | 22 | .01 |
| Neighbors don't use waste bags | 8 | 23 | .04 | 6 | 30 | .01 |
| Collectors drop/leave waste behind | 18 | 23 | .55 | 16 | 26 | .31 |
| No collection | 10 | 3 | .16 | 12 | 4 | .22 |

Two significant findings emerged: non-separators, all cases and just females, more commonly reported that **collectors do not come by as planned**, while separators more often mentioned that **neighbors don't use waste bags**. Among females, separators were significantly more likely than non-separators to complain that neighbors do not use garbage bags.

B. Adequacy of Collection Time

Table 6: Collection Time by Waste Separation Practices (Percent)

| Collection Time | Constructed Separation | | |
|-----------------|---------------------------|-----------------------|----------|
| | Non-Separators (n=190) | Separators (n=183) | <i>p</i> |
| Adequate | 80 | 92 | .001 |
| Inadequate | 20 | 8 | |

A significantly higher percentage of separators reported that the waste collection time is fine.

Table 7: Collection Time by Participation and Awareness (Percent)

| Collection Time | Participation | | | Awareness | | |
|-----------------|----------------------------|------------------------|----------|--------------------|------------------|----------|
| | Non-Participant (n=102) | Participant (n=308) | <i>p</i> | Unaware (n=175) | Aware (n=235) | <i>p</i> |
| Adequate | 72 | 87 | .001 | 80 | 85 | .14 |
| Inadequate | 28 | 13 | | 20 | 15 | |

A significantly larger percentage of participants than non-participants in the pilot program feel their waste collection time is adequate. No differences by awareness were present.

C. Frequency of Collection of Unusable Waste

Table 8: Frequency of Collection by Waste Separation Practices (Percent)

| Desired Frequency | Constructed Separation | | |
|-------------------|---------------------------|-----------------------|----------|
| | Non-Separators (n=190) | Separators (n=183) | <i>p</i> |
| Daily | 47 | 40 | .01 |
| Every other day | 29 | 28 | |
| Every three days | 13 | 9 | |
| Twice a week | 5 | 10 | |
| Once a week | 3 | 11 | |
| No response | 3 | 1 | |

Non-separators were more likely to desire more frequent collection of unusable waste than were separators.

Table 9: Collection Time by Participation and Awareness (Percent)

| Desired Frequency | Participation | | | Awareness | | |
|-------------------|-----------------------------|-------------------------|----------|--------------------|------------------|----------|
| | Non-Participants (n=102) | Participants (n=308) | <i>p</i> | Unaware (n=175) | Aware (n=235) | <i>p</i> |
| Daily | 49 | 44 | .39 | 47 | 44 | .001 |
| Every other day | 30 | 28 | | 34 | 24 | |
| Every three days | 11 | 11 | | 11 | 10 | |
| Twice a week | 6 | 7 | | 2 | 11 | |
| Once a week | 2 | 8 | | 3 | 9 | |
| No response | 2 | 2 | | 3 | 2 | |

Respondents who were unaware of the presence or absence of the pilot waste recycling program in their neighborhood preferred more frequent collection of unusable waste than did respondents who were aware.

D. Satisfaction With Treatment by Collectors

Table 10: Treatment by Collectors Waste Separation Practices (Percent)

| Satisfied With Treatment | All | Constructed Separation | | |
|--------------------------|-----|---------------------------|-----------------------|----------|
| | | Non-Separators (n=190) | Separators (n=183) | <i>p</i> |
| No | 31 | 38 | 19 | .001 |
| Yes | 69 | 62 | 81 | |

Separators were more inclined than non-separators to be satisfied with how waste collectors treated them.

Table 11: Treatment by Collectors by Participation and Awareness (Percent)

| Satisfied With Treatment | Participation | | | Awareness | | |
|--------------------------|-------------------------|---------------------|----------|-----------------|---------------|----------|
| | Non-Participant (n=102) | Participant (n=308) | <i>p</i> | Unaware (n=175) | Aware (n=235) | <i>p</i> |
| No | 48 | 25 | .001 | 36 | 27 | .06 |
| Yes | 52 | 75 | | 64 | 73 | |

Participants in the pilot program are significantly more satisfied than non-participants with how waste collectors treat them.

Table 12: Reasons for Satisfaction with Treatment by Waste Collectors (Percent Who Mentioned Reason)

| Reason for Satisfaction | Constructed Separation | | |
|-------------------------|------------------------|--------------------|----------|
| | Non-Separators (n=117) | Separators (n=149) | <i>p</i> |
| No problem | 38 | 17 | .001 |
| Good work | 7 | 6 | .79 |
| Collected are kind | 19 | 31 | .03 |
| Do a good job | 14 | 9 | .20 |
| Good service | 7 | 13 | .08 |
| Good manners | 8 | 15 | .07 |
| Punctual | 4 | 5 | .87 |

Table 13: Reasons for Dissatisfaction with Treatment by Waste Collectors (Percent Who Mentioned Reason)

| Reason for Dissatisfaction | Constructed Separation | | |
|----------------------------|------------------------|-------------------|----------|
| | Non-Separators (n=73) | Separators (n=34) | <i>p</i> |
| Rude | 58 | 74 | .11 |
| Spread waste around | 21 | 3 | .02 |
| Irresponsible | 1 | 3 | .58 |

| | | | |
|----------------------|----|---|-----|
| Destroy waste can | 8 | 6 | .67 |
| In a hurry | 7 | 6 | .85 |
| Don't go by my house | 10 | 9 | .90 |

Appendix D: Media Use

Television

When asked whether or not they usually watch television, 386 respondents replied **Yes** and 24 respondents replied **No**. The 386 respondents who indicated they do watch television were then asked in detail about what days, hours and programs they habitually watch television. In some instances, respondents indicated more than one time frame during which they watch television during the morning, afternoon, or evening so the number of cases responding may be greater than 386, or 100% of persons surveyed. The percentages provided in the tables indicate the percent of cases, not the percent of responses.

Table 1: Morning Hours You Watch Television on Work Days

| Morning Hours | All (n=386) | Non-Separators (n=185) | Separators (n=167) | Males (n=88) | Females (n=298) |
|----------------------------|----------------|---------------------------|-----------------------|-----------------|--------------------|
| 7 to 8 am | 12 | 16 | 9 | 16 | 11 |
| 8 to 9 am | 4 | 5 | 3 | 5 | 4 |
| 9 to 10 am | 1 | 0 | 1 | 0 | 1 |
| 10 to 11 am | 2 | 2 | 2 | 1 | 3 |
| 11 to 12 am | 1 | 0 | 2 | 0 | 1 |
| All morning | 3 | 3 | 2 | 0 | 3 |
| Don't watch in the morning | 78 | 77 | 81 | 80 | 78 |

In the morning, 7 to 8 am is the hour most commonly reported by TV viewers. Most respondents (78%) do not watch television in the morning.

Table 2: Afternoon Hours You Watch Television on Work Days

| Afternoon Hours | All (n=386) | Non-Separators (n=185) | Separators (n=167) | Males (n=88) | Females (n=298) |
|------------------------------|------------------------|-----------------------------------|-------------------------------|-------------------------|----------------------------|
| 12 to 1 pm | 3 | 2 | 4 | 1 | 3 |
| 1 to 2 pm | 9 | 9 | 11 | 13 | 8 |
| 2 to 3 pm | 10 | 9 | 10 | 2 | 12 |
| 3 to 4 pm | 9 | 8 | 10 | 1 | 11 |
| 4 to 5 pm | 7 | 9 | 5 | 5 | 8 |
| 5 to 6 pm | 7 | 7 | 5 | 7 | 7 |
| All afternoon | 7 | 5 | 6 | 2 | 8 |
| Don't watch in the afternoon | 54 | 56 | 53 | 72 | 50 |

Television watching during the afternoon is not concentrated in any particular time frame. Over half of respondents (54%) do not watch at all in the afternoon..

Table 3: Evening Hours You Watch Television on Work Days

| Evening Hours | All (n=386) | Non-Separators (n=185) | Separators (n=167) | Males (n=88) | Females (n=298) |
|----------------------------|------------------------|-----------------------------------|-------------------------------|-------------------------|----------------------------|
| 6 to 7 pm | 15 | 12 | 15 | 11 | 15 |
| 7 to 8 pm | 44 | 44 | 43 | 50 | 42 |
| 8 to 9 pm | 38 | 36 | 39 | 31 | 40 |
| 9 to 10 pm | 10 | 11 | 8 | 11 | 9 |
| from 10 pm on | 5 | 5 | 4 | 6 | 5 |
| All night | 6 | 8 | 4 | 10 | 5 |
| Don't watch in the evening | 6 | 6 | 5 | 6 | 6 |

Television watching peaks in the evening between the hours of 7 and 8 pm, when 44% of respondents tune in.

Table 4: Morning Television Programs You Watch on Work Days

| Morning Program | All (n=386) | Non-Separators (n=185) | Separators (n=167) | Males (n=) | Females (n=) |
|------------------------------|------------------------|-----------------------------------|-------------------------------|-----------------------|-------------------------|
| News | 14 | 16 | 10 | 18 | 12 |
| Sports | 1 | 1 | 2 | 1 | 1 |
| Soap Operas | 2 | 2 | 2 | 0 | 3 |
| Comedies | 1 | 1 | 1 | 0 | 1 |
| Live programs | 1 | 0 | 1 | 0 | 1 |
| Cultural programs | 2 | 2 | 1 | 0 | 2 |
| Series | 1 | 1 | 1 | 1 | 1 |
| Scientific programs | 1 | 0 | 1 | 1 | 0 |
| Interviews | 0 | 0 | 0 | 0 | 0 |
| Cartoons | 2 | 1 | 3 | 1 | 2 |
| Exercise programs | 0 | 0 | 0 | 0 | 0 |
| Women's programs | 2 | 1 | 2 | 0 | 2 |
| Other | 0 | 0 | 1 | 1 | 0 |
| Don't watch during this time | 76 | 77 | 77 | 76 | 76 |

News programs are the most commonly watched shows in the morning, as reported by 14% of respondents. But the majority of respondents (76%) do not watch television in the morning.

Table 5: Afternoon Television Programs You Watch on Work Days

| Afternoon Program | All (n=386) | Non-Separat ors (n=185) | Separators (n=167) | Males (n=88) | Females (n=298) |
|------------------------------|------------------------|--|-------------------------------|-------------------------|----------------------------|
| News | 10 | 10 | 11 | 13 | 10 |
| Sports | 1 | 1 | 1 | 1 | 0 |
| Soap Operas | 24 | 24 | 22 | 5 | 30 |
| Comedies | 4 | 3 | 4 | 2 | 4 |
| Live programs | 5 | 3 | 8 | 2 | 6 |
| Cultural programs | 1 | 2 | 1 | 0 | 1 |
| Series | 2 | 3 | 2 | 2 | 2 |
| Scientific programs | 0 | 0 | 0 | 0 | 0 |
| Interviews | 0 | 0 | 0 | 0 | 0 |
| Cartoons | 4 | 2 | 5 | 1 | 5 |
| Exercise programs | 0 | 0 | 0 | 0 | 0 |
| Women's programs | 0 | 0 | 0 | 0 | 0 |
| Other | 2 | 2 | 2 | 6 | 1 |
| Don't watch during this time | 52 | 54 | 50 | 70 | 47 |

Respondents most frequently reported watching soap operas during these hours. However, fully half of all TV watchers (52%) do not watch television in the afternoon.

Table 6: Evening Television Programs You Watch on Work Days

| Evening Program | All (n=386) | Non-Separat ors (n=185) | Separators (n=167) | Males (n=) | Females (n=) |
|------------------------------|------------------------|--|-------------------------------|-----------------------|-------------------------|
| News | 48 | 47 | 50 | 56 | 46 |
| Sports | 1 | 0 | 1 | 3 | 0 |
| Soap Operas | 41 | 42 | 39 | 21 | 47 |
| Comedies | 1 | 0 | 0 | 0 | 1 |
| Live programs | 3 | 2 | 4 | 6 | 2 |
| Cultural programs | 0 | 1 | 0 | 1 | 0 |
| Series | 10 | 11 | 11 | 10 | 10 |
| Scientific programs | 0 | 0 | 0 | 0 | 0 |
| Interviews | 0 | 0 | 0 | 0 | 0 |
| Cartoons | 1 | 1 | 1 | 0 | 1 |
| Exercise programs | 0 | 0 | 0 | 0 | 0 |
| Womens programs | 0 | 0 | 0 | 0 | 0 |
| Other | 4 | 5 | 4 | 10 | 2 |
| Don't watch during this time | 8 | 9 | 6 | 9 | 7 |

News programs and soap operas are the most commonly watched programs in the evenings on work days.

Table 7: Television Programs You Watch on the Weekend

| Weekend Program | All (n=386) | Non-Separat ors (n=185) | Separators (n=167) | Males (n=88) | Females (n=298) |
|------------------------------|------------------------|--|-------------------------------|-------------------------|----------------------------|
| News | 7 | 7 | 4 | 9 | 6 |
| Sports | 7 | 5 | 9 | 19 | 3 |
| Soap Operas | 2 | 2 | 2 | 3 | 2 |
| Comedies | 6 | 8 | 4 | 7 | 6 |
| Live programs | 19 | 16 | 22 | 14 | 20 |
| Cultural programs | 3 | 3 | 4 | 3 | 3 |
| Series | 26 | 30 | 24 | 22 | 27 |
| Scientific programs | 2 | 2 | 1 | 0 | 2 |
| Interviews | 0 | 0 | 0 | 0 | 0 |
| Cartoons | 1 | 1 | 1 | 1 | 1 |
| Exercise programs | 0 | 0 | 0 | 0 | 0 |
| Womens programs | 1 | 1 | 1 | 0 | 1 |
| Other | 12 | 11 | 13 | 13 | 11 |
| Don't watch during this time | 20 | 20 | 20 | 17 | 20 |

Live programs and series are the most frequently watch programs on the weekends.

Table 8: Television Channels You Watch on Work Days and on the Weekend

| | Channel | All (n=386) | Non-Separators (n=185) | Separators (n=167) | Males (n=88) | Females (n=298) |
|--|----------------|----------------|---------------------------|-----------------------|-----------------|--------------------|
| W e e k D a y s | Gamavision 2 | 10 | 8 | 11 | 7 | 11 |
| | Teleamazonas 4 | 36 | 35 | 38 | 41 | 34 |
| | Telesistema 5 | 11 | 11 | 10 | 10 | 11 |
| | Ecuavisa 8 | 32 | 32 | 30 | 26 | 33 |
| | Telecentro 10 | 9 | 9 | 8 | 9 | 9 |
| | Teletrece 13 | 1 | 1 | 1 | 1 | 0 |
| | Other | 3 | 3 | 2 | 6 | 2 |
| W e e k e n d s | Gamavision 2 | 12 | 12 | 14 | 6 | 14 |
| | Teleamazonas 4 | 23 | 24 | 23 | 32 | 20 |
| | Telesistema 5 | 10 | 8 | 12 | 8 | 10 |
| | Ecuavisa 8 | 26 | 28 | 21 | 19 | 28 |
| | Telecentro 10 | 9 | 9 | 7 | 13 | 7 |
| | Teletrece 13 | 2 | 2 | 3 | 2 | 2 |
| | Other | 19 | 18 | 20 | 21 | 19 |

Teleamazonas 4 is the most frequently watched TV channel during the week with Telesistema closely following in popularity. In contrast, on the weekend, Ecuavisa 8 is the most commonly watched station. This is mainly attributable to its popularity among female viewers. Male viewers appear to prefer Teleamazonas 4.

Radio

Question 88 of the survey instrument asked respondents whether or not they listen to the radio with any frequency. A total of 325 respondents answered Yes while 85 respondents answered No. Additional questions pertaining to radio listening habits and preferences were asked of those

respondents who consider themselves to be frequent listeners. Some respondents indicated more than one time frame during which they listen during the morning, afternoon, or evening, so the number of responses may exceed 100% of the number of persons surveyed.

No differences in the frequency of radio listening were detected when the data were examined by sex and waste separation practices.

Table 9: Radio Programs You Listen to in the Morning on Work Days

| Morning Radio Programs | All (n=325) | Non-Separators (n=152) | Separators (n=149) | Males (n=74) | Females (n=251) |
|-------------------------------|------------------------|-----------------------------------|-------------------------------|-------------------------|----------------------------|
| News | 30 | 32 | 28 | 31 | 30 |
| Sports | 2 | 1 | 4 | 5 | 1 |
| Music | 54 | 51 | 54 | 46 | 56 |
| Live programs | 5 | 6 | 4 | 4 | 5 |
| Women/home programs | 5 | 6 | 5 | 1 | 6 |
| Other | 2 | 1 | 2 | 3 | 2 |
| Don't listen at this time | 5 | 5 | 5 | 11 | 3 |

Table 10: Radio Programs You Listen to in the Afternoon on Work Days

| Afternoon Radio Programs | All (n=325) | Non-Separators (n=152) | Separators (n=149) | Males (n=88) | Females (n=298) |
|---------------------------------|------------------------|-----------------------------------|-------------------------------|-------------------------|----------------------------|
| News | 5 | 7 | 3 | 4 | 5 |
| Sports | 2 | 2 | 1 | 4 | 1 |
| Music | 51 | 50 | 50 | 42 | 53 |
| Live programs | 1 | 1 | 1 | 0 | 1 |
| Women/home programs | 1 | 2 | 1 | 1 | 1 |
| Other | 1 | 1 | 0 | 1 | 0 |
| Don't listen at this time | 39 | 36 | 43 | 46 | 38 |
| No answer | 1 | 1 | 1 | 1 | 1 |

Respondents most commonly listen to music programs in the afternoon during the week. However, approximately 39% do not listen at this time.

Table 11: Radio Programs You Listen to in the Evening on Work Days

| Evening Radio Programs | All (n=325) | Non-Separat ors (n=152) | Separators (n=144) | Males (n=73) | Females (n=247) |
|-------------------------------|------------------------|--|-------------------------------|-------------------------|----------------------------|
| News | 3 | 3 | 4 | 1 | 4 |
| Sports | 1 | 1 | 0 | 1 | 0 |
| Music | 34 | 34 | 35 | 32 | 35 |
| Live programs | 1 | 1 | 1 | 0 | 1 |
| Women/home programs | 1 | 1 | 0 | 0 | 1 |
| Other | 0 | 0 | 0 | 0 | 0 |
| Don't listen at this time | 61 | 60 | 61 | 66 | 59 |

Among those persons who listen to the radio in the evening on work days, music programs are the most popular. However, most respondents (61%) indicated they do not usually listen during these hours.

Table 12: Radio Programs You Listen to on the Weekend

| Weekend Radio Programs | All (n=325) | Non-Separat ors (n=151) | Separators (n=147) | Males (n=74) | Females (n=248) |
|-------------------------------|------------------------|--|-------------------------------|-------------------------|----------------------------|
| News | 4 | 3 | 4 | 4 | 4 |
| Sports | 3 | 2 | 4 | 10 | 1 |
| Music | 75 | 76 | 75 | 78 | 73 |
| Live programs | 2 | 1 | 2 | 0 | 2 |
| Women/home programs | 1 | 1 | 1 | 0 | 1 |
| Other | 2 | 1 | 1 | 0 | 2 |
| Don't listen at this time | 16 | 17 | 14 | 10 | 17 |

Music programs are overwhelmingly the favorite on the weekends.

Table 13: Radio Stations You Listen to on Work Days

| Radio Station | All (n=325) | Non-Separat ors (n=152) | Separators (n=149) | Males (n=74) | Females (n=251) |
|----------------------|------------------------|--|-------------------------------|-------------------------|----------------------------|
| Zaracay | 29 | 30 | 28 | 28 | 29 |
| Tarqui | 16 | 16 | 17 | 19 | 15 |
| Ecuashyri | 13 | 11 | 15 | 11 | 13 |
| Melodía | 6 | 4 | 7 | 3 | 6 |
| Sideral | 4 | 3 | 4 | 3 | 4 |
| Onda Azul | 3 | 3 | 4 | 0 | 3 |
| La Bruja | 6 | 2 | 3 | 7 | 6 |
| Quito | 3 | 7 | 5 | 1 | 3 |
| Cristal | 1 | 5 | 1 | 0 | 2 |
| Visi\ñ | 2 | 1 | 3 | 3 | 1 |
| Espejo | 1 | 0 | 2 | 1 | 1 |
| Col\ñ | 2 | 3 | 0 | 1 | 2 |
| Others | 15 | 15 | 14 | 24 | 12 |
| No response | 3 | 4 | 1 | 0 | 4 |
| Don't listen | 0 | 0 | 0 | 0 | 0 |

Zaracay is the most popular radio station listened to during the week, with Tarqui and Ecushiryi coming in second and third respectively.

Table 14: Radio Stations You Listen to on the Weekends

| Radio Station | All (n=325) | Non-Separators (n=152) | Separators (n=149) | Males (n=74) | Females (n=251) |
|---------------|-------------|------------------------|--------------------|--------------|-----------------|
| Zaracay | 29 | 28 | 29 | 31 | 29 |
| Tarqui | 8 | 11 | 5 | 12 | 6 |
| Ecuashyri | 10 | 10 | 11 | 8 | 10 |
| Melodía | 5 | 2 | 7 | 3 | 5 |
| Sideral | 5 | 4 | 7 | 5 | 5 |
| Onda Azul | 2 | 3 | 2 | 0 | 3 |
| La Bruja | 6 | 6 | 7 | 4 | 7 |
| Quito | 1 | 3 | 0 | 0 | 2 |
| Cristal | 1 | 1 | 2 | 1 | 1 |
| Visi\`n | 1 | 1 | 1 | 1 | 1 |
| Espejo | 1 | 1 | 1 | 0 | 1 |
| Col\`n | 3 | 3 | 2 | 0 | 3 |
| Others | 17 | 15 | 17 | 26 | 14 |
| No response | 7 | 8 | 5 | 4 | 8 |
| Don't listen | 7 | 6 | 8 | 5 | 7 |

Zaracay also emerged as the radio station most frequently listened to on the weekend. This held true when disaggregated by waste separation practices and sex.

Newspapers

The survey inquired as to whether or not respondents usually read newspapers. Approximately 59% of respondents, 243 persons, indicated they do read newspapers on a regular basis. When examined by sex, it was revealed that males are significantly more likely ($p<.05$) than females to read newspapers. Furthermore, females who separate their waste were more likely to read newspapers than females who do not separate their waste.

Other questions about which papers and which sections of the paper the 243 readers prefer were also asked. Results follow in the tables below.

Table 15: Newspapers You Read During the Week

| Newspapers | All (n=243) | Non-Separators (n=106) | Separators (n=118) | Males (n=65) | Females (n=178) |
|------------------|-------------|------------------------|--------------------|--------------|-----------------|
| El Comercio | 65 | 69 | 64 | 63 | 66 |
| El Hoy | 2 | 3 | 1 | 2 | 2 |
| Ultimas Noticias | 12 | 13 | 10 | 12 | 12 |
| Others | 13 | 12 | 11 | 19 | 11 |
| None of those | 11 | 5 | 16 | 8 | 12 |

Table 16: Section of the Newspaper You Read During the Week

| Newspapers | All (n=217) | Non-Separat ors (n=101) | Separators (n=99) | Males (n=60) | Females (n=157) |
|--------------------|------------------------|--|------------------------------|-------------------------|----------------------------|
| National news | 56 | 56 | 56 | 48 | 59 |
| International News | 11 | 14 | 9 | 8 | 12 |
| Sports | 13 | 14 | 14 | 32 | 6 |
| Business | 7 | 5 | 11 | 12 | 6 |
| Horoscope | 6 | 9 | 1 | 2 | 8 |
| Comic Strips | 1 | 1 | 0 | 0 | 1 |
| Other | 18 | 16 | 17 | 13 | 19 |

Table 17: Newspapers You Read on the Weekend

| Newspapers | All (n=243) | Non-Separat ors (n=106) | Separators (n=118) | Males (n=65) | Females (n=178) |
|------------------|----------------|-------------------------------|-----------------------|-----------------|--------------------|
| El Comercio | 83 | 86 | 83 | 85 | 83 |
| El Hoy | 3 | 3 | 4 | 5 | 3 |
| Ultimas Noticias | 2 | 3 | 1 | 3 | 1 |
| Others | 5 | 3 | 5 | 6 | 4 |
| None of those | 9 | 8 | 9 | 5 | 11 |

Table 18: Section of the Newspaper You Read on the Weekend

| Newspapers | All (n=221) | Non-Separat ors (n=98) | Separators (n=108) | Males (n=62) | Females (n=159) |
|--------------------|----------------|------------------------------|-----------------------|-----------------|--------------------|
| National news | 44 | 45 | 44 | 44 | 45 |
| International News | 5 | 6 | 6 | 7 | 5 |
| Sports | 17 | 18 | 18 | 32 | 11 |
| Business | 10 | 10 | 9 | 16 | 7 |
| Horoscope | 6 | 6 | 6 | 5 | 6 |
| Comic Strips | 1 | 1 | 1 | 2 | 1 |
| Other | 31 | 29 | 32 | 19 | 35 |

Magazines

Respondents were asked whether or not they regularly read magazines. Those respondents who indicated that they are habitual readers, 122 persons or 30% of the sample, were also asked to identify which magazine(s) they prefer. The results follow in Table?.

Table 19: Magazine(s) You Usually Read

| Magazine | All (n=122) | Non-Separat ors (n=59) | Separators (n=55) | Males (n=21) | Females (n=101) |
|-------------------|------------------------|---------------------------------------|------------------------------|-------------------------|----------------------------|
| Estadio | 9 | 10 | 7 | 24 | 6 |
| Vistazo | 30 | 22 | 36 | 38 | 29 |
| Selecciones | 3 | 2 | 4 | 5 | 2 |
| Vanidades | 13 | 14 | 14 | 5 | 15 |
| Buen Hogar | 21 | 22 | 22 | 5 | 26 |
| Religious reviews | 6 | 9 | 4 | 5 | 6 |
| Others | 21 | 24 | 20 | 19 | 22 |

The two most popular magazines are Vistazo and Buen Hogar, with the latter more widely read by women than men.