

Knowledge, Attitudes, and Practices of Women and Men towards recycling in North St. James Town, Toronto

St. James Town Initiative

Wellesley Institute

by

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1A Environmental Engineering

April 2009



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Summary

This report is prepared as requirement of first-year environmental engineering from University of Waterloo. This research was carried out under the St. James Town (SJT) Initiative, which is the signature project and the largest community based research action project of the Wellesley Institute. The study is prepared on the given specific amount of time in St. James Town neighbourhood which lies in the northeast corner of downtown Toronto.

The overall goal of the study was to investigate and understand the factors that prevent and/or facilitate residents from recycling the household wastes. To achieve this goal the study investigated the knowledge, attitudes, and practices (KAP) of adult residents of north St. James Town neighbourhood.

The study adopted a mixed method approach to gather data: (i) quantitative (KAP survey) and (ii) qualitative (observation checklist). The field observation checklist was prepared for the qualitative research which was completed by taking a walking tour of the SJT neighbourhood. A digital camera was used to take photographs of the existing waste disposal facilities around each of the 18 high rise buildings.

A short survey questionnaire was developed for the KAP (quantitative) study. A total of 55 participants (28 males, 27 females) from six selected buildings participated in this study. The majority of participants surveyed (19 participants or 35%) were in the age-group of 30-39 years. More than half of the participants were employed and all participants have been residing in St. James Town somewhere between one and four years. The participants commented that the recycling bin is placed far from the apartment they live in. This is the main reason that the

participants do not actively perform recycling. The other reason is that the lack of knowledge on which waste materials to recycle. The attitude of the tenants towards recycling tends to be very positive and the rates are much higher than the knowledge and practices. About 69% (Male: 71%, Female: 67%) of the participants did practice recycling, however only 20% participants recycled their household waste every day. Whereas the knowledge of the tenants is only 51% the female participants do fewer practices on recycling household waste. According to the result, female population has higher knowledge (56%) regarding recycling than the male population (46%) do. About 22% participants received information about recycling from friends and family members. Out of 55 participants, 96% of participants reflect the positive attitude towards recycling. The result shows that 41(75%) participants want to know more about recycling, and 64% of participants would like to participate in the recycling program. The results indicate that the recycling practices are related to the recycling collection site, and therefore we recommend that the recycling bins be made easily accessible by the tenants. The positive attitude towards information needs indicates information sharing is much needed among community members, which could help to understand the perspective of each others on recycling practice.

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1. INTRODUCTION

Background

1.1 The Wellesley Institute

The Wellesley Institute is a Toronto-based non-profit and non-partisan research and policy institute. This policy institute works at the local levels with many partners in Toronto, across Ontario and also works nationally to help in advancing urban health (Wellesley Institute, 2009).

The focus of the institute is to develop research and find solutions to the problems of urban health and health disparities through advancing policy alternatives. The institute also supports non-profit community groups by providing workshops, training and capacity building. The Wellesley Institute was created after the Wellesley hospital was commissioned in 1998 to continue to find solutions to problems of urban health (Wellesley Institute, 2009). The Wellesley Institute is well established in the North St. James Town neighborhood and has been committed to promote its residents' health and well being through community-based action research addressing the negative effects of the social determinants of health.

1.2 The St. James Town Initiative

The St. James Town (SJT) Initiative, in progress since March 2007, is the signature project of the Wellesley Institute and is its largest community-based research and community capacity building Initiative of the institute. The Initiative is focused on the health and wellbeing of newcomer residents of St. James Town neighbourhood (St. James Town Initiative, 2009). The SJT Initiative focuses on the social, physical, economic and environmental conditions and examines whether these factors have a differential effect on the health and wellbeing of newcomers of different ethno-racial backgrounds and gender (Community Mapping, 2009).

The Initiative uses two approaches to accomplish its goals: (i) gathering new information (research) for informing and mobilizing the community as well as for policy information; (ii) building human capacity in the community to enable people to take leadership roles and supporting them to bring about the positive social changes required for the development of the community. The Initiative's community-based and collaborative approach to the research and capacity building process is expected to produce findings that will increase knowledge, inform policy and be a catalyst for concrete actions that will make the SJT neighbourhood a healthier place to live (Community Mapping, 2009).

1.3 St. James Town Community

St. James Town community lies in the northeast corner of downtown Toronto. The neighbourhood is bounded by four streets, Parliament Street to the east, Bloor Street East to the north, Sherbourne Street to the west, and Wellesley Street East to the south (Appendix A). St. James Town is one of the most densely populated neighbourhood in North America density of 70,500 people/km² (compared to Toronto's average of 800 people/km²). Approximately 18,000 to 25,000 people reside in 18 aging high rise buildings, on 0.23 km² of land. Today, it is home to a very diverse population. Twenty-six percent of SJT's population immigrated in the last 5 years and an additional 17% immigrated 5-10 years back, and the majority are visible minorities (Statistics Canada, 2006).

1.4 Literature Review

To reduce the ever increasing flow of waste is a challenge because the amount of waste has been increasing in every household (Refsgaard, K., and Magnussen, K., 2008). People's behaviour and attitudes regarding (organic) waste recycling differs from the types of neighbourhoods they

live in (Refsgaard, K., and Magnussen, K., 2008). In Toronto, apartments and condominiums recycle only 13% of waste. That means 87% of the garbage generated goes to the landfill (City of Toronto, 2009). Canada produces 791 kg per capita of municipal waste each year, which is almost twice as much as generated by Japan (The Conference Board of Canada, 2009).

Municipal waste contributes to environmental problems including habitat destruction and ground water pollution, and other forms of air, soil, and water contamination (The Conference Board of Canada, 2009).

Recent research on environmental concern and its implication to household waste separation and disposal in Ethiopia shows that a proper understanding of the relationships that exist between the environment, waste separation and disposal can contribute to good waste management and therefore, a cleaner and healthier environment (Tadesse, T., 2009). There are a number of factors that have been found to contribute to individual's behaviors concerning waste. The education level of household members, shorter distance to waste containers and household income are found to increase the probability of proper disposal of waste into containers (Tadesse, T., 2009). One common method that city households in developing countries use to get rid of their wastes is dumping in an unauthorized area (Tadesse, T., 2009).

The time and effort was needed to separate waste was identified as a constraint among some of the residents as described in the research completed on pilot recycling program in Quito and the factors associated with residents' participation in separating their wastes (Hernandez, O., Rawlins, B., & Schwartz, R., 1999). Some participants responded that they personally gained or lost the self-growth and self-image by separating waste (Hernandez, O., Rawlins, B., & Schwartz, R., 1999). They have set a good example for their children and showed their level of involvement in community development affairs.

1.5 Knowledge, Attitudes, and Practices (KAP)

KAP studies investigate the knowledge, attitudes and practice (behavior) of respondents on a particular subject of interest. KAP studies tell us what people know about certain things, how they feel, and how they behave. This method of investigation is widely used around the world in public health, water supply and sanitation, education and many other programs.

The Knowledge possessed by a community refers to their understanding of the topic of interest for example for this study it is on recycling. Attitude refers to their feelings toward recycling, as well as any preconceived ideas they may have towards it. Practice refers to the ways in which they demonstrate their knowledge and attitudes through their actions (Eckman, K., 2008).

KAP study is used in this research to evaluate the tenants' knowledge, attitude, and practice in St. James Town neighbourhood. KAP study is chosen for this research because it will help us understand what the tenants know about the existing recycling and waste management facilities, how they feel, and how they behave.

1.6 Rationale for the study

SJT neighbourhood faces many challenges. The provision of basic sanitation services represents a continuing challenge throughout the neighbourhood and a lack of adequate waste disposal is a concern for many residents in St. James Town. Many research findings indicate that solid waste management is a critical component of providing basic sanitation services and reducing environmental health threats to communities (Hernandez, O., Rawlins, B., & Schwartz, R., 1999). SJT provides an excellent context for this study because the challenges in reducing the ever-increasing flow of waste and unmanaged recycling of organic waste, paper, glass, metals,

etc. are enormous. Recycling and proper disposal of waste materials are among the priorities of the city however, we do not know of any research that investigated the knowledge, attitude and practices of residents, mainly among immigrant population, in the neighbourhood.

2. Objectives

2.1 General Objective

The main objective of the study was to investigate and understand the factors that prevent residents from recycling.

2.2 Specific Objectives

- To investigate the knowledge, attitude, and practice (KAP) towards recycling among adult residents of St. James Town neighbourhood.
- To document current recycling and waste management facilities available in St. James Town neighbourhood.

3. Methodology

The data for this study was collected using 2 research method:

- a. Quantitative
- b. Qualitative

3.1 Quantitative

Instrument Development

A survey was developed after a review of the available literature. To collect the information on residents the survey aims to assess the knowledge, attitude and, practice (KAP) among the

tenants living in the SJT neighbourhood. To obtain the necessary variety in order to study the KAP of the tenants, the questionnaire was designed which consisted of 14 open and close-ended questions. The questionnaire included details such as demographic data and multiple variables to capture the knowledge, attitude, and practices of residents.

The questionnaire was revised and finalized after pre-testing with five residents of the neighbourhood. The participants who participated in the pre-test were not included in the survey. An average time of 15 minutes was required to complete the questionnaire. The sample questionnaire is included as Appendix B.

The study was carried out between March 9, 2009 and was completed by April 29, 2009. The buildings in St. James Town neighbourhood are divided by six streets into several compartments, highlighted in the map attached as Appendix A. One building from each of these six streets was randomly chosen to include in the survey. It was decided that the interviewer will spend one working day in each of these buildings. It was also decided that the interviewer will stand at the lobby/main entrance of the building at particular times of the day. The survey was conducted in two different time slots of the day; morning (9:00 AM to 12:00 M) and afternoon (3:30 PM to 6:00 PM). This time was chosen because maximum number of residents passes by the main entrance at this time of the day. This strategy would provide opportunity to maximum number of residents to choose to participate in the study. The people passing by the lobby were requested to participate in the study. The purpose of the study was explained to them and a verbal consent was obtained to use the information for academic purposes and by the SJT Initiative for program planning. They were assured that their identity would not be disclosed at any time.

3.1.1 Data Analysis

a. Data cleaning

After the completion of the survey, the survey questions were examined for completeness and consistency. All of the questionnaires were complete; except two participants did not mention their length of residency in SJT. It was decided to impute the data by using the average number of years from all the participants. Secondly, to facilitate analysis, the responses to open-ended questions were examined and were categorized into categories.

b. Data entry

The data was entered into the Excel spreadsheet and was analyzed to obtain the results. The data counts were done manually using tally chart for the questions with multiple answers.

3.2 Qualitative

The qualitative research phase included an observational study of the SJT neighbourhood. First of all, an observational checklist for the walking tour of neighbourhood was developed. The observational checklist was prepared to describe the existing facilities in the neighbourhood such as the numbers of recycling bin, and waste garbage containers. It was also used to note if there were any recycling bins in the building's lobby area, in the mail room, and and if there were recycling awareness posters posted in any of these areas. The digital camera was used to take photographs of the existing recycling and waste management facilities provided in the neighbourhood.

4. Results

- a. Quantitative results
- b. Qualitative results

4.1 Quantitative results

A total of 55 residents participated in this study. Only residents who were 15 years and older were invited to participate in the study. Out of the 55 respondents, 28 (51%) of them were males, and 27 (49%) of them were females. The majority of participants surveyed (19 participants or 35%) were in the age-group of 30-39 years. More than half of the participants were employed, 29 (53%), while the remaining were unemployed. About 21 (38%) participants have been residing in St. James Town for 0-4 years, 16 (29%) participants for 5-9 years, and 33 (18%) participants for more than 10 years. Thirty one (56%) participants reported their self-identification of ethnicity from Asia. Figure 1 illustrates the distribution of the reported self-identification of study participants by ethnicity.

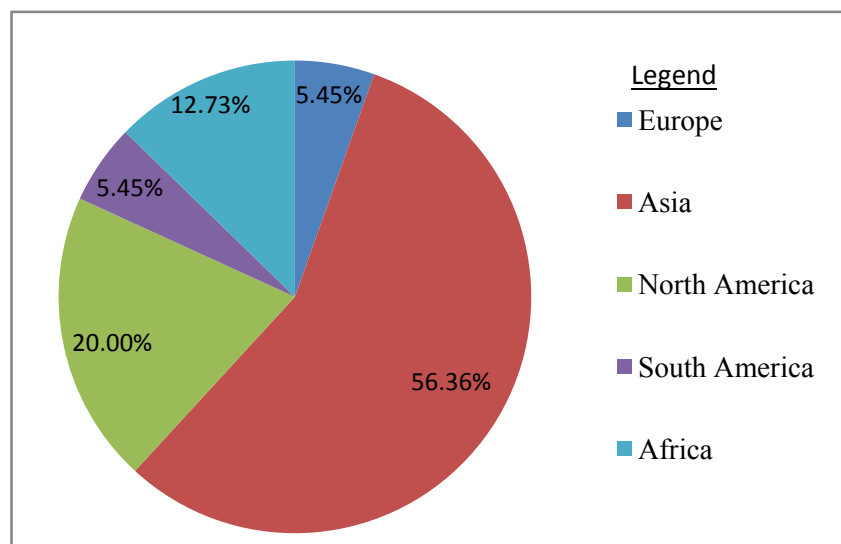


Figure 1 Reported self-identification of ethnicity

Most of the participants had college level education, 24 participants (44%), compared to 18 (33%) participants from high-school and 13 (24%) participants from university level education.

Table 1 presents the summary of demographics provided by participants.

Table 1 Demographic percentage distribution according to variables

Variables Demographic	Male % (n)	Female % (n)	Total % (n)
Gender	51 (28)	49 (27)	100 (55)
Age			
15-19	32 (9)	15 (4)	24 (13)
20-29	7 (2)	19 (5)	13 (7)
30-39	29 (8)	41 (11)	35 (19)
40-49	14 (4)	15 (4)	15 (8)
≥50	18 (5)	11 (3)	15 (8)
Economics			
Education			
High School	36 (10)	30 (8)	33 (18)
College	43 (12)	44 (12)	44 (24)
University	21 (6)	26 (7)	24 (13)
Employment			
Yes	57 (16)	48 (13)	53 (29)
No	43 (12)	52 (14)	47 (26)
Residency in SJT (years)			
0-4	36 (10)	41 (11)	38 (21)
5-9	32 (9)	26 (7)	29 (16)
10+	36 (10)	30 (8)	33 (18)
Ethnicity			
Europe	5 (3)	0 (0)	5 (3)
Asia	33 (18)	24 (13)	56 (31)
North America	9 (5)	11 (6)	20 (11)
South America	2 (1)	4 (2)	5 (3)
Africa	2 (1)	11 (6)	13 (7)

Table 2 shows that 38 (69%) of participants (Male: 71%; Female: 67%) did practice on recycling. Based upon the results, it shows that male participants perform more recycling practice than the female participants.

Table 2 Differences on recycling practice by gender

Gender	Count		%	
	Yes	No	Yes	No
Male	20	8	71	29
Female	18	9	67	33
Total	38	17	69	31

In the present study, 21 (38%) participants have been in living in St. James Town for less than four years. Out of 21 participants, only 7 (33%) participants were aware of the existing recycling program, 6 (29%) had no knowledge, and 8 (38%) were not aware of the existing recycling program. In contrast to this, 18 (33%) participants have been residing in SJT for over ten years. Approximately, three fourths, 13 (72%) participants were aware of the existing recycling program, only 2 (11%) participants had no knowledge, and 3 (17%) participants were not aware among the study population. According to the above results, the study shows that the participants who have been living in the neighbourhood for a longer period of time had a better knowledge of existing recycling program.

A surprising finding in this regard was that almost all the (96%) participants were aware of the importance of recycling program. Out of those participants, 51 (96%) responded that recycling is strongly helpful to save the environment, 37 (70%) responded that recycling keeps the community clean, and 19 (36%) responded that recycling decreases the amount of garbage. In the study, 40 (73%), majority of the participants knew where the recycling bin was located in their building.

This survey found that only 11 (20%) participants do recycle their household waste every day, and 15 (27%) participants do not recycle (Table 3). This indicates that the participants, who do not recycle, throw their waste into the garbage container.

Table 3 Response to practice on recycling in the study population, SJT, Toronto

Response	Count	%
Everyday	11	20
2-3 times a week	10	18
Once a week	9	16
Rarely	8	15
Never	2	4
Do not Recycle	15	27
Total	55	100

It was found that participants reported several reasons for not recycling. Out of 15 participants who do not recycle, reasons responded were: 6 (40%) participants said it is too time consuming, 3 (20%) participants said the recycling bins are far away, 9 (60%) participants said they do not know what to recycle, and 8 (53%) participants said they do not know where to recycle. This results shows that there is a high proportion of study participants reporting what waste materials to recycle and where to recycle.

Among the 40 participants who do recycle, 34 (85%) recycled magazine, newspaper, and plastic bottles; 29 (73%) recycled aluminum cans; and 24 (60%) recycled milk and juice cartons. The least materials recycled by the participants were: white paper (50%), plastic bags (43%), cardboard (33%), and metal materials (25%).

It was found that the participants had concerns regarding recycling. Out of surveyed population, there was a high response of 27 (45%) participants to take the materials where the recycling collection site is located. The recycling facilities were not available inside the building; instead the tenants had to go outside the building to recycle

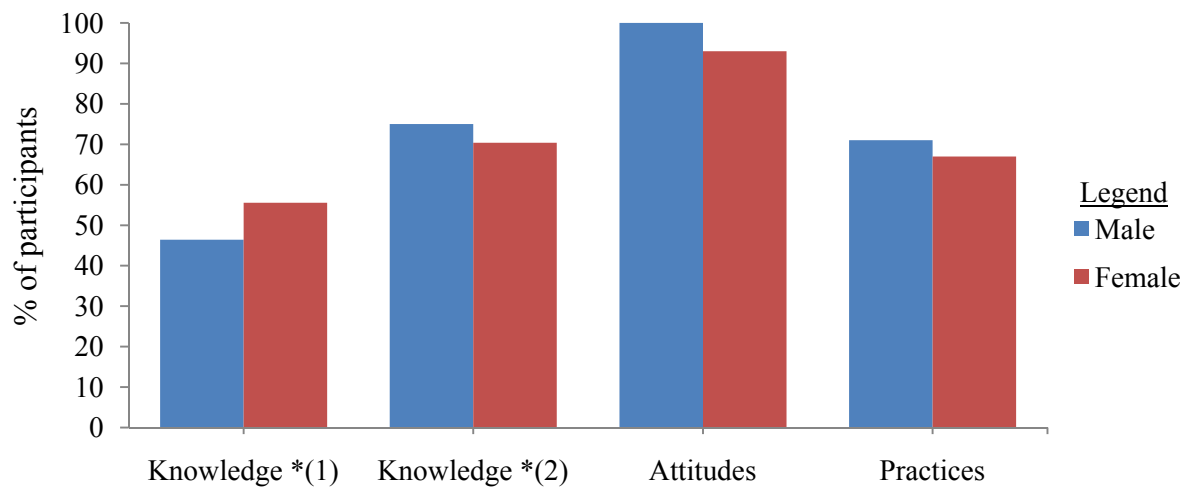


Figure 2 Percentage distributions of Knowledge, Attitudes, and Practices by gender

* Knowledge was measured by 2 questions.

(1) Do you know if there is any recycling program in St. James Town?

(2) Do you know where the recycling bin is in your building?

Figure 2 highlights the distribution of knowledge, attitudes, and practices of the participants by gender. There was no big difference on the proportions of knowledge between male and female. According to the first knowledge question analyzed, the female (56%) and better knowledge than male (56) participants. But the second knowledge question shows that, the male (75%) has a higher knowledge than the female (70%) participants. It was observed that the attitudes towards recycling among adult residents (96% overall; Male: 100%; Female: 93%) tend to have significantly higher frequency which is comparable to the results found in knowledge and practices. The recycling practices were done more by male (71%) participants than the female (67%).

4.1 Qualitative results

All the buildings had recycling and waste management facilities. The observer noticed that the current situation of recycling and waste management is not hygienic for the healthy living neighbourhood. The waste from the garbage container were over-flowed and scattered around the dumping site as seen in Figure 3.



Figure 3 Existing over-flowed garbage container being captured from one of the buildings in SJT, Toronto.

The recycling and waste containers were placed together in all the buildings, but the placement of containers differed from one building to the other. Out of 18 buildings 8 buildings had a mail room; 5 out of 8 (63%) buildings had a recycling bin in their mail room. Six out of 18 (33%) buildings had placed recycling bins in more than one place. But, only 7 out of 18 (38%) buildings did have recycling posters posted on their building. However, all the instruction was in the English language. This points out to the fact that, the 66% of residents speak a first language

other than English. The following Figure 4 clearly reflects the garbage site being poorly maintained and also shows the in-organic waste been thrown around the dumping area.



Figure 4 Existing poorly managed waste collection site in North SJT, Toronto.

5. Study Limitations

This research has been conducted in the context of some limitations. The time spent on the field would be one of the limitations of the study. The time spent on the qualitative field work was limited. If more time was allowed than more data would be collected. The surveyor would have captured more information from the field.

6. Conclusion

The intent of the project was to collect the data by conducting the survey and use them to investigate the knowledge, attitudes, and practices of adult men and women towards recycling. The finding of this study shows that a higher percentage of male participants had a good positive attitude towards recycling as compared to female participants. The attitudes of individuals tends

to be higher than knowledge and practices towards recycling. This may be due to the influence of the individual which could be considered as to be motivated by the community.

Results of this study suggest that men tend to recycle more as compared to women participants. The male participants also tend to have higher knowledge on the placement of recycling bin in the building. Finding also indicate that individuals who had been in SJT for a longer period of time had better knowledge of recycling program than the individuals who had resided in the neighbourhood for a shorter period of time. The recycling information flyers are available only in English language.

Time and effort needed to separate the waste is identified as one of the main constraints for not recycling. Participants reported that accessibility to recycling was difficult and it was time consuming. Only 20% of households recycle every day. Moreover, participants also expressed that building management needs cleaner and more recycling bins.

7. Recommendations

1. To increase knowledge of children, youths, and adults towards recycling, awareness programs needs to be organized in various languages. This will help improve waste management by improving recycling practices within households.
2. Encourage individuals from different ages to form information sharing group. This will help understand the perspectives of different age-groups regarding recycling practices. This strategy would also improve the knowledge, attitudes, and practices of children, youths and adults, towards recycling.

3. To facilitate immigrant residents understand the importance of recycling, recycling flyers should be posted in major ethnic languages.
4. Recycling collection site or the recycling bin should be placed in an area which is easily accessible by tenants. Also, placement of more recycling bins and regular emptying of recycling bins is needed.
5. Future research should focus on the architectural design of the buildings and look for possibilities of accessing to recycling on each floor.

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Appendix A

Map of North St. James Town

Appendix B
Sample of Survey Questionnaire