DATA BOOK 11

PUBLIC EDUCATION AND SOCIAL CONSIDERATIONS

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PUBLIC EDUCATION AND SOCIAL CONSIDERATIONS

11.1 List of Non-Governmental Organisations (NGOs)

A list of non-governmental organisations (NGOs) having a direct of indirect involvement with solid waste in Nairobi is as follows:

United Nations Environment Programme (UNEP)
Foundation for Sustainable Development in Africa (FSDA)
Society for the Protection of the Environment (SPEK)
East African Environmental Network
Tropical Nature and Cultural Safaris
Kenya Red Cross
Green Belt Movement
Undugu Society
Uvumbuzi Club
Environmental and Urban Development Training Project (The Green Towns Project)
Eastleigh Community Centre
Rotary Club
Mazingira Institute
National Environment Secretariat (NES)
Kenya Youth and Habitat Organisation
Action Aid International Green Africa Project
Kenya Association of Youth Organisations (KAYO)

11.2 List of Community Based Organisations (CBOs)

A list of community based organisations (CBOs) having a direct of indirect involvement with solid waste in Nairobi is as follows:

The Mukuru Recycling Project Dandora dump site
The Kuku Women's Group Dandora
The Afya Bora (self-help group) Kawangware
The Kitui Puwani Integrated Project* Biafra
Korogocho TAC Korogocho
Korogocho Market Usafi Group Korogocho
Huruma Cisa Huruma
Mathare Mbolea Mathare
Bidii Self-Help GroupPumwani
City Park Environment Group City Park Market
Kayaba Mwangaza Usafi Group industrial Area
Wekhonye Women's Group Dagoretti Corner
Lunga Lunga Community Workers Industrial Area
Langata Youth Group Langata
Mathare Youth Sports Organisation Mathare
Ushirika Women's Group Kibera
Silanga Usafi Group Kibera

11.3 Sheet Used for Dandora Scavenger Survey

No.	Name	Age	Education	Mother Tongue	No.of persons employed	Residence	Things collected	Daily Min. Wt (kg)	Daily Max. Wt (kg)	Daily Min. Income(kshs)	Daily Max. Income(kshs)	Point of sale	Reason for work
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
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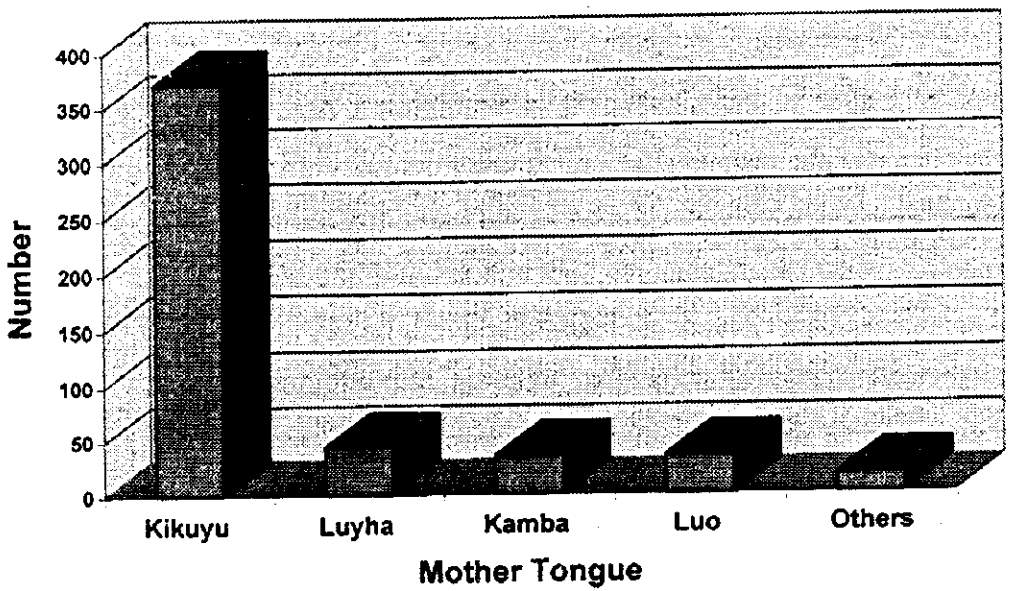
27													
28													
29													
30													
31													
32													
33													

11.4 Analysis of Dandora Scavenger Survey Data

MOTHER TONGUE OF RESPONDENTS

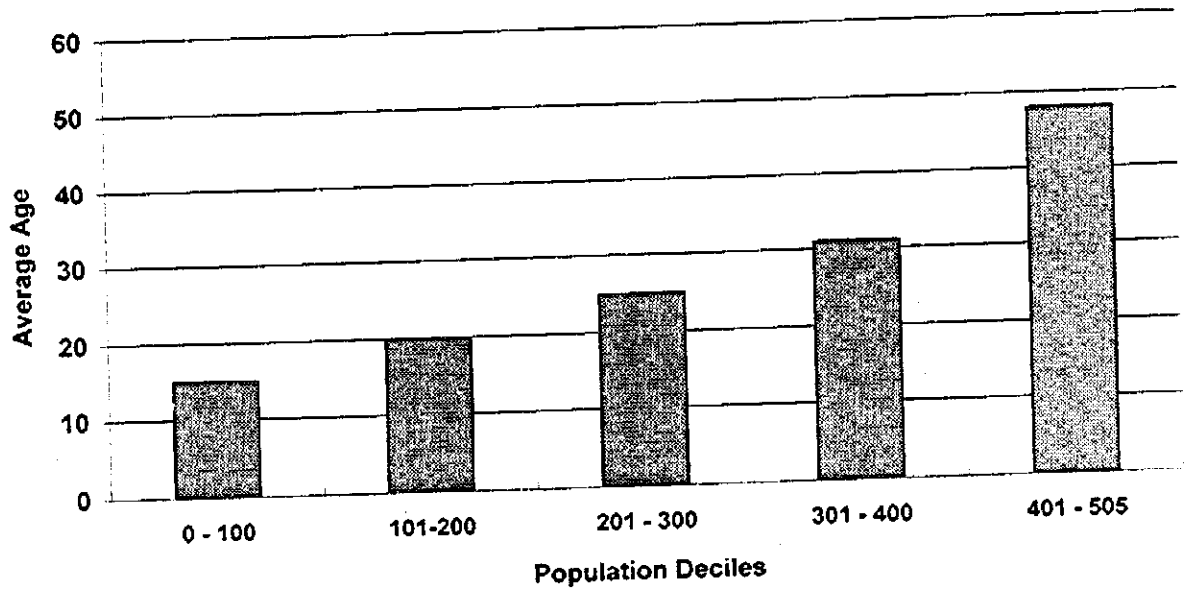
NAME	NUMBER	%
Kikuyu	372	74.0%
Luyha	44	8.7%
Kamba	35	7.0%
Luo	35	7.0%
Others	17	3.4%
Including:		
Masai	4	0.8%
Embu	2	0.4%
Meru	2	0.4%
Somali	2	0.4%
Taita	2	0.4%
Borana	1	0.2%
Kisii	1	0.2%
Mumbarua	1	0.2%
Mumbo	1	0.2%
Nandi	1	0.2%
Total	503	100.0%



ANAYLSIS OF DANDORA SCAVENGER SURVEY DATA

AGE DISTRIBUTION OF SCAVENGERS AT THE DANDORA SITE

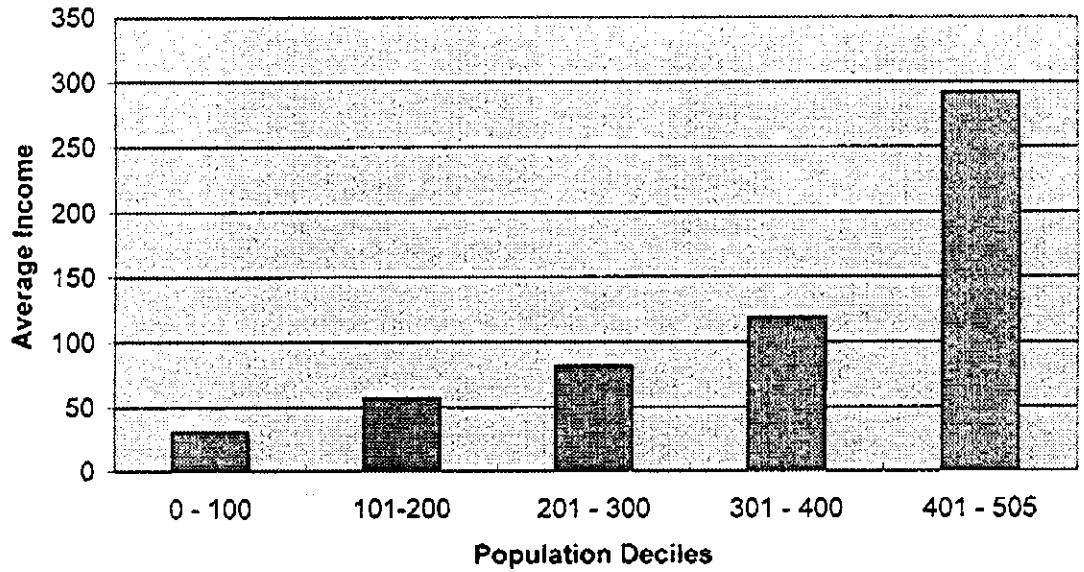
Population Quintile	Age Disribution Average	St. Devn.
0 - 100	15	3
101-200	20	1
201 - 300	25	1
301 - 400	31	2
401 - 505	48	11
Total	28	13



ANAYLSIS OF DANDORA SCAVENGER SURVEY DATA

INCOME DISTRIBUTION OF SCAVENGERS AT THE DANDORA SITE

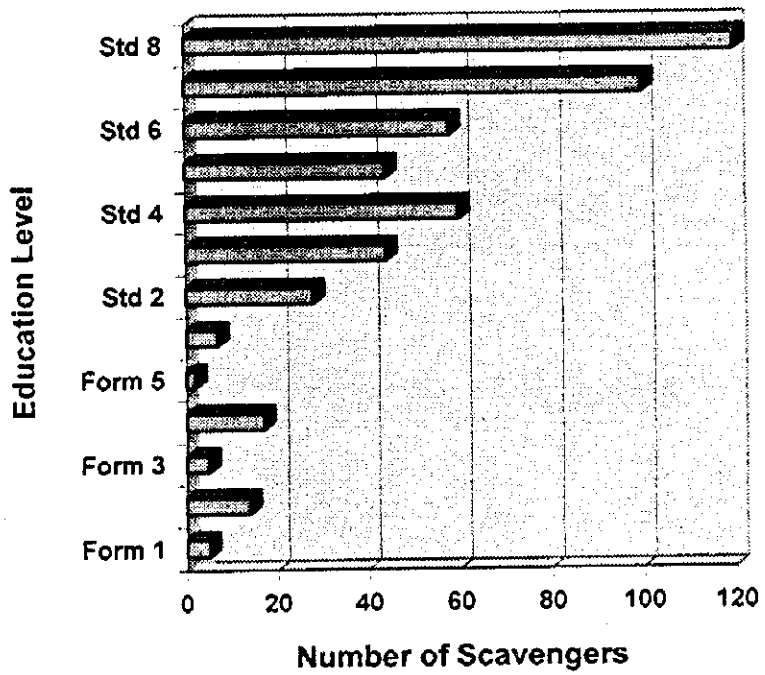
Population Quintile	Average Income
0 - 100	31
101-200	57
201 - 300	82
301 - 400	119
401 - 505	292
Total	118
	(STD: 111)



ANAYLSIS OF DANDORA SCAVENGER SURVEY DATA

EDUCATION LEVELS ATTAINED BY SCAVENGERS AT THE DANDORA SITE

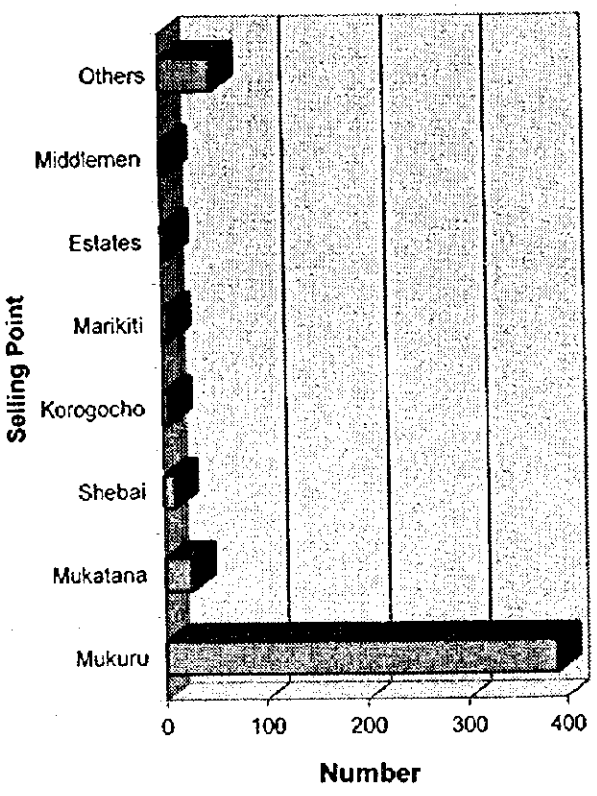
LEVEL	NUMBER	%
Form 1	5	1.0%
Form 2	14	2.8%
Form 3	5	1.0%
Form 4	17	3.4%
Form 5	2	0.4%
Std 1	7	1.4%
Std 2	28	5.6%
Std 3	44	8.7%
Std 4	60	11.9%
Std 5	44	8.7%
Std 6	58	11.5%
Std 7	100	19.8%
Std 8	120	23.8%
Total	504	100.0%



ANAYLSIS OF DANDORA SCAVENGER SURVEY DATA

PLACE AT WHICH MATERIAL RECOVERED AT THE DANDORA SITE ARE SOLD

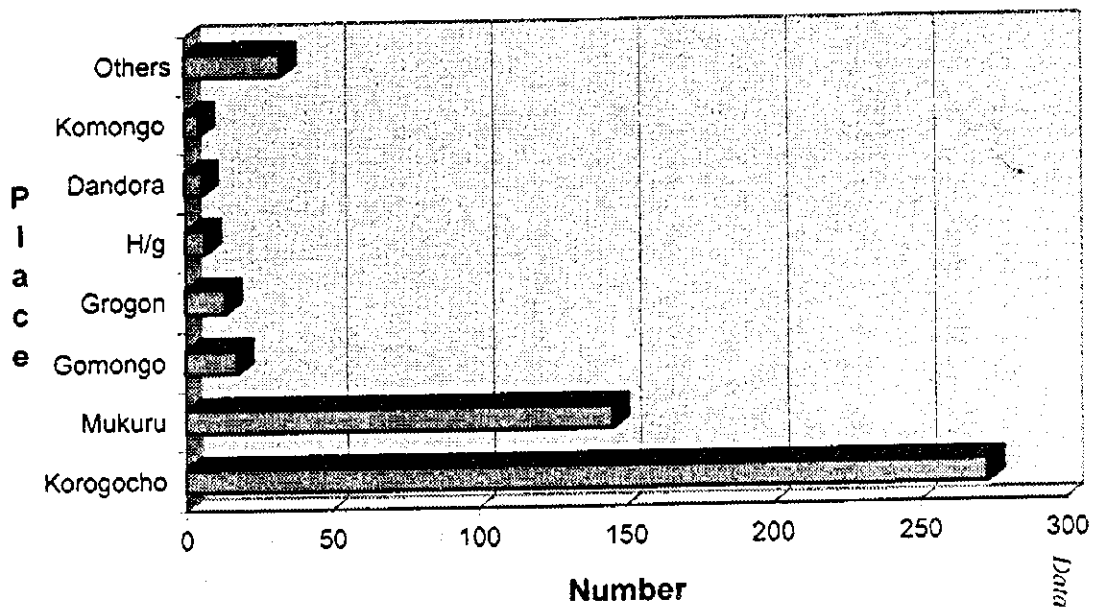
NAME	NUMBER	%
Mukuru	391	77.7%
Mukatana	27	5.4%
Shebai	11	2.2%
Korogocho	6	1.2%
Marikiti	6	1.2%
Estates	5	1.0%
Middlemen	5	1.0%
Others	52	10.3%
Including;		
H/g	3	0.6%
Kwa Mama	3	0.6%
Ndoch	3	0.6%
Rash	3	0.6%
Broker	2	0.4%
Cinii	2	0.4%
Dandora	2	0.4%
Gikomba	2	0.4%
Kangiri	2	0.4%
Kimani	2	0.4%
Mothers	2	0.4%
Mumatha	2	0.4%
Ndungu	2	0.4%
Anybody	1	0.2%
Carpenter	1	0.2%
Centro	1	0.2%
Chambai	1	0.2%
Company	1	0.2%
Duke	1	0.2%
Garege	1	0.2%
Gomongo	1	0.2%
Grogon	1	0.2%
Kasabuni	1	0.2%
Kasungu	1	0.2%
Mama maina	1	0.2%
Market	1	0.2%
Mukatha	1	0.2%
Mukulima	1	0.2%
Mutaani	1	0.2%
Oyuki	1	0.2%
Scrap	1	0.2%
Shalimu	1	0.2%
Steel Bilet	1	0.2%
Warokoti	1	0.2%
Were	1	0.2%
Total	503	100.0%



ANAYLSIS OF DANDORA SCAVENGER SURVEY DATA

PLACE OF RESIDENCE OF RESPONDENTS

NAME	NUMBER	%
Korogocho	273	54.4%
Mukuru	146	29.1%
Gomongo	18	3.6%
Grogon	14	2.8%
H/g	7	1.4%
Dandora	6	1.2%
Komongo	5	1.0%
Others	33	6.6%
Including:		
Boma	4	0.8%
Kinyago	4	0.8%
Hyrage	3	0.6%
Kariobangi	3	0.6%
Gitanduri	2	0.4%
Gitari manjo	2	0.4%
Ketaremaringo	2	0.4%
Kitathuru	2	0.4%
Maili saba	2	0.4%
Batuma	1	0.2%
Gituamba	1	0.2%
Kimbarake	1	0.2%
Kis.Ndogo	1	0.2%
Mwengenye	1	0.2%
Ngei	1	0.2%
Ngunyumu	1	0.2%
Ngurukora	1	0.2%
Siranga	1	0.2%
Total	502	100.0%



11.5 Sheet Used for Public Awareness Survey for Nairobi City Solid Waste Management

QUESTIONNAIRE

Interviewer's Name:_____

Date: _____

Estate:_____

Enumerators Observations

1. Type of Locality:

I. Detached ☐
II. Wall to Wall Houses ☐
III. Flat Complex ☐
IV. Low Income Housing ☐
V. Slum Dwellings ☐

2. Distance from the house to road (road width about: _____)

I. In front of the premises ☐
II. Less than 10m ☐
III. 10-29m ☐
IV. 30-49m ☐
V. 50m or more ☐

3. If there is a communal container or discharge point, how far is it from the house?

I. In front of the premises ☐
II. Less than 10m ☐
III. 10-29m ☐
IV. 30-49m ☐
V. 50m or more ☐
VI. No communal container / collection point ☐

GENERAL QUESTIONS ON HOUSEHOLD STRUCTURE AND SOCIO-ECONOMIC CONDITIONS

4. Type of respondent:

I. Head of household ☐
II. Wife ☐
III. Other house member ☐
IV. Housekeeper (servant) ☐
V. Others (please specify) ☐

5. What do you do for a living?)_____

_____

_____

6. How many people live in your house?

I. Children (under 18 yrs) ☐
II. Adults ☐

7. How long have you lived here?

I. Less than 5 years ☐
II. 5-9 years ☐
III. 10-19 years ☐
IV. 20 years or more ☐
V. I don't know ☐

9. What is your total household income per month? Kshs:_____

10. Domestic Animals if any:

I. Cattle ☐
II. Poultry ☐
III. Pets ☐
IV. Others ☐

11. Consumer Durables in the Household:

I. Fridge ☐
II. T.V. ☐
III. Radio ☐
IV. VCR ☐
V. Others (specify) ☐

12. Ownership and Expenditure

a. Are you the owner of these premises or a tenant?

I. Owner ☐
II. Tenant ☐

b. Tax paid if Owner (ground rent and rates) Kshs._____

Rent Paid if Tenant Kshs._____

c. What are the other expenses of the household per month:?

I. Water Kshs.
II. Electricity Kshs.
III. Transport Kshs
IV. Education Kshs.
V. Food Kshs.

d. How much do you pay for service charge? Kshs._____

13. Building Utility

I. Fully Residential ☐
II. Commercial/Residential ☐

WASTE GENERATION AND DISPOSAL AT USER PREMISES

14 Who removes waste from the house?

I. Head of household ☐
II. Wife ☐
III. Child (below 18) ☐
IV. Other house member ☐
V. Housekeeper (servant) ☐
VI. Others (please specify) ☐

15.(a)What types of container do you use for holding waste in the house?

I. Plastic bag (provided by collection company) ☐
II. Plastic bag (others) ☐
III. Plastic buckets/dustbins ☐
IV. Metal bucket ☐
V. Others (please specify) ☐

(b) What is the size of container used_____litres

(c) Do you have particular reason for your preference?_____
_____
_____

16.- Where do you dispose of waste from the house?

a) To your own dustbin ☐
b) To a communal container/ discharge point ☐
c) Around your premises ☐
d) Other (please specify) ☐

If answer to **16** is **(A)** GO to question **17**. If **(B)** go to questions **18**. If **(C)** go to Question **19**.

17 *Questions for Respondents with Own Dustbins*

(a) What type of dustbin do you have? (*Interviewer will be shown to establish type & check if it has lid or not*) _____

(b) What is the size of the dustbin? _____Litres

(c) Where do you keep the dustbin?

I. In front of the house ☐
II. Behind the house ☐
III. In the house (kitchen) ☐
IV. Other please specify ☐

(d) How many dustbins do you have?_____

(e) Where do you take the dustbin for collection by the collection service?_____

_____

Now go to Question 20

18 ***Questions for Respondents Using a Communal Container or Discharge Point***

(a) How far is the communal container or discharge point from your house?

I. In front of the premises ☐
II. Less than 10m ☐
III. 10-29m ☐
IV. 30-49m ☐
V. 50m or more ☐

(b) Do you discharge waste at a fixed time? Yes ☐ No ☐

If **YES** please specify (*Morning, Mid-morning, Lunchtime, Afternoon, Evening, Late Night*) _____

(c) How often do you take waste to the discharge point?

I. Once a day ☐
II. Twice a day ☐
III. Once in Two days ☐
IV. One a week ☐
V. Others (please specify) ☐

Now go to Question 20

19 Why do you dispose of waste around your house?

I. No communal discharge point ☐
II. Too far to communal discharge point ☐
III. Other (Please specify) ☐

20 How do you dispose of garden waste (fallen leaves and grass trimmings)?

I. Take to a designated collection point ☐
II. Heap in front of house ☐
III. Burn ☐
IV. Use for composting ☐
V. No need to dispose garden wastes ☐
VI. Others (Please specify) ☐

21. Does anyone in your premises sweep the road shoulder or public area in front of your premises?

Yes ☐ No ☐ I don't know ☐

If **YES** please specify frequency _____

22. Does anyone in your premises clean the open drain around your premises?

Yes ☐ No ☐ I don't know ☐

If **YES** please specify frequency _____

23. How do you dispose of bulky wastes *(such as condemned furniture etc.)*?_____

_____

_____

_____

WASTE COLLECTION SERVICES

24. Is there a collection service in your area?

Yes ☐ No ☐ I don't know ☐

If answer to Question **24** is **NO** go to Question **25**. If **YES** go to Question **29**.

Questions for Respondents Without a Waste Collection Service

25 Would you like to have a collection service?

Yes ☐ No ☐ I don't know ☐

If answer to **25** is **YES**, **GO** to Question **26**. If **NO**, go to Question **28**.

26 What type of collection service would you like?

(a) Waste to be collected from your house and taken to a communal discharge point ☐
(b) Waste to be collected from a communal discharge point and your neighbourhood kept clean ☐
(c) Both of the above. ☐
(d) Others (please specify) ☐

27 Would you be willing to pay for a collection service?

Yes ☐ No ☐ I don't know ☐

If **YES**, how much would you be willing to pay Kshs._____

If **NO** please give reasons for not wanting a collection service_____
_____
_____
_____

28 Have you ever complained to the authorities about removal of waste from your street?

Yes ☐ No ☐

If YES (please give details)_____

_____

_____

Now go to Question 34

Questions for Respondents With a Waste Collection Service

29 How frequently is your waste collected?.

Once a week ☐ Twice a week ☐ Once a fortnight ☐

Once a month ☐ Others (please specify) ☐

30. Is collection done at a fixed time of the day? Yes ☐ No ☐

If **YES** specify the time of collection (whether *Early Morning, Mid-Morning, Lunchtime, Afternoon. Evening, Late Night)* _____

31 Is collection by the Nairobi City Council or by a private company?_____

32 How much do you pay for the collection services per month? Kshs._____

33. Are you satisfied with the collection services? Yes ☐ No ☐

a) If **NO**, what are the reasons? (*Tick as many as applicable*)

I. Frequency of collection service is low ☐
II. Collection time is irregular ☐
III. Collection time is very early or late ☐
IV. Behaviour of worker is bad ☐
V. Collection fee is expensive ☐

Others (please specify)_____

_____

_____

b) Would you be willing to pay more for improved collection services in your area? Yes ☐ No ☐

c) If **YES** how much in total would you be willing to pay per month Kshs_____

QUESTIONS ON RECYCLING

34. Are you aware that newspaper, bottles etc. can be recycled?

Yes ☐ No ☐

35. Are you aware that there are people reclaiming materials from refuse at the dumping ground?

Yes ☐ No ☐

36. Do collectors come to your premises to collect or buy waste materials?

Yes ☐ No ☐

If **YES, GO** to Questions **37 - 40. if NO, GO** to Question **41.**

Questions for Respondents With a Waste Recycling Collector

37. How often does the collector visit your premises?

I. Once a week ☐
II. Once a month ☐
III. Once every 6 months ☐
IV. Once a year ☐
V. Other (Please specify) ☐

39. What means does the collector use to reach your premises?

I. On foot ☐
II. Bicycle ☐
III. Handcart ☐
IV. Pick-up truck ☐
V. Small lorry ☐
VI. Others (please specify) ☐

40. What materials are collected and what are their prices?

	"***Mali kwa Mali***"
1. Newspaper	Kshs./Kg
2. Other paper	Kshs./Kg
3. Glass Bottles	Kshs./Bottle
4. Textiles	Kshs./Item
5. Plastic	Kshs./Kg
6. Ferrous metal (*oil tins, sufurias*)	Kshs./Kg
7. Other metal (_____)	Kshs./Kg
8. Other materials (_____)	Kshs./Kg

40. What amount do you sell to the collector each month?

1. Newspaper	Kg/month
2. Other paper	Kg/month
3. Glass Bottles	Bottles/month
4. Textiles	Items/month
5. Plastic	Kg/month
6. Ferrous metal (*oil tins, sufurias*)	Kg/month
7. Other metal (_____)	Kg/month
8. Other materials (_____)	Kg/month

41. If a local residents' association or club were to raise some funds to improve waste collection in your area by collecting and recycling your waste materials, would you be willing to participate?

Yes ☐ No ☐

If **YES** , How would you want to contribute? *(Give details)*_____

_____

_____

_____

_____

42. Do you use kitchen or garden wastes for:? (*Tick as many as applicable*)

I. Poultry keeping ☐
II. Pig Keeping ☐
III. Pets ☐
IV. Mulch ☐
V. Compost ☐

43. Would you be prepared to separate kitchen and garden wastes from other wastes if a separate collection system were available in your area?

Yes ☐ No ☐

Gender Considerations

44. Are there any particular customs or habits which influence the disposal of waste in your household?

Yes ☐ No ☐

If **YES** please give details._____

45. Who makes the decisions about waste collection and disposal in your household?

I. Head of household ☐
II. Wife ☐
III. Other (please specify): ☐

46. Have you ever participated in social activities for improving sanitary conditions?

Yes ☐ No ☐

If **YES** please give details._____

If **NO**, would you be interested in becoming involved in social activities for improving sanitary conditions in your area?

Yes ☐ No ☐

If **YES** please give details._____

47. What do you do to reduce the amount of waste generated from your premises? (*Please choose as many of the following as applicable*)

I. Avoid buying products which produce a lot of waste ☐
II. Cook just enough to avoid any waste ☐
III. Give unwanted clothes to others ☐
IV. Compost kitchen waste ☐
V. Burn combustible waste ☐
VI. Others (please specify)_____

_____
_____
_____
_____

ENVIRONMENTAL HEALTH

48. Have you ever been advised on methods of disposing of domestic waste?

Yes ☐ No ☐

49. Are you aware of the health hazards to you and your household if domestic waste is not properly and promptly disposed of?

Yes ☐ No ☐

If **YES** Do you know some of the health hazards? (*Please name some of the hazards*)

I. Yes ☐
II. No ☐
III. I don't know ☐

50. What more do you think you could do to keep your surroundings clean?

_____
_____
_____
_____

51. Are "Clean-Up" days held in your area?

I. Yes ☐
II. No ☐
III. I don't know ☐

If **YES**, do you participate in these activities?

I. Yes ☐
II. No ☐
III. I don't know ☐

If **NO**, Please give reasons for not participating

_____
_____
_____
_____
_____

WILLINGNESS TO PAY FOR IMPROVED SERVICES

52 If Nairobi City Council were to provide improved services to keep your neighbourhood clean, would you be willing to pay for this improved service?

Yes ☐ No ☐

If **YES**, how much in total would you be willing to pay per month?

Kshs._____

If **NO**, Give reasons why you would not be willing to pay?

_____
_____
_____
_____
_____

11.6 Results of the Public Awareness Survey

INTRODUCTION

1.1 TERMS OF REFERENCE

MultiConsult was asked to conduct a socio-economic and public awareness survey of households in the City of Nairobi. The objectives of the survey was to:

- To study the storage and discharge conditions of solid waste
- To determine the needs of collection services
- To determine the level of community participation and co-operation in respect of collection
- To estimate the willingness to pay for improved collection services

1.2 THE STUDY AREA

The study area covered during the survey is shown in Figure 1.1. The high income areas comprised Muthaiga, Loresho, Karen and Lavington. The middle income areas consisted of Madaraka Estate, Langata, South B, Umoja and Greenfield. The low income areas covered were Riruta Satellite, Muthurwa, Kangemi, Uhuru, Maringo, Dandora, Bahati; while the slum areas were represented by Kibera, Kariobangi, Mukuru (Industrial Area) and Mathare.

METHODOLOGY

504 households covering the existing classes of residential areas were identified within Nairobi City. These were distributed proportionately as below based on the general population distribution pattern comprising; 70% in the low income group and 30% in the high and medium income group. This approximates to the figures provided in the Statistical Abstract of 1989 in Table 1.1

High Income 49(9.7%)

Middle Income 100(19.8%)

Low Income 197(39.1%)

Slum Areas 158(31.3%)

The income classification, which was adopted for the Study is based on the 1989 Statistical Abstract shown in Table 1.1

Table 1.1: Income Group Classification and Distribution in 1984/1989

Income Group	Monthly Income (Kshs.)	% of Households
Very Low	<1000	22.1
Middle Low	1,000 - 2,000	36.8
Upper Low	2,001 - 3,000	15.5
Low Middle	3,001 - 6,000	15.1
Middle	6,001 - 8,000	10.51
Upper Middle	8,001 - 11,000	-
High	>11,000	-

Note that the slum areas fall within the low income group but they were treated distinctly to reflect the status of solid waste management in the unplanned or informal settlements represented by the slums, where often there are arrangements for solid waste disposal.

The survey team consisted of 25 trained enumerators. The focus of the pre-survey training was on effective enumerator-interviewee interactions. The enumerators were distributed to cover the survey area and the survey was conducted for a period of 5 days. The interveiw schedule is given in Appendix I.

During the survey, the need for proper sampling was underscored to minimise errors of sampling and ensure reliable results. Systematic sampling method was therefore employed in which the enumerator identified an appropriate centralised locality, to be used as reference point, within the survey area from where four different sampling route generally in the west, east, north and south directions were identified. Once the route was determined, the enumerator proceeded to conduct interviews in every fifth household until the required number for the route was obtained. The designated number of respondents for every given area was distributed equally on all the four sampling routes.

For residential areas with streets and/or with housing units occurring in the definite pattern as typical in high, medium income settlement as well as in some planned low income settlement; every fifth household on alternate streets or alternate row of houses were interviewed until the required number or respondents was attained.

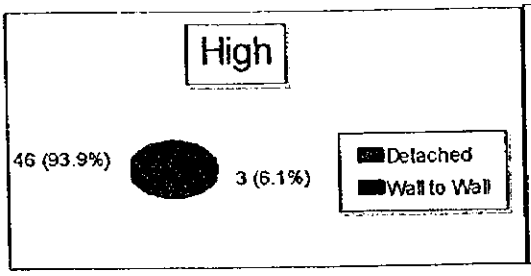
In the slum dwellings, where housing units do not occur in any definite order, the enumerator defined the sampling routes from the reference point to identify the households. Every fifth household was interviewed.

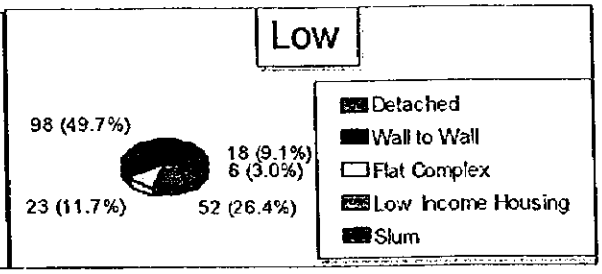
The reference point (which were either a market, shopping centre, school etc.) were later useful for tracing the households in the subsequent Waste Generation and Composition Survey.

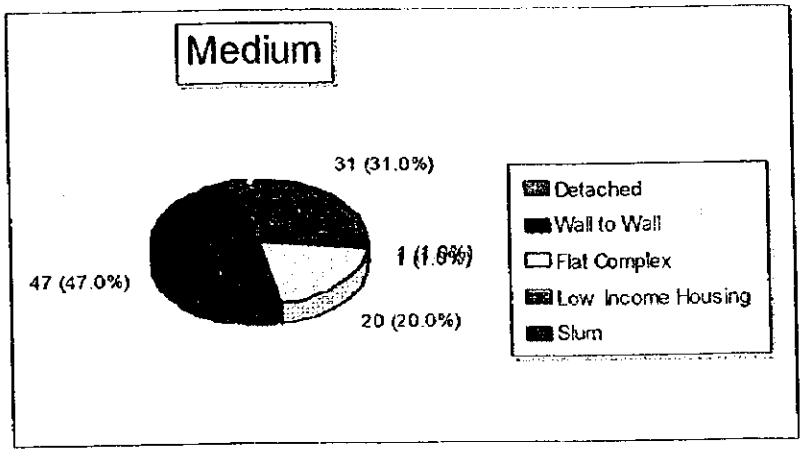
2.0 RESULTS

Table 2.1 Type of locality and number of households surveyed

	Detached	Wall to Wall	Flat Complex	Low Income Housing	Slum Dwellings
High Income	45	3	-	-	-
Medium Income	31	47	20	1	1
Low Income	18	98	23	52	6
Surrounding Area	8	16	13	16	105
Total	103	164	56	69	112







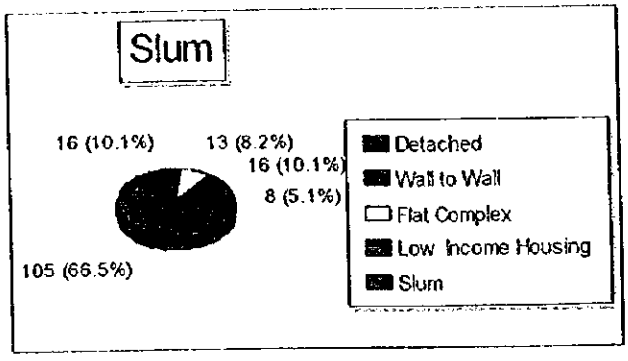
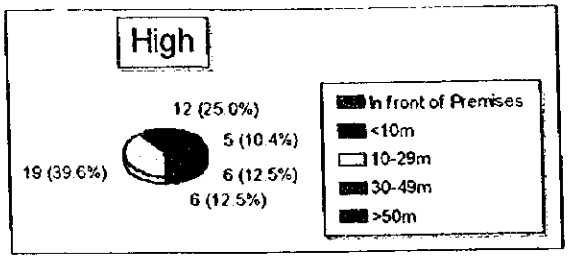
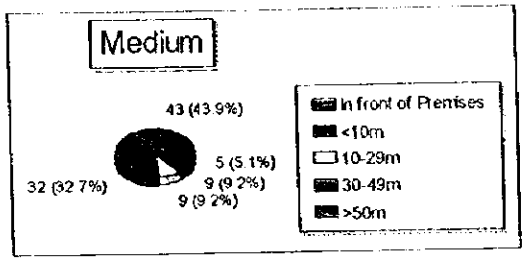
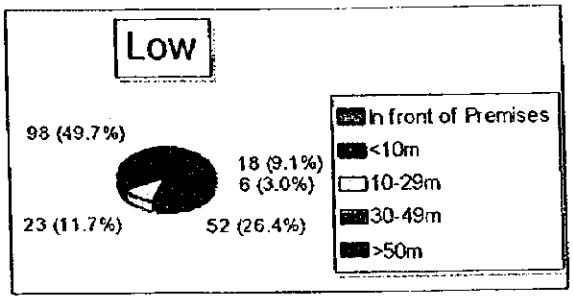


Table 2.2 Distance from the house to road

	In front of premises	<10m	10-29m	30-49m	>50m
High Income Area	5	12	19	6	6
Medium Income	43	32	9	9	5
Low Income	18	98	23	52	6
Surrounding Area	7	31	27	26	68
Total	73	173	78	93	85







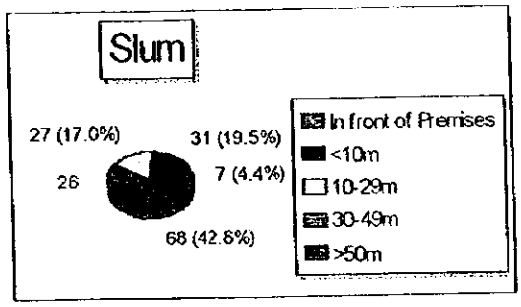
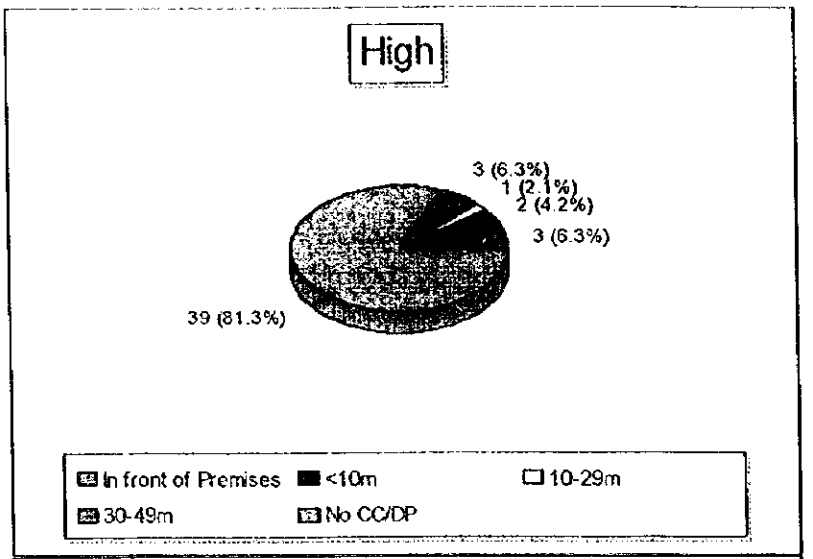
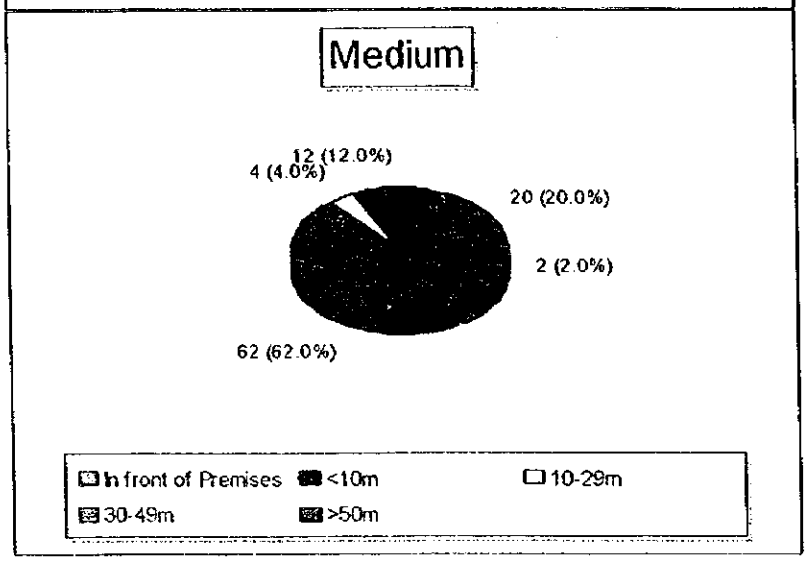


Table 2.3 Distance from communal container or discharge point

	In front of premises	<10m	10-29m	30-49m	>50m	No CC/CP
High Income	3	2	1	3	-	39
Medium Income	20	12	4	62	2	-
Low Income	12	12	32	15	41	53
Surrounding Area	16	16	22	19	24	61
Total	51	42	59	99	67	153


High
3 (6.3%)
1 (2.1%)
2 (4.2%)
3 (6.3%)
39 (81.3%)
In front of Premises
<10m
10-29m
30-49m
No CC/DP


Medium
12 (12.0%)
4 (4.0%)
20 (20.0%)
2 (2.0%)
62 (62.0%)
In front of Premises
<10m
10-29m
30-49m
>50m

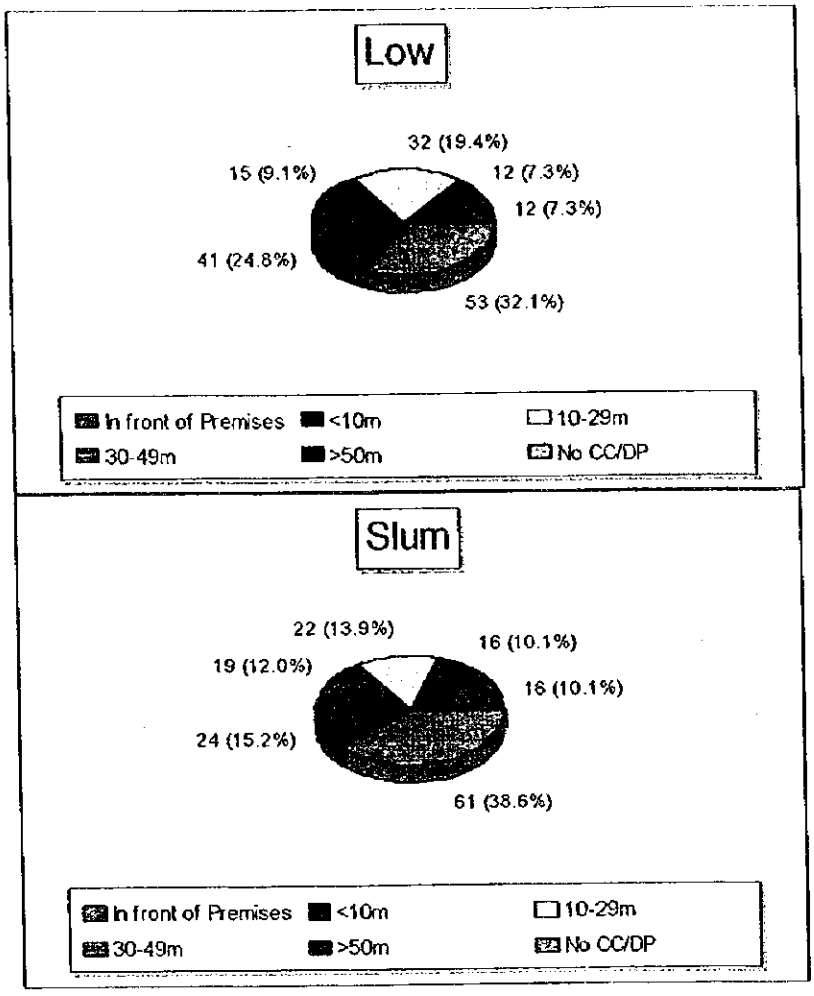
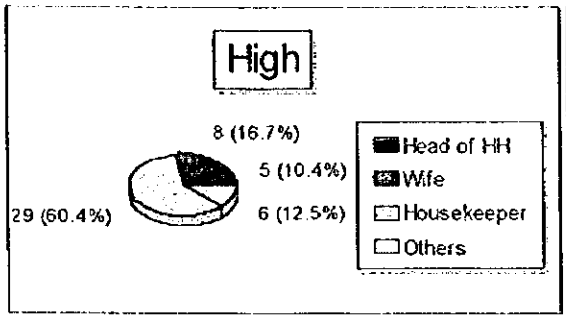
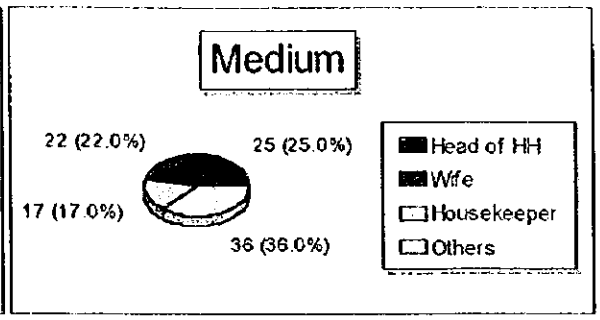
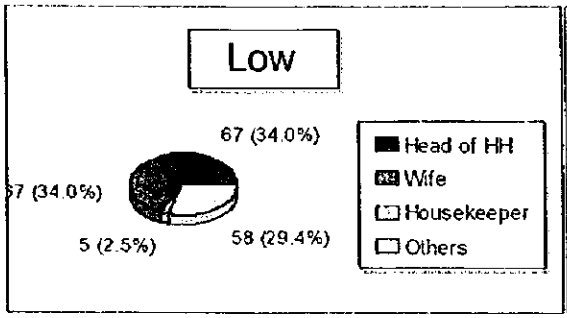


Table 2.4 Type of respondent

	Head of household	Wife	Other house	Housekeeper	Others
High Income	5	8	4	29	2
Medium Income	25	22	35	17	1
Low Income	67	67	42	5	16
Surrounding Area	7	31	27	26	68
Total	172	159	99	53	20







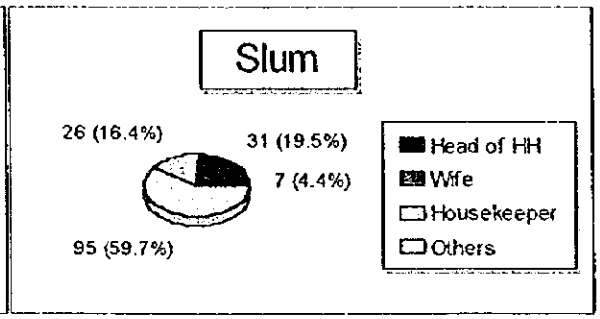


Table 2.5 Average Household Size

High Income	5.5
Medium Income	6.3
Low Income	4.8
Surrounding Area	2.5

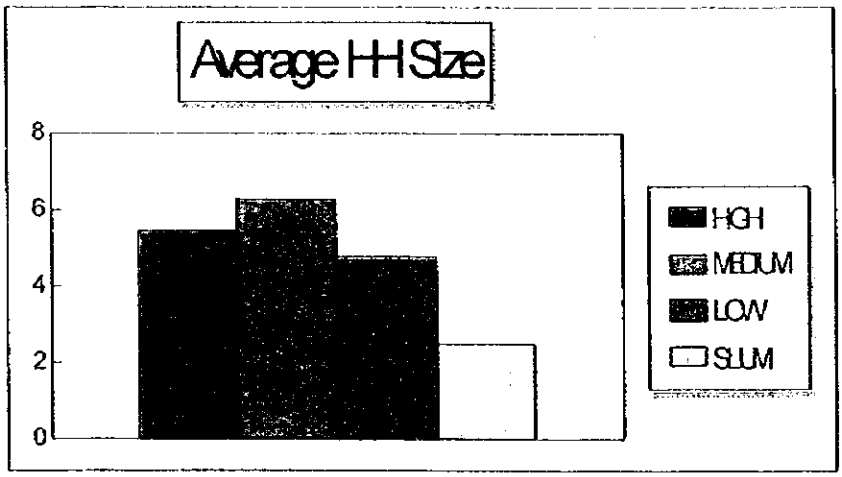
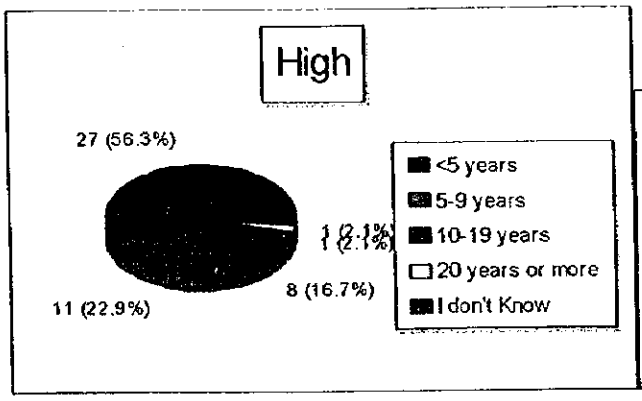
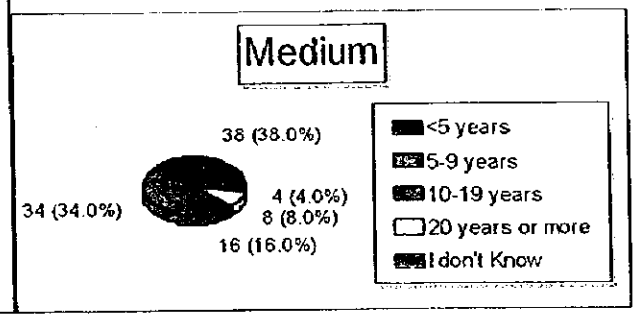
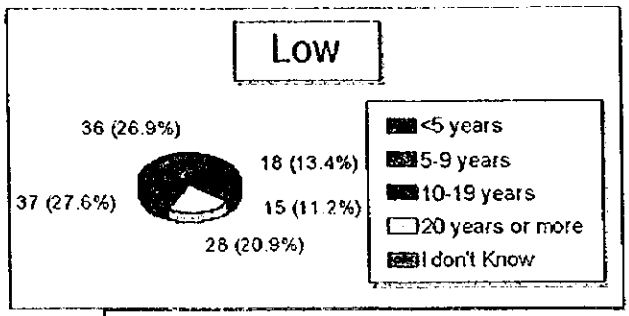


Table 2.6 Length of time lived in house

	<5 years	5-9 years	10-19 years	20 years or more	I don't know
High Income	27	11	8	1	1
Medium Income	38	34	16	8	4
Low Income	18	36	37	28	15
Surrounding Area	74	44	30	9	1
Total	157	125	91	46	21







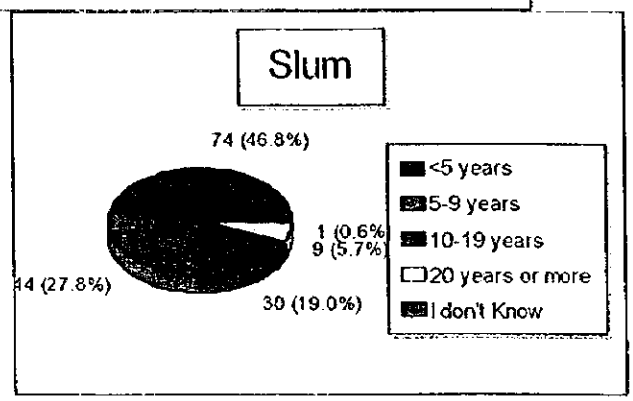
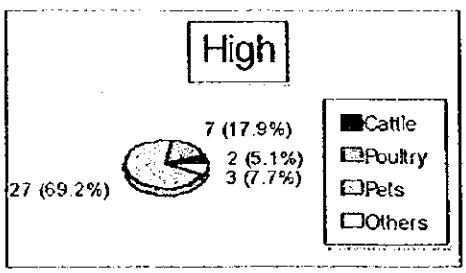
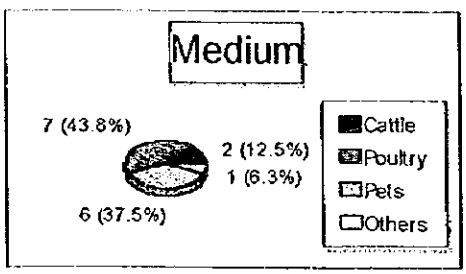
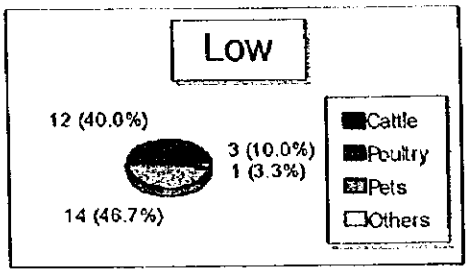


Table 2.7 Domestic Animals

	Cattle	Poultry	Pets	Others
High Income				
Medium Income	2	7	6	1
Low Income	3	12	14	1
Surrounding Area	1	9	33	2
Total				







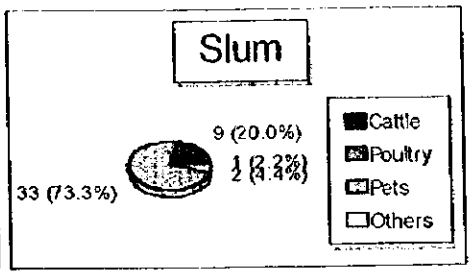
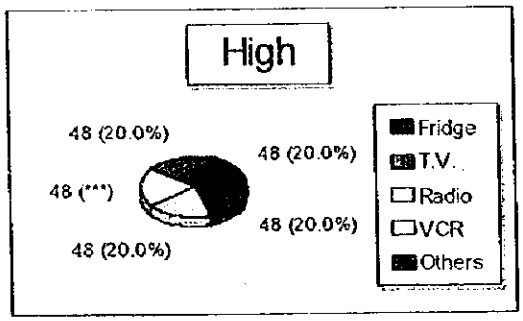
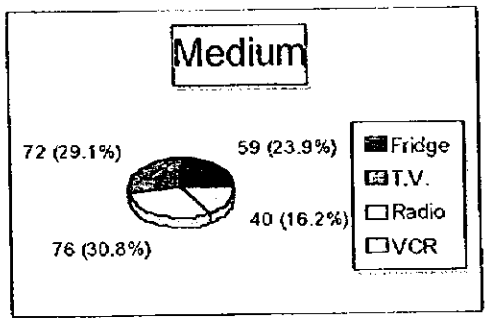
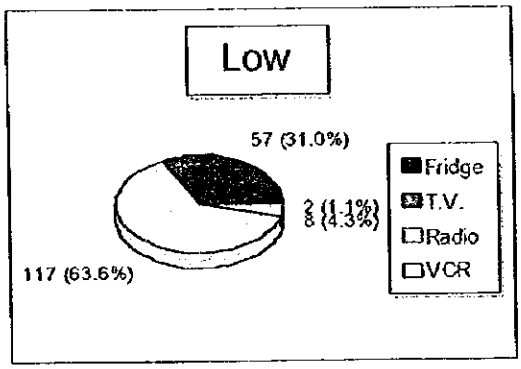


Table 2.8 Consumer durables in the household

	Fridge	T.V.	Radio	VCR	Others
High Income	48	48	48	48	48
Medium Income	59	72	76	40	-
Low Income	2	57	117	8	-
Surrounding Area	5	73	49	-	2
Total	114	250	290	96	50







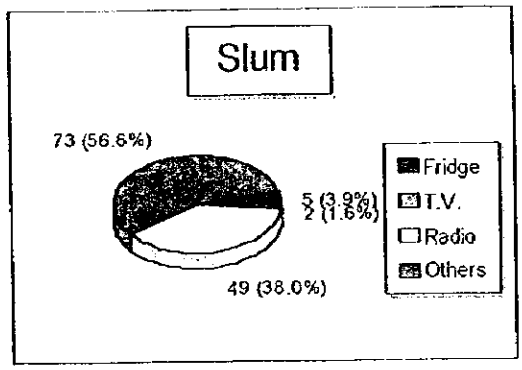
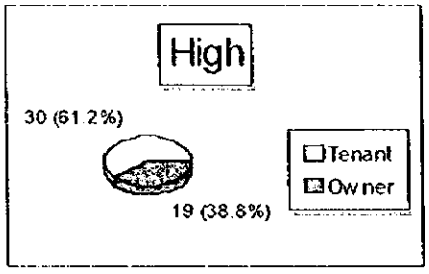
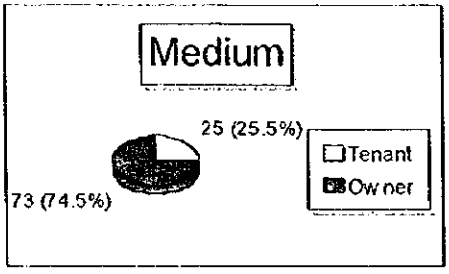
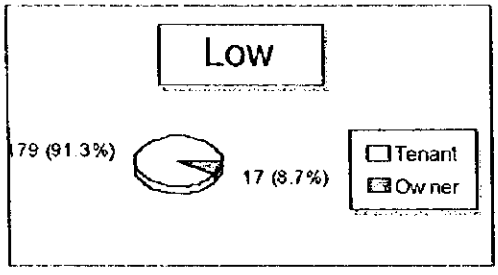


Table 2.9 Owner/Tenant

	Tenant	Owner
High Income	30	19
Medium Income	25	73
Low Income	179	17
Surrounding Area	155	3
Total	389	112







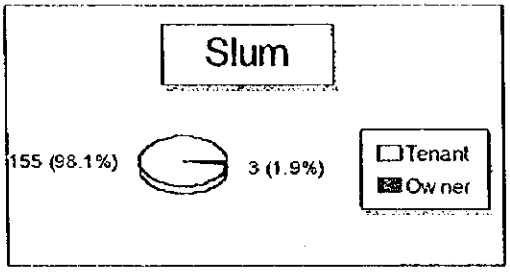
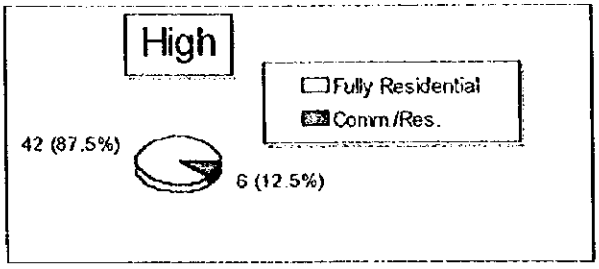
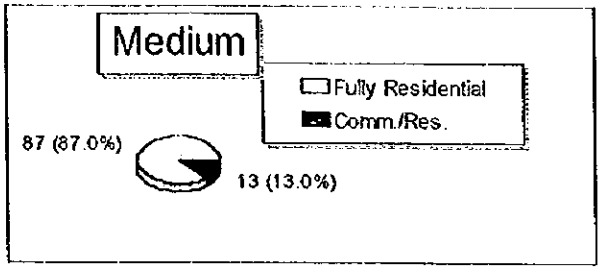
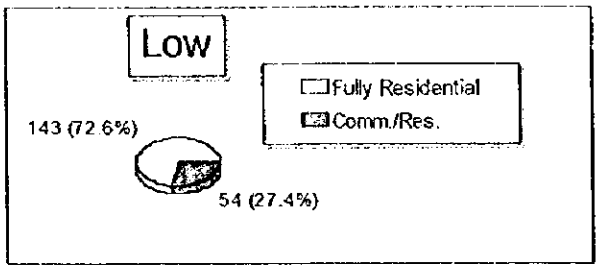


Table 2.10 Building Utility

	Fully Residential	Commercial/Residential
High Income	42	6
Medium Income	87	13
Low Income	143	54
Surrounding Area	118	40
Total	390	113







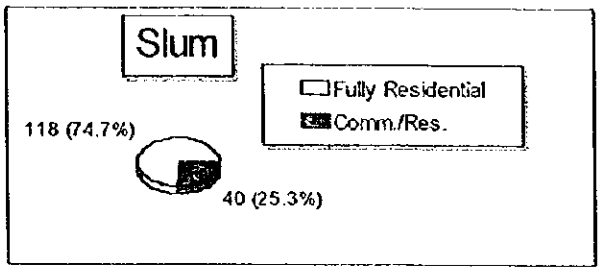
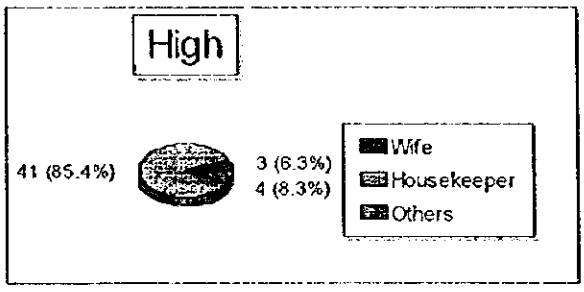
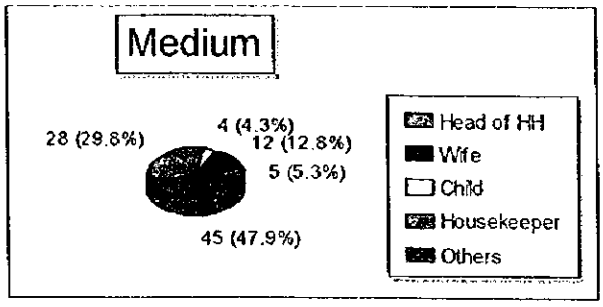
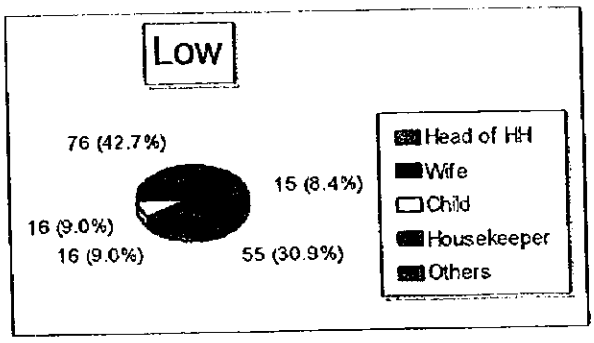


Table 2.11 Who Removes from the House

	Head of Household	Wife	Child	Housekeeper	Others
High Income	-	3	-	41	4
Medium Income	5	12	4	28	45
Low Income	15	76	16	16	55
Surrounding Area	8	73	39	24	14
Total	28	164	59	109	118







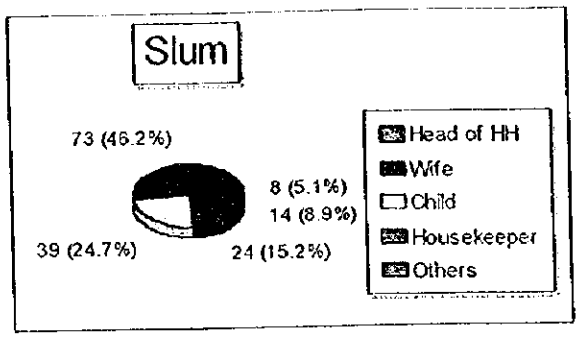
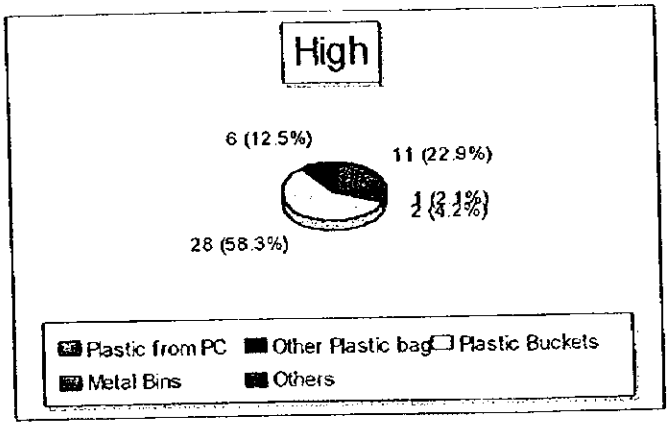


Table 2.12 Types of Containers Used to Hold Waste in the House

	Plastic Bag provided by collection company	other Plastic bags	Plastic Buckets/	Metal	Others
High Income	11	6	28	2	1
Medium Income	51	15	29	4	1
Low Income	6	33	101	16	29
Surrounding Area	-	48	63	24	23
Total	68	102	221	46	54



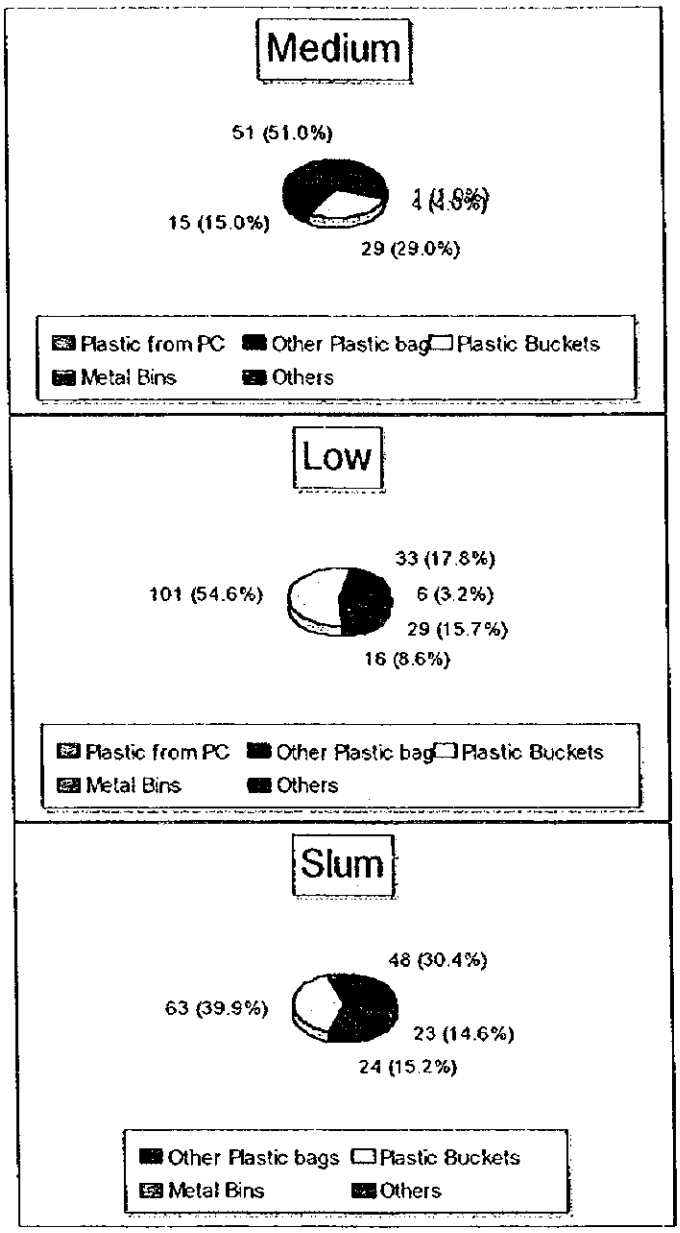
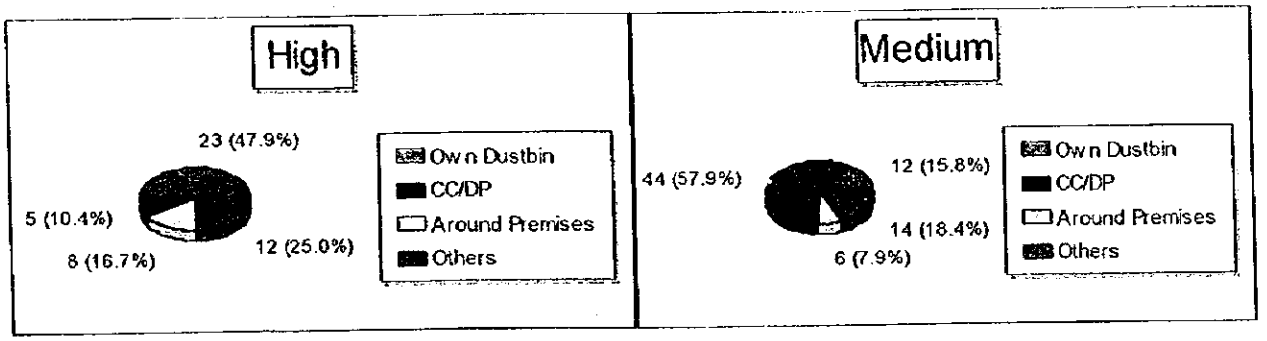

Medium
51 (51.0%)
1 (1.0%)
4 (4.0%)
15 (15.0%)
29 (29.0%)
Plastic from PC
Other Plastic bag
Plastic Buckets
Metal Bins
Others
Low
33 (17.8%)
101 (54.6%)
6 (3.2%)
29 (15.7%)
16 (8.6%)
Plastic from PC
Other Plastic bag
Plastic Buckets
Metal Bins
Others
Slum
48 (30.4%)
63 (39.9%)
23 (14.6%)
24 (15.2%)
Other Plastic bags
Plastic Buckets
Metal Bins
Others

Table 2.13 Place of Disposal of Waste from the House

	Own Dustbin	CC/DP*	Around Premises	Others
High Income	23	5	8	12
Medium Income	12	44	6	14**
Low Income	26	109	46	16
Surrounding Area	10	89	23	36
Total	71	247	82	78

* communal container/discharge point
**refuse chute



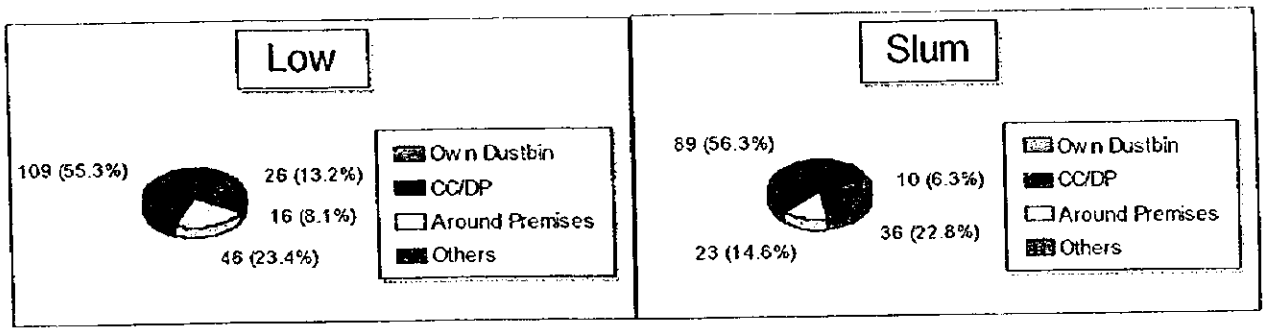
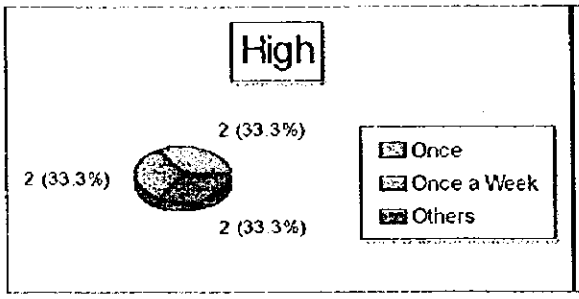


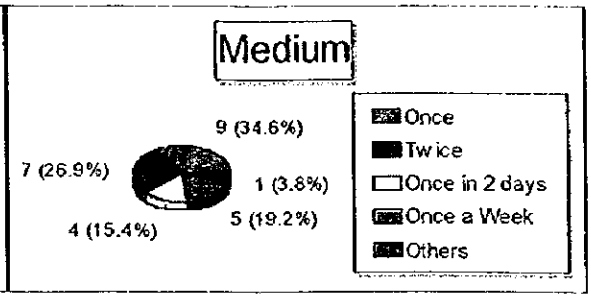
Table 2.14 Discharge Waste at Fixed Time

	Yes	No
High Income	3	3
Medium Income	11	89
Low Income	11	89
Surrounding Area	68	91
Total	93	272

Table 2.15 Frequency of Disposal to the Discharge Point

	Once	Twice	Once in 2 Days	Once a Week	Others
High Income	2	-	-	2	2
Medium Income	9	7	4	5	1
Low Income	33	16	5	20	19
Surrounding Area	82	33	21	11	10
Total	126	56	30	38	32





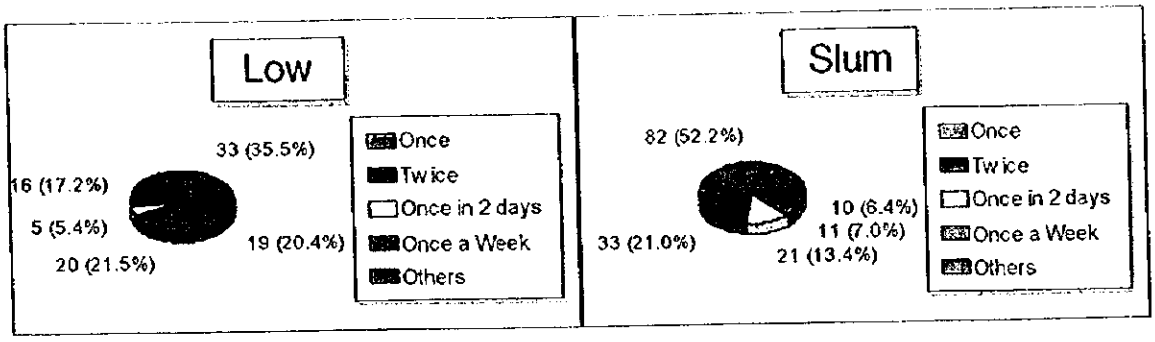
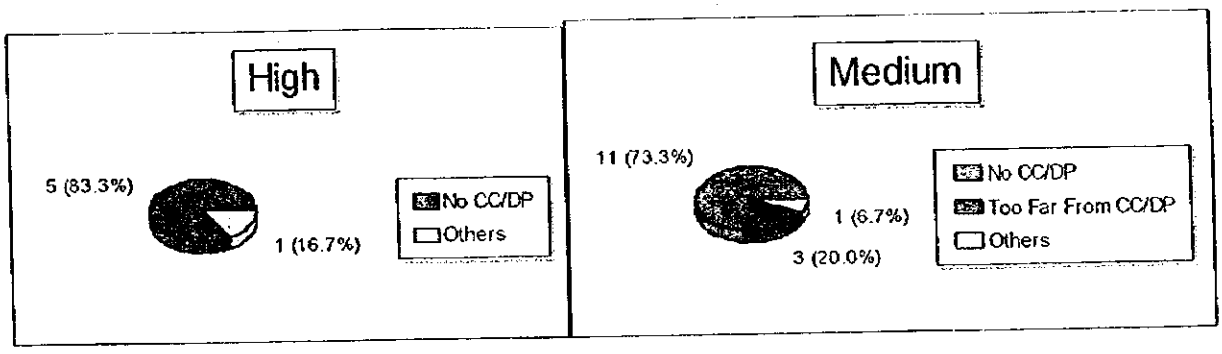


Table 2.16 Reasons for Disposal Around Premises

	No CC/DP	Too Far from CC/DP	Other
High Income	5	-	1
Medium Income	11	3	1
Low Income	40	3	4
Surrounding Area	11	2	10
Total	67	8	16



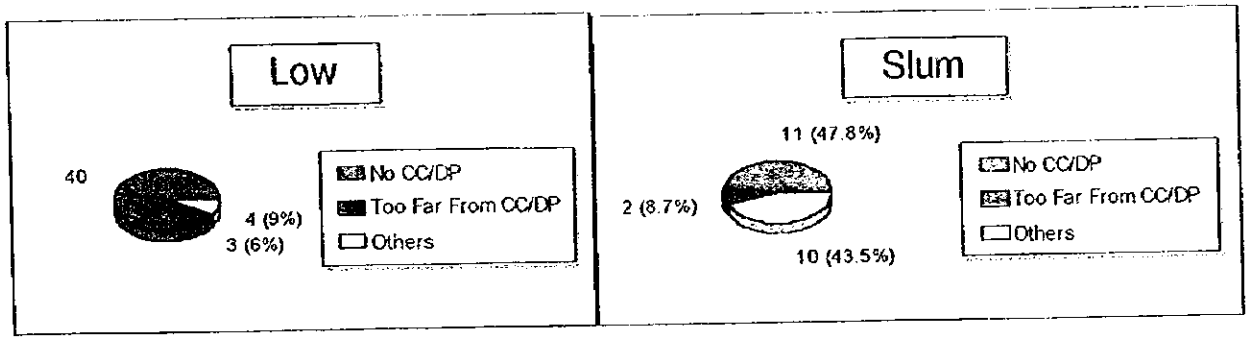
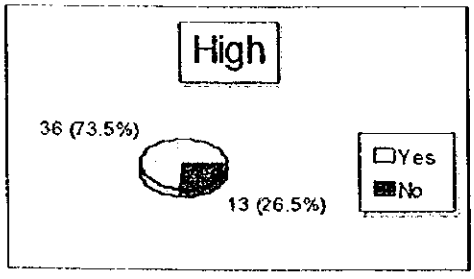
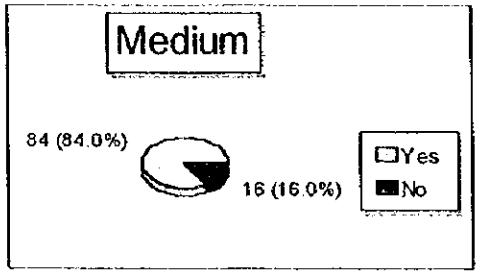
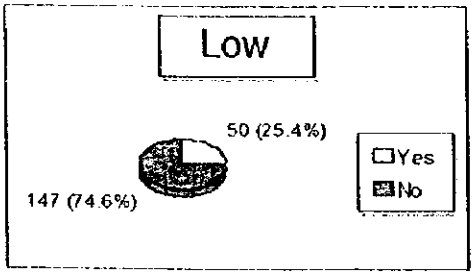


Table 2.17 Existence of Collection Service

	Yes	No
High Income	36	13
Medium Income	84	16
Low Income	50	147
Surrounding Area	3	110
Total	173	286







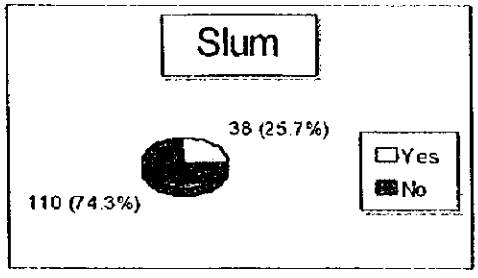
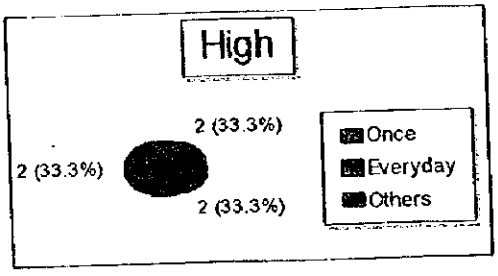
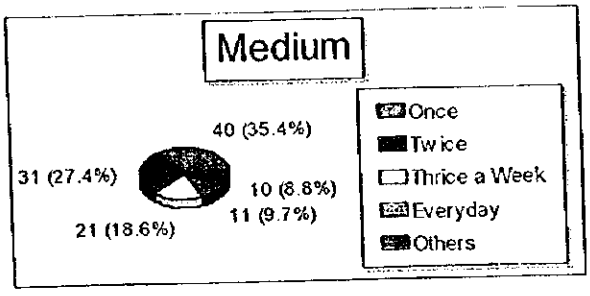


Table 2.18 Frequency of Waste Collection per week

	Once	Twice	Thrice	Everyday	Others
High Income	2	-	-	2	2
Medium Income	40	31	21	11	10
Low Income	8	8	2	10	-
Surrounding	-	-	-	-	-
Total	50	39	23	23	12





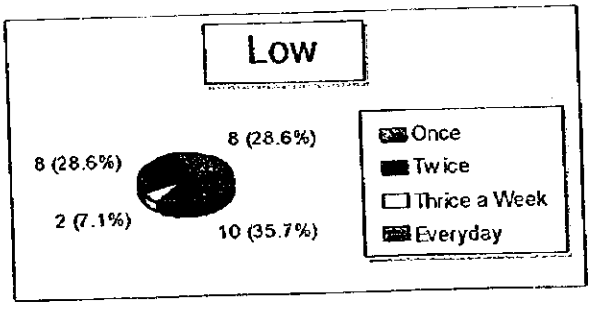
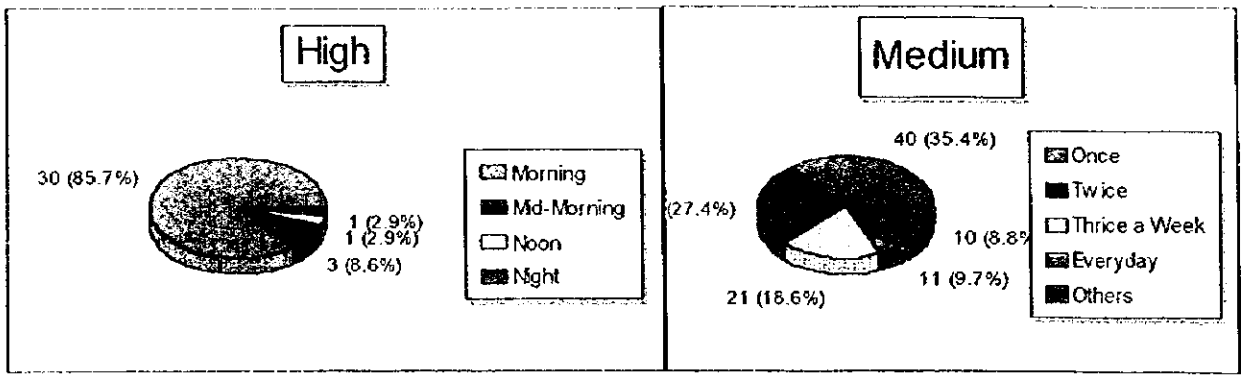


Table 2.19 Collection Fixed Time?

	Yes	No
High Income	24	10
Medium Income	61	21
Low Income	10	21
Surrounding Area	-	-
Total	105	52

Table 2.20 Time of Collection by Collection Service

	Morning	Mid-Morning	Noon	Evening	Night
High Income	30	3	1	-	1
Medium Income	11	24	7	8	8
Low Income	2	2	2	-	-
Surrounding Area	-	-	-	-	-
Total	43	25	10	8	9



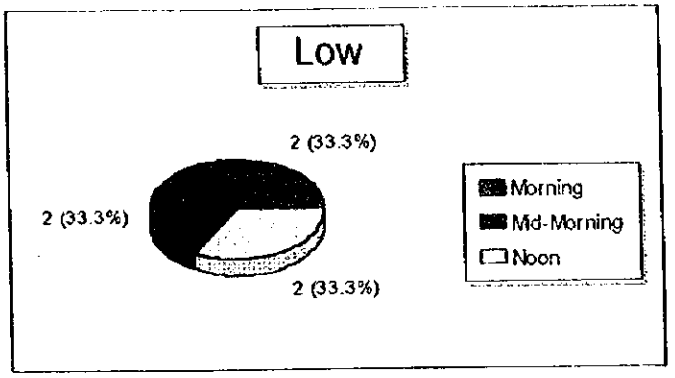
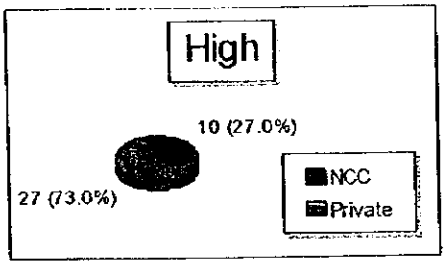
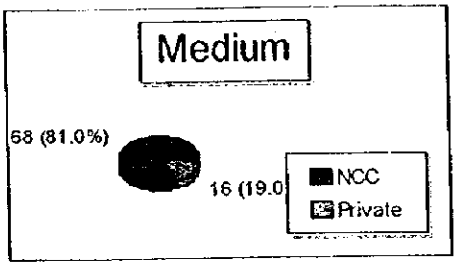


Table 2.21.Collection Operator

	NCC	Private Company
High Income	10	27
Medium Income	88	16
Low Income	14	8
Surrounding Area	-	-
Total	92	51





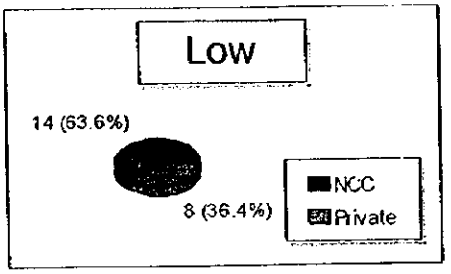
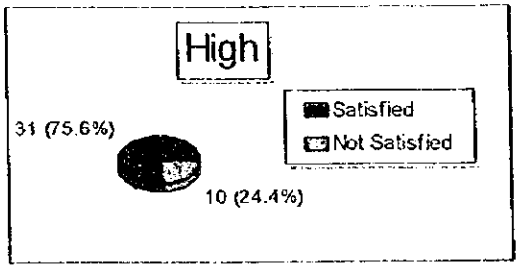


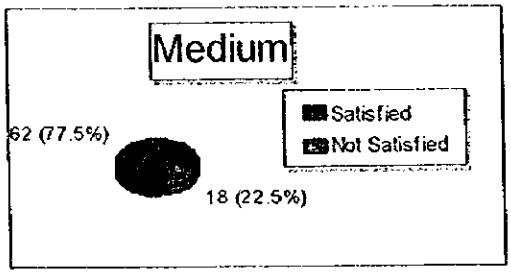
Table 2.22 Average Cost of Collection Service

	Kshs.
High Income	531
Medium Income	215
Low Income	59
Surrounding Area	-

Table 2.23 Satisfaction with Collection Service

	Satisfied	Not Satisfied
High Income	31	10
Medium Income	62	18
Low Income	15	24
Surrounding Area	-	-
Total	108	52





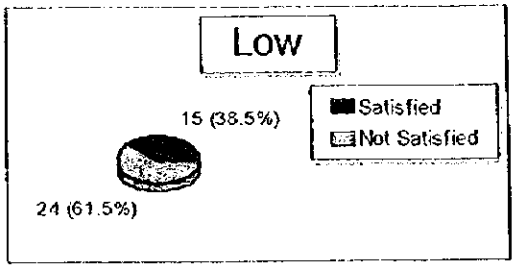


Table 2.24 Reasons for Disatisfaction

	Low collection frequency	Irregular collection	Collection too late/early	Behaviour of worker is bad	High fees
High Income	2	7	-	2	-
Medium Income	21	14	8	11	8
Low Income	7	2	-	-	1
Surrounding Area	-	-	-	-	-
Total	30	23	8	13	9

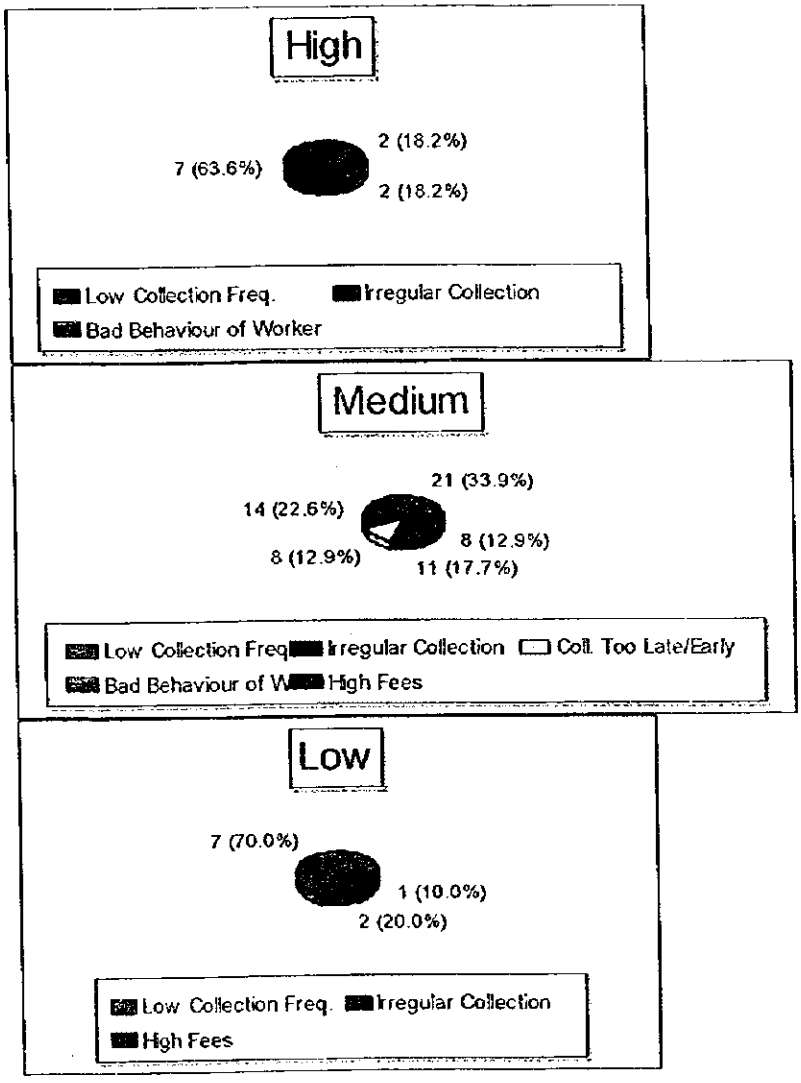
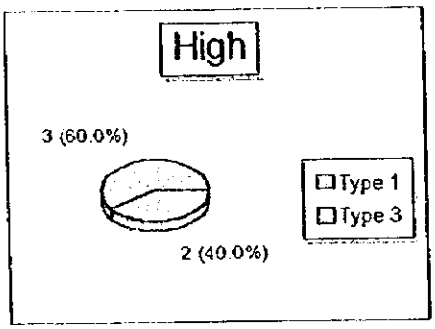
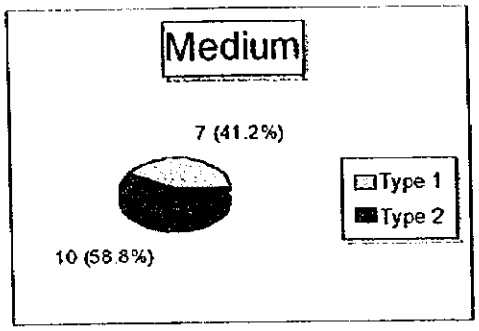


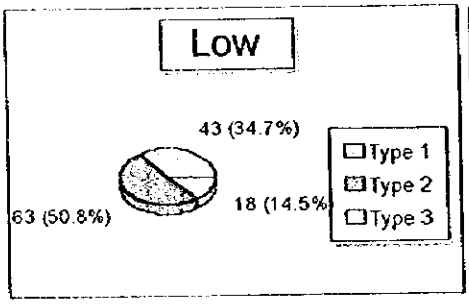
Table 2.25 Type of Collection Service Desired

	1	2	3
High Income	3	-	2
Medium Income	7	10	-
Low Income	43	63	18
Surrounding Area	11	30	27
Total	64	103	47

1- Waste to be collected from your house and taken to a communal discharge point
2-Waste to be collected from a communal discharge point and your neighbourhood kept clean
3-Both of the above







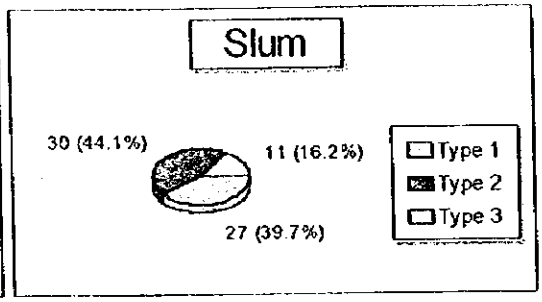


Table 2.26 Willingness to Pay for a Collection Service

	Yes	No
High Income	4	2
Medium Income	15	1
Low Income	121	72
Surrounding Area	102	57
Total	242	132

Table 2.27 Mean Willingness to Pay for Improved Collection Service

	Kshs.
High Income	221
Medium Income	423
Low Income	72
Surrounding Area	60

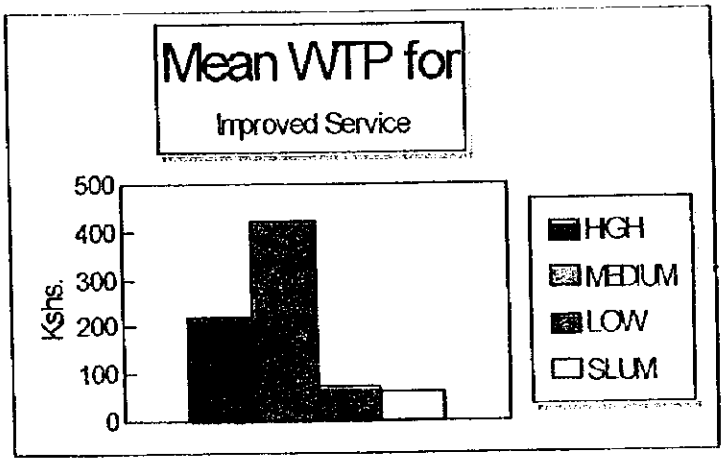
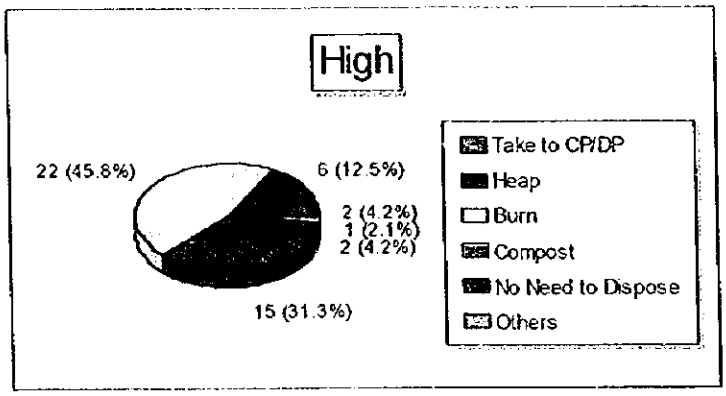
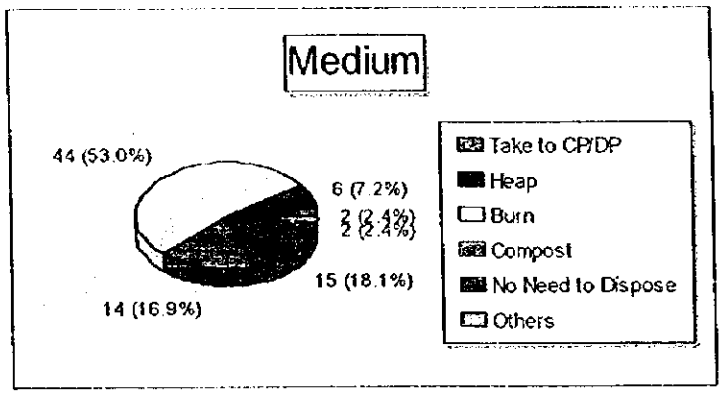
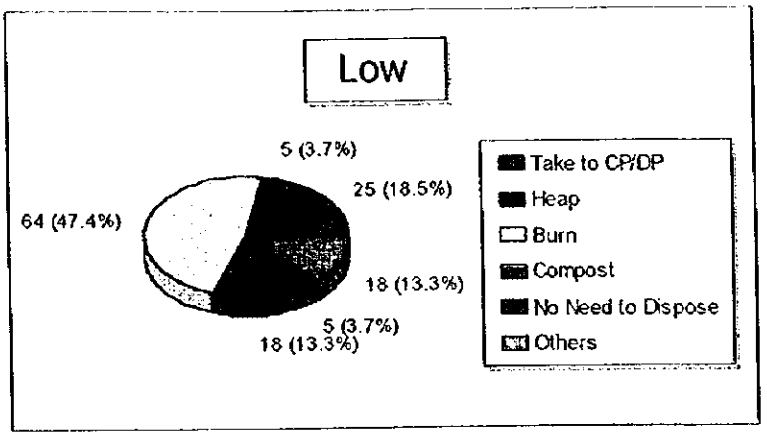


Table 2.28 Disposal of Garden Waste

	Take to Collection	Heap	Burn	Compost	No Need to dispose	Others
High Income	2	6	22	15	2	1
Medium Income	2	6	44	14	15	2
Low Income	25	5	64	18	5	18
Surrounding Area	3	3	3	2	11	-
Total	32	20	133	49	33	21







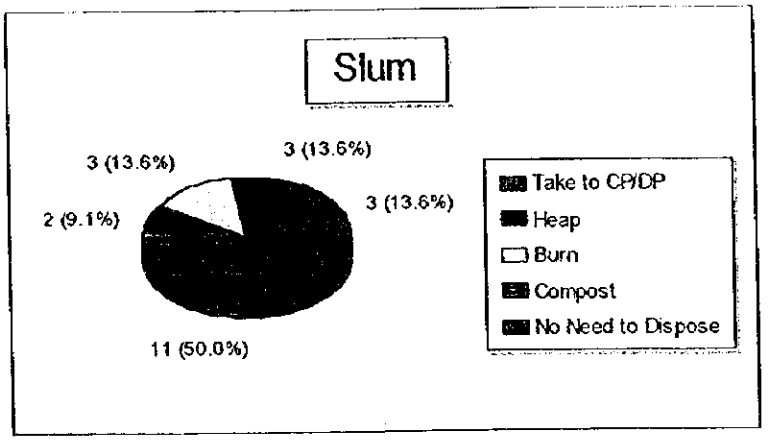
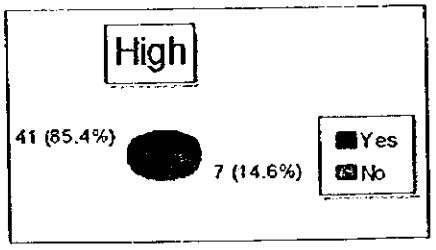
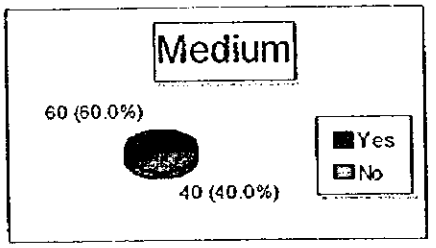
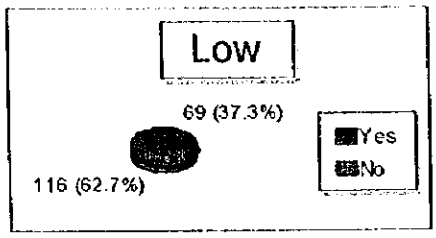


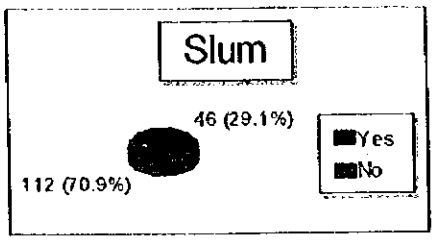
Table 2.28 Sweeping of Road Shoulder/Public Area

	Yes	No
High Income	41	7
Medium Income	60	40
Low Income	69	116
Surrounding Area	46	112
Total	216	275





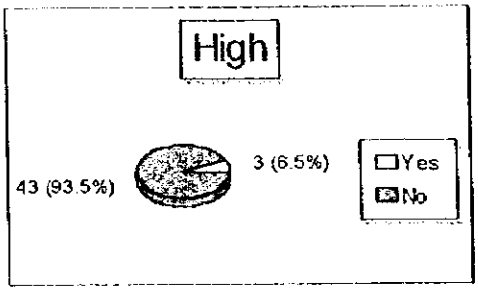


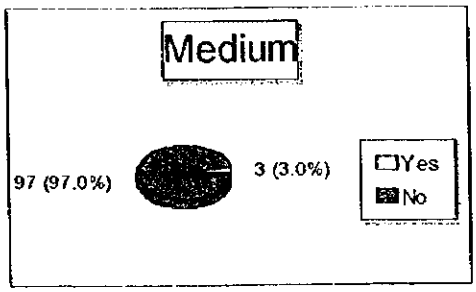


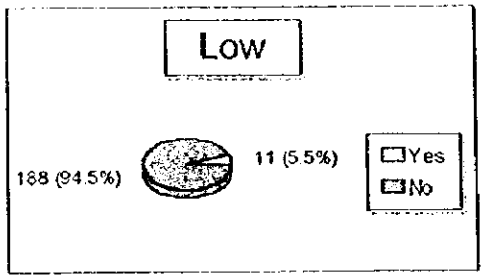
GENDER CONSIDERATIONS AND DECISION-MAKING

Table 2.29 Customs/Habits Influencing the Disposal Of Waste

	Yes	No
High Income	3	44
Medium Income	3	97
Low Income	11	188
Surrounding Area	13	136
Total	30	465







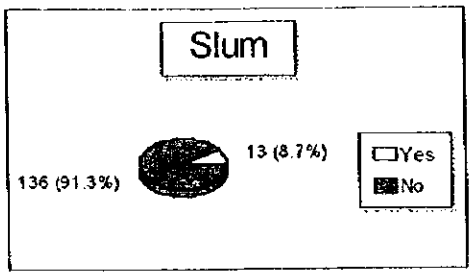
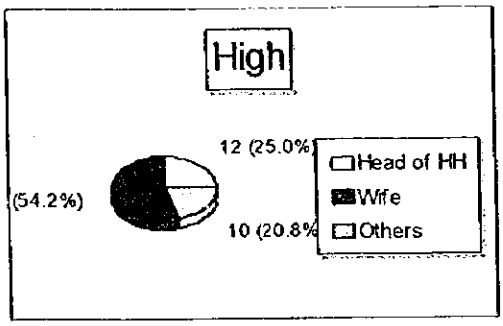
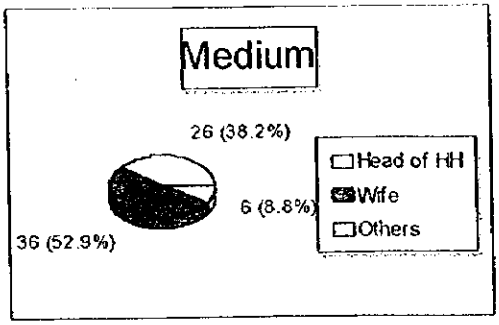
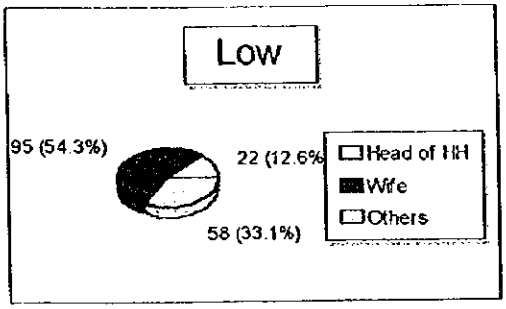


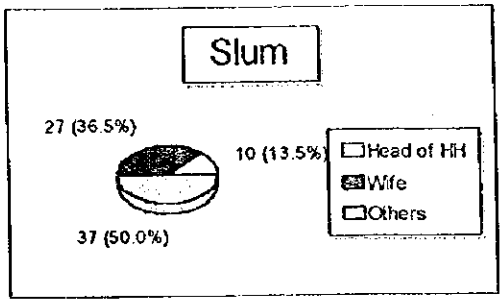
Table 2.30 Decision Making about Household Waste Collection and Disposal

	Head of Household	Wife	Others
High Income	12	26	10
Medium Income	26	36	6
Low Income	22	95	58
Surrounding Area	10	27	37
Total	70	184	111





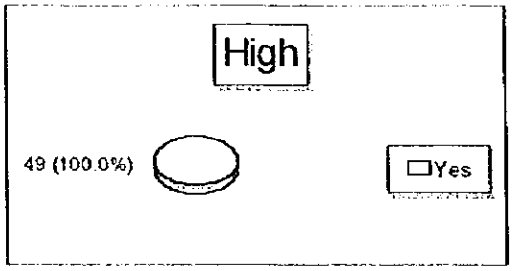


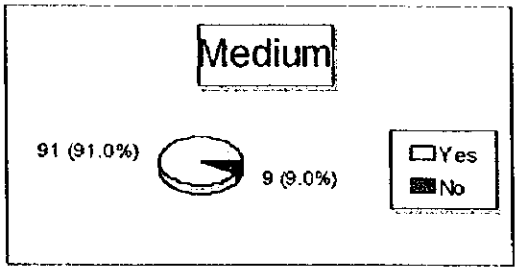


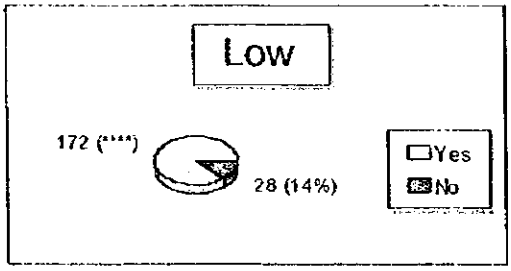
WASTE RECYCLING ACTIVITIES

Table 2.31 Awareness of Recycling

	Yes	No
High Income	48	-
Medium Income	91	9
Low Income	172	28
Surrounding Area	141	17
Total	453	54







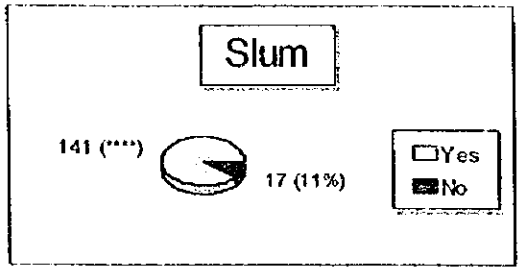
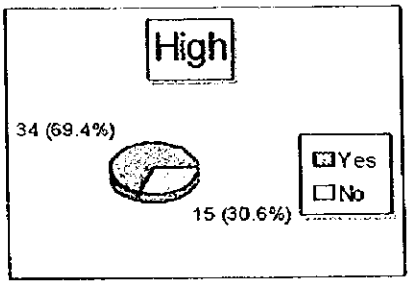
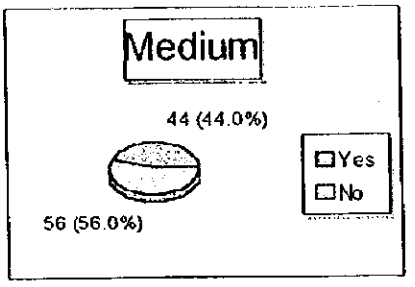
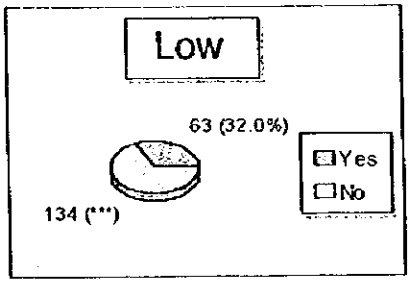


Table 2.32 Willingness to Separate Kitchen Waste from Other Waste

	Yes	No
High Income	33	15
Medium Income	44	56
Low Income	63	134
Surrounding Area	76	83
Total	217	288







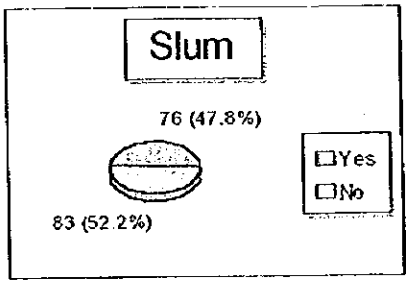
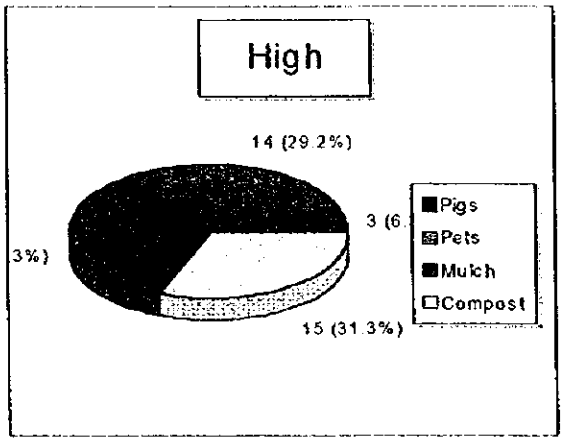
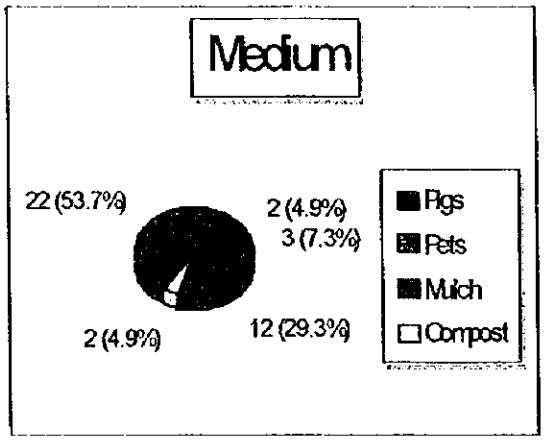
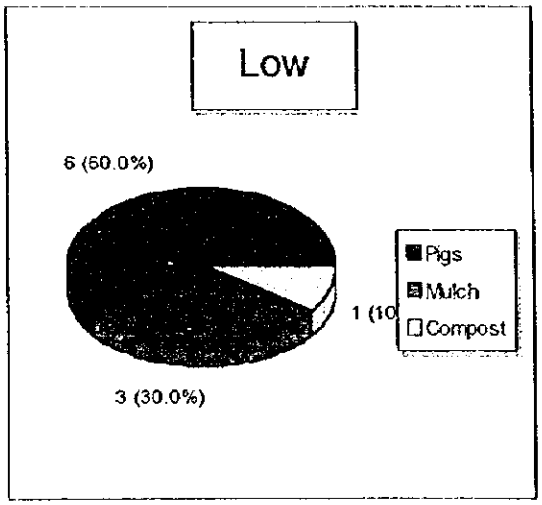


Table 2.33 Use of Kitchen Waste

	Poultry	Pigs	Pets	Mulch	Compost
High Income	-	3	14	16	15
Medium Income	3	2	22	2	12
Low Income	6	-	3	1	-
Surrounding Area	6	-	2	2	2
Total	15	5	41	21	29







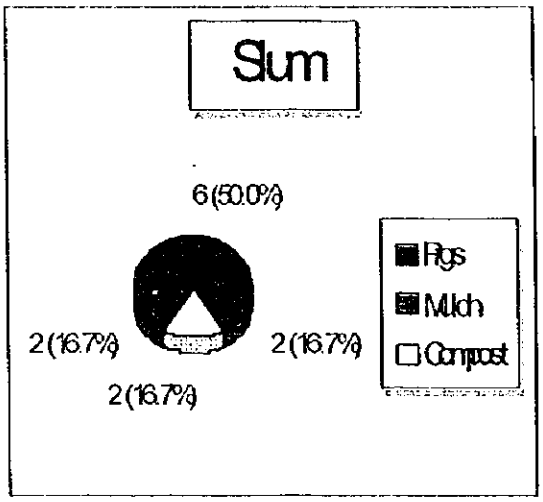
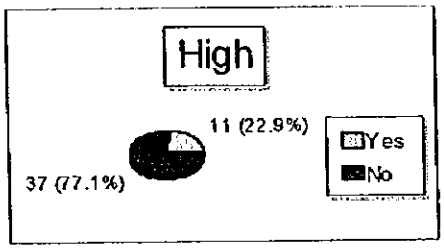
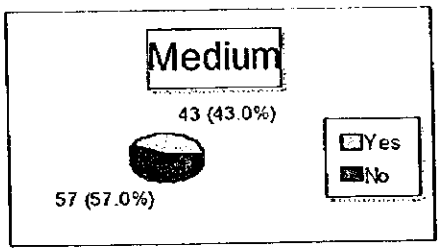
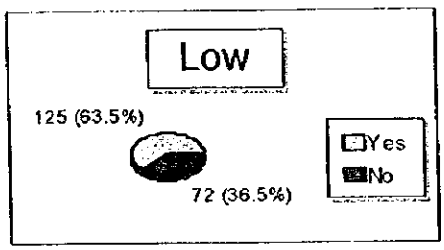


Table 2.34 Willingness to Participate in Residents' Recycling Association

	Yes	No
High Income	31	18
Medium Income	77	23
Low Income	147	50
Surrounding Area	-	-
Total	255	91







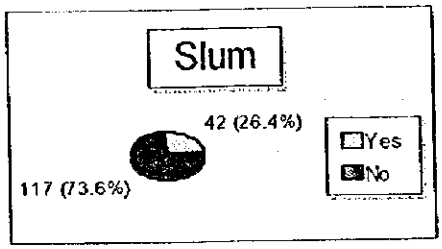
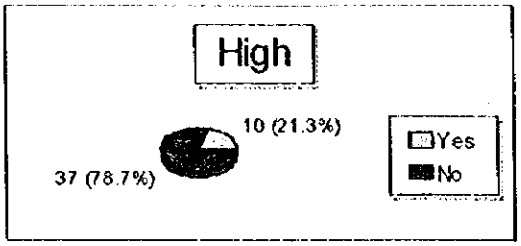
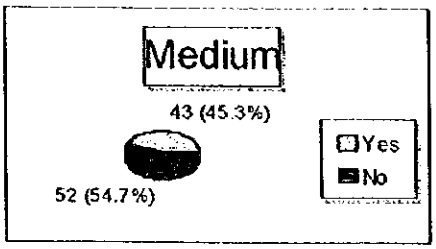
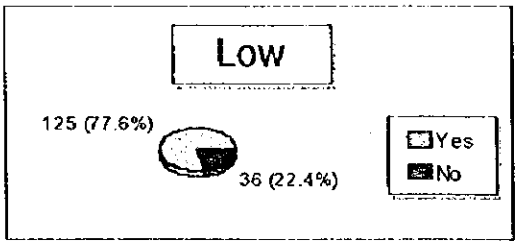


Table 2.35 Do Collectors Come to your Premises?

	Yes	No
High Income	10	37
Medium Income	43	52
Low Income	125	36
Surrounding Area	42	117
Total	220	242







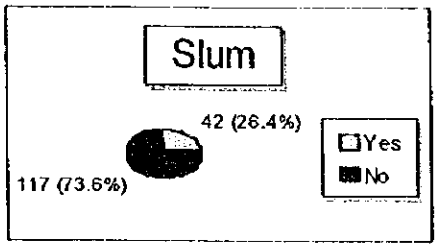
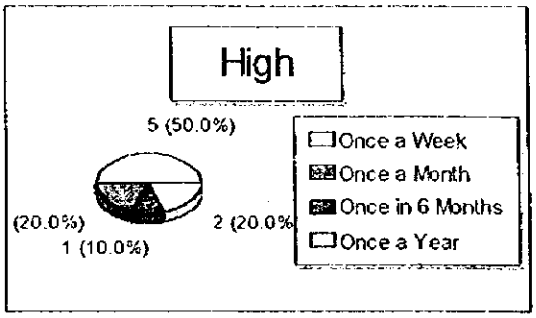
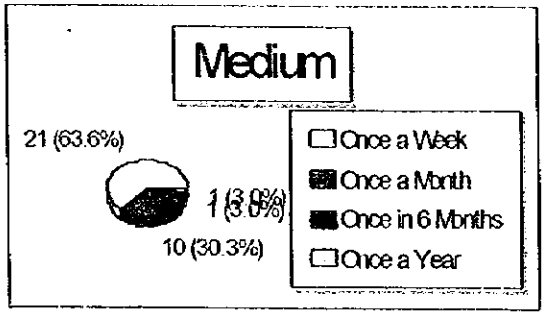
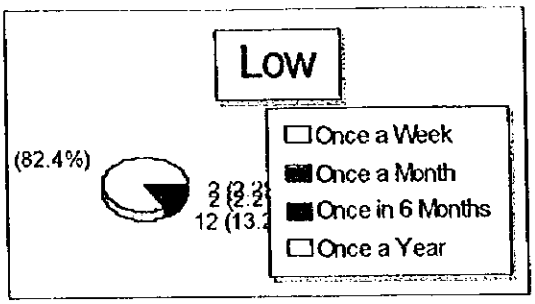


Table 2.36 Recycling Waste Collection Frequency

	Once a Week	Once a Month	Once in 6 Months	Once a Year
High Income	5	2	1	2
Medium Income	21	10	1	1
Low Income	75	12	2	2
Surrounding Area	68	3	-	3
Total	169	27	4	8







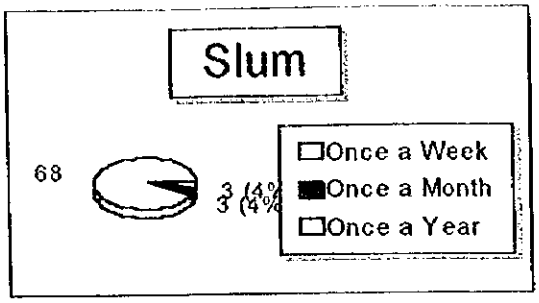
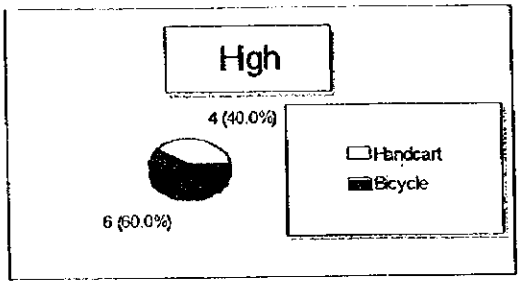
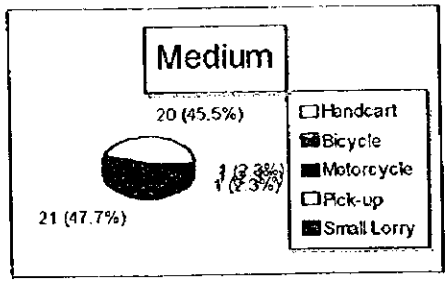
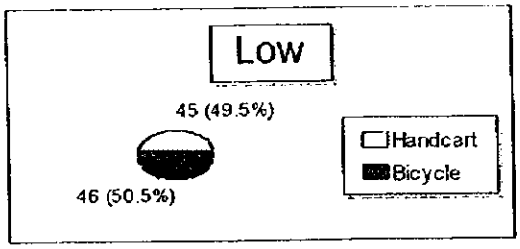


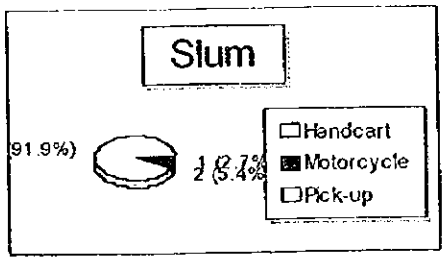
Table 2.37 Mode of Transportation Used by Collector

	Handcart	Bicycle	Motorcycle	Pick-up	Small Lorry
High Income	4	6	-	-	-
Medium Income	20	21	1	1	1
Low Income	45	46	-	-	-
Surrounding Area	34	-	2	1	-
Total	101	73	3	2	1





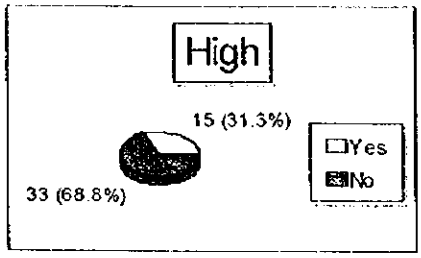


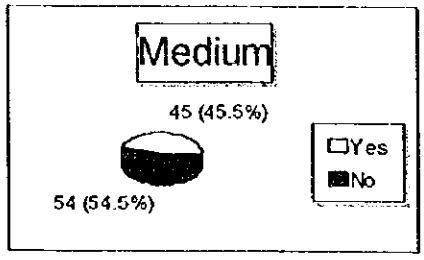


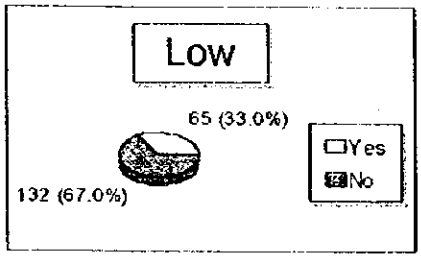
COMMUNITY PARTICIPATION AND ENVIRONMENTAL HEALTH AWARENESS

Table 2.38 Advice on Safe Domestic Waste Disposal

	Yes	No
High Income	15	33
Medium Income	45	54
Low Income	65	132
Surrounding Area	107	49
Total	232	268







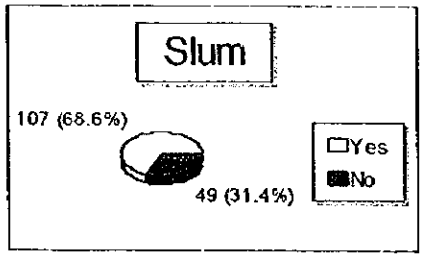
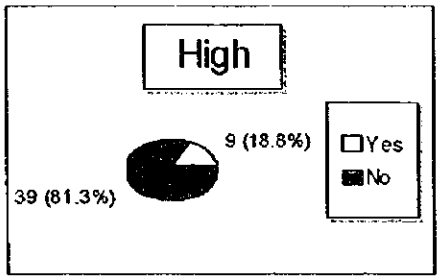
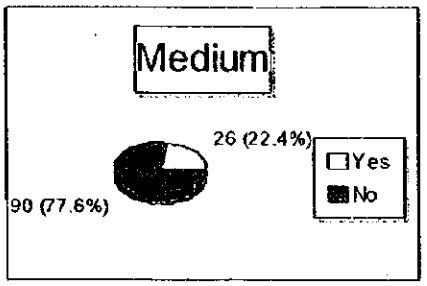
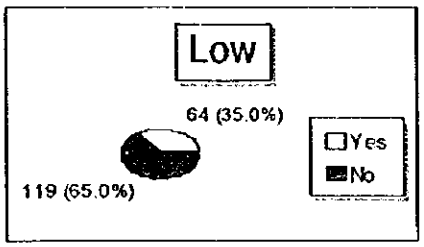


Table 2.39 Participation in Social Activities for Improving Sanitary Conditions

	Yes	No
High Income	9	39
Medium Income	26	90
Low Income	64	119
Surrounding Area	102	55
Total	201	504







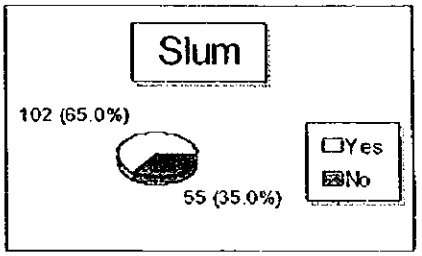
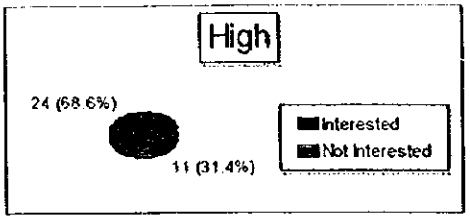
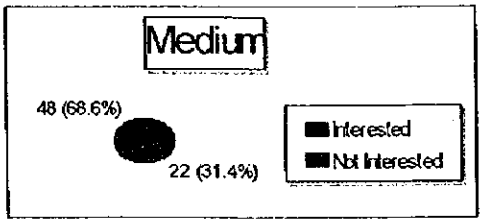
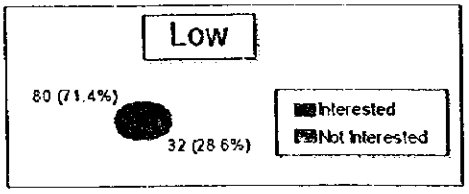


Table 2.40 Interest to Participate in Social Activities for Improving Sanitary Conditions

	Interested	Not Interested
High Income	24	11
Medium Income	48	22
Low Income	80	32
Surrounding Area	26	48
Total	178	113







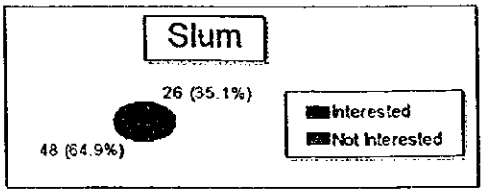
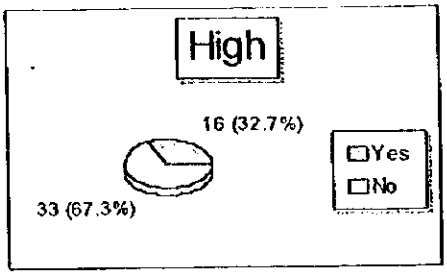
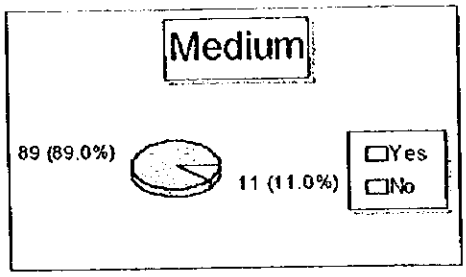
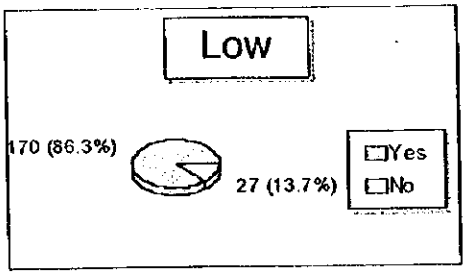


Table 2.41 Environmental Health Awareness of Hazards of Improper Waste Disposal

	Yes	No
High Income	15	33
Medium Income	89	11
Low Income	170	27
Surrounding Area	107	49
Total	382	120







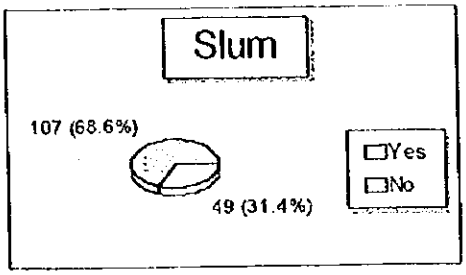
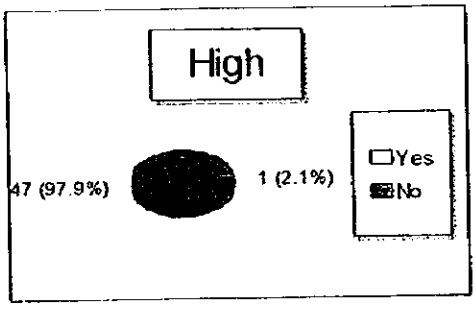
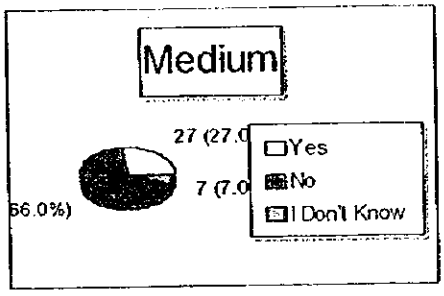
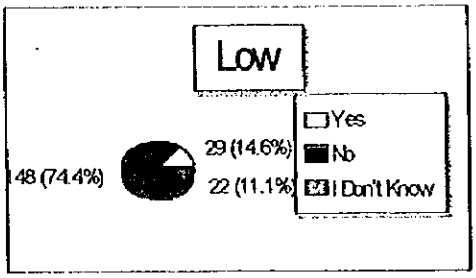


Table 2.42 Existence of *Clean Days*

	Yes	No	I Don't Know
High Income	1	47	-
Medium Income	27	66	7
Low Income	29	148	22
Surrounding Area	17	104	37
Total	74	365	66







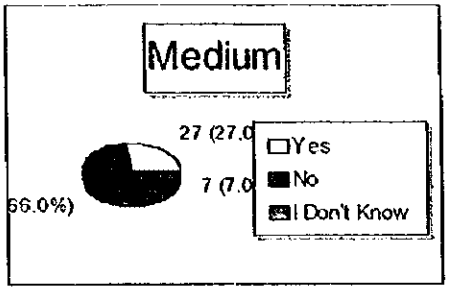
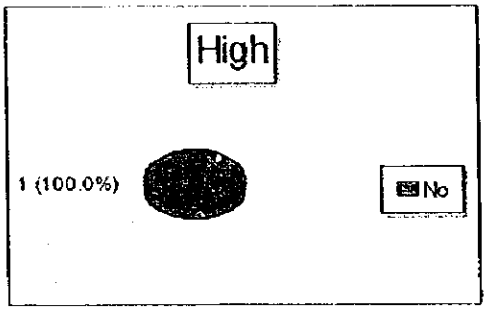
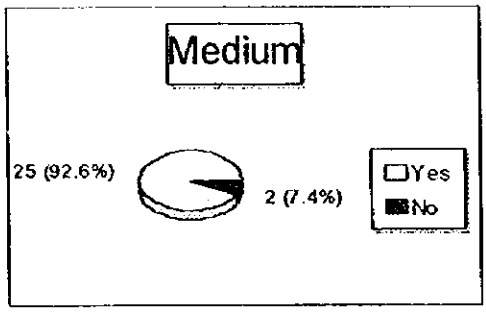
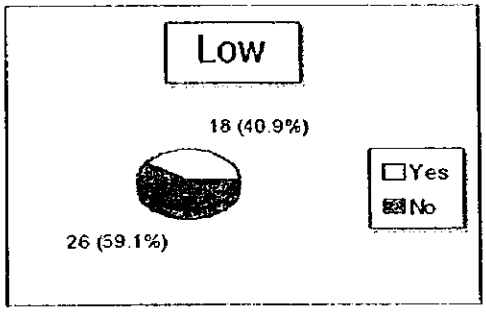


Table 2.43 Participation in *Clean Days*

	Yes	No
High Income	-	1
Medium Income	25	2
Low Income	18	26
Surrounding Area	5	12
Total	48	41







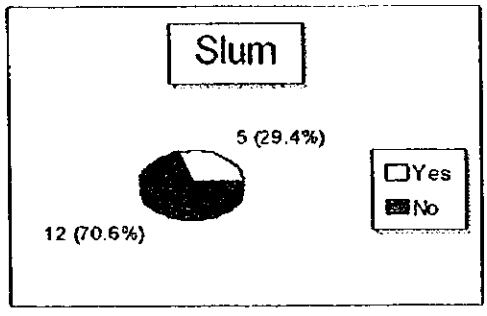
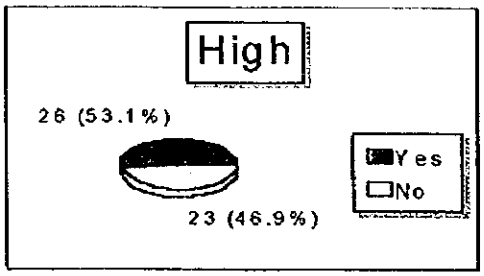
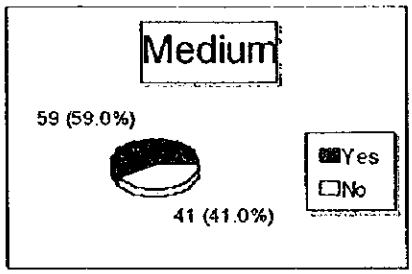
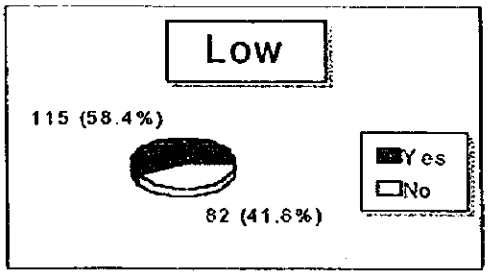


Table 2.44 Willingness to Pay for Improved Services by NCC

	Yes	No
High Income	26	23
Medium Income	59	41
Low Income	115	82
Surrounding Area	105	52
Total	305	198







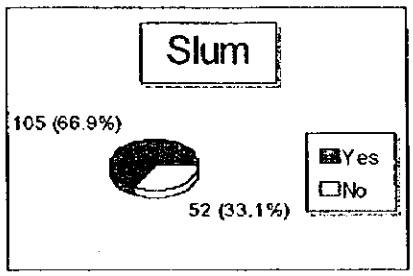
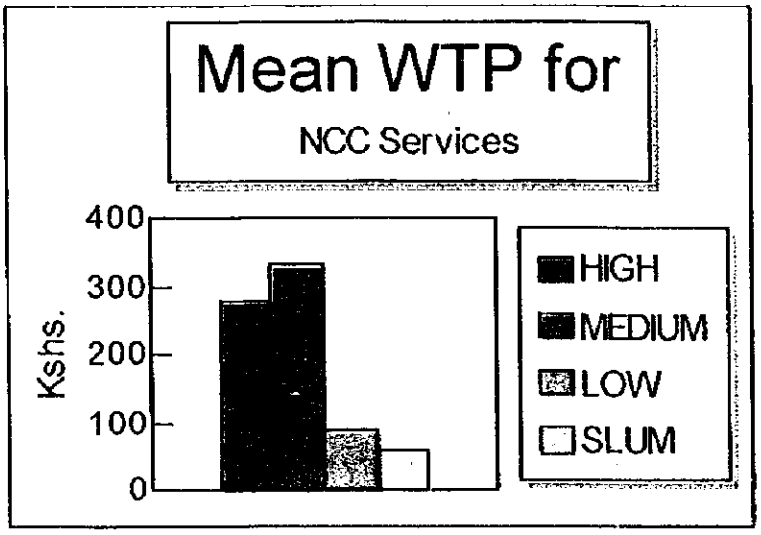


Table 2.45 Mean WTP for Improved NCC Services

	Kshs.
High Income	280
Medium Income	330
Low Income	86
Surrounding Area	59



JICA