RELATIONSHIP BETWEEN PERSONALITY TRAITS OF THE URBAN POOR CONCERNING SOLID WASTE MANAGEMENT AND HOUSEHOLD INCOME AND EDUCATION

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ABSTRACT

This study analyzes the relationship between knowledge, attitude, and behaviour of the urban poor householders concerning solid waste management systems and monthly household income and education. To attain the objective, the study employed statistical techniques such as t-tests of equality of means, one-way ANOVA, χ^2 „likelihood ratio" test and simple descriptive statistics. The findings show that the urban poor communities with low income and education have been proven to behave in ways matching with and conducive to environment-friendly solid waste management, for instance, by practicing recycling and waste source reduction. This study also proves that the urban low-income communities generally have a very proactive role from a sound environmental management perspective, as they are the main recyclers and source-reducers of solid waste. The study suggests that policies should be formulated to focus on promoting knowledge, education, skills, and empowerment of the urban poor as means of promoting their living conditions.

KEY WORDS

CLASSIFICATION

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INTRODUCTION

Malaysia is becoming more prosperous, industrialized, and urbanized nation due to its rapid economic growth over the past decades. One of the major consequences of Malaysia's rapid urbanization and social transformation is a greatly increased generation of municipal solid waste. Due to population growth and increasing consumption, the amount of solid waste generated in Peninsular Malaysia increased from 16 200 t per day in 2001 to 17 000 t in 2007 (Figure 1). This indicates that an average of 0,85 kg of waste is generated per person per day with an increasing trend in waste generation. Over the period from 1991 to 2020, waste generation is estimated to increase by an average of 3,24 % per annum, although this is expected to fall subsequently in later years with measures to be taken for waste minimization [1]. In Malaysia, the environmental problems originating from improper management of solid waste management are mainly related to the people living in urban underdeveloped areas and informal settlements. Since the government has been working to minimize developmental disparity throughout the country and resettle the urban poor in low-cost flats and longhouses, the problems of urban poverty and resulting solid waste management are expected to be minimized in the years to come. At present, 76 % of municipal solid wastes are disposed of properly while the rest is thrown into illegal dumps, drains, canals, and rivers [2]. Disposal methods for municipal solid waste in Malaysia comprise of 10 % composting, 50 % open dumping, and 30 % land-filling [3]. While the overall condition of solid waste management in Malaysia can be considered as satisfactory, the urban squatter households and low-cost flat dwellers still suffer from inadequate service provisions of household waste disposal and collection.

- About 17 000 t of waste are generated per day in Peninsular Malaysia.
- Average per capita generation of waste is 0,85 kg per day.
- Per capita generation of waste in Kuala Lumpur is about 1,5 kg per day.
- About 76 % waste generated is collected by private and municipal waste collection agencies.
- 1 % - 2 % waste is recycled and the rest is taken to disposal sites.
- Over 40 % of 179 disposal sites are being operated as dumpsite.
- Intermediate treatment is limited to small-scale thermal treatment plant in resorted islands.
- Generation of solid waste is expected to reach 30 000 t per day in 2020.

Figure 1. Solid waste management condition in Malaysia [2].

In Kuala Lumpur city, the problem of solid waste disposal is very often related to the squatter and low-cost flat households. The waste generated from the squatters or informal settlements of Kuala Lumpur city amount to about 200 t per day [4]. As squatter areas are generally undeserved, only half of this amount is collected each day from central collection points [5]. The same estimation shows that squatters dispose of their waste as follows: 49,7 % in waste site allocated, 31,9 % by open burning, 6,5 % into the rivers, and 5,2 % by others means. That means inadequate and traditional waste management systems are the norms in the squatter areas. Open dumping of wastes has been practiced in Kuala Lumpur over the years and is still prevalent today. Since the dumpsites do not have proper measures to control rainfall and run-off, consequently large quantities of discharge are formed which pass into downwards and pollute the groundwater.

Moreover, household and municipal wastes and their disposal pose an enormous challenge to environmental managers in Kuala Lumpur. Because, a day lost in collection leads to a piling up of these wastes and under the hot humid condition, the wastes decompose very rapidly, producing obnoxious odour and attracting flies and vermin. The inadequate or traditional system of waste management does not affect only the local environment and health but also equally the neighbouring environments and communities. The disposal of waste is also a

major problem to the low-cost flat dwellers, because of their improper methods of waste disposal making them a high-risk group for contracting and spreading infectious diseases. Many endemic diseases such as diarrhoea, typhoid, food poisoning and infant mortality are common among them.

However, the problem of solid waste management is still perceived as an unresolved problem experienced by the developing countries. In Malaysia, this problem has been considerably resolved by the appropriate actions and policies taken by the government engaging both the public and private sectors. But the environmental problems related to solid waste management systems amongst the squatters and low-cost flat dwellers in Kuala Lumpur city are more acute and thus they also require appropriate actions and policies to be taken by the respective authorities. The present study is an attempt to analyze the relationship between personality traits such as, knowledge, attitude, and behaviour of the urban poor householders with regard to solid waste management systems and monthly household income and education, since it is very often believed that the people with low levels of income and education have a tendency to degrade the environment by practicing improper methods of environmental management systems. Although this study emphasizes on the solid waste management systems of the urban squatters and low-cost flat dwellers, it also considers the other environmental management systems that are consequential to their daily livelihood.

RESEARCH METHODS

SOURCES OF DATA AND SAMPLE DESIGN

The analysis of this study is based on primary data collected recently from three areas of squatter and low-cost flat dwellers in Kuala Lumpur. The data for this study was taken to reflect the level of living condition and the management system of solid waste of the squatter and low-cost flat households in Kuala Lumpur City. Therefore the squatters and low-cost flat houses were chosen for the field survey. Trained interviewers paid their visits for several times in each study area. The interviewers had conducted the interviews with the persons who were the heads of the households, the wives, or persons responsible for the economic decision for their families, and older than 18 years.

The overall sampling design for the study can be described as „stratified quota random sampling" with the key stratification variable „characteristics of household". In the first stage, the household to be surveyed had been selected purposively through a preliminary „windshield survey" in which the general characteristics of squatters or low-cost flat houses are found to exist. For doing this, enumerators were assigned to particular household types in each area, with minimum interview-quotas for each household-type. Then, to interject randomness into the sampling plan, enumerators had been advised to seek interviews with every second or third home on a particular street. A total of 300 household heads were interviewed from three parliamentary areas of Kuala Lumpur within which 100 households were selected from each area following the ratio of 60 % and 40 % for the squatters and low-cost flat dwellers, respectively.

SELECTION OF STUDY AREAS

The study was undertaken in three parliamentary areas of the Federal Territory of Kuala Lumpur. The parliamentary areas are Kepong, Segambut, and Titiwangsa and the respective squatter areas that have been surveyed are Jinjang Utara Tambahan, Sentul Pasar, and Datuk Keramat. It has been observed that most of the low-cost flats are situated at the places other than squatters and most of these are also scattered. Although a substantial number of low-cost flats are located at Jinjang Utara Tambahan that fulfilled the requirement of the sample size

ratio of the study but their distribution was scattered in both Datuk Keramat and Sentul Pasar. However, there have been two low-cost flats selected from the area of Sentul Pasar, namely Flat Sri Terengganu and Flat Sri Kelantan. Sentul Pasar is an area, which was considered within the broader boundary of Sentul Utara. To cover the sample size ratio in the study, three low-cost flats have also been selected from Datuk Keramat area. The selected flats are Flat Pangsa Murni, Flat Seri Perlis 2, and Flat Keramat Jaya and all they are located at the centre place of Datuk Keramat area.

Selection of these three areas for the study was based on two criteria. First, the poverty groups that are observed to exist within the federal territory of Kuala Lumpur are predominantly concentrated in the squatter areas. But there are also a considerable number of the urban poor that are living in the low-cost flats. Thus, to have the actual information on the poverty threshold, squatters and low-cost flats were chosen as the level of living condition of urban poor. Second, the study focuses on population that are ethnically multiracial comprised of a nation of Malay, Chinese, and Indian.

To interject all the ethnic groups into the study, three different areas of squatters and low-cost flats have been selected with a view that an individual ethnic group must be dominant in each area. From this viewpoint, three areas of squatters and low-cost flats were selected within which an individual ethnic group was found to be dominant. The study covered such the areas from Kuala Lumpur in which Chinese were found to be the most dominant group in Jinjang Utara Tambahan while Indians and Malays were found to be the most dominant groups in Sentul Pasar and Datuk Keramat, respectively.

QUESTIONNAIRE PREPARATION

To collect the primary data from the level of living condition of urban poor, a structured questionnaire was developed iteratively over time. Initial iterations involved improvements based on discussions among the researchers involved in this research. The questionnaire was designed with a view that it could fulfil the requirements of the variables that have been considered for statistical analysis. However, the final changes were made, based on comments and results of pre-testing the final draft questionnaire. The original questionnaire was prepared in Bahasa Melayu. A relatively large proportion of respondents in Jinjang Utara and Sentul were more fluent in languages other than Bahasa Melayu. For this reason, multi-lingual enumerators had been engaged for these two areas and the interviews were conducted in languages most familiar to individual respondents. Since the second most common language is English, the original questionnaire was further translated into English to enable English-friendly respondents to answer. In cases of Mandarin, Cantonese, and Tamil, enumerators translated questions „on the spot" which were further verified by the researchers.

TECHNIQUE OF ANALYSIS

All the data were coded directly on questionnaires and then entered into personal computer. Descriptive statistics such as, means, ranges, and frequency distributions were computed for all variables in the original questionnaire, and for selected variables that were created for use in multivariate analysis. The statistical significance of three types of differences between and among variables was determined by three types of tests. For example, the significance of differences for continuous variables between pairs of means, by „t-tests of equality of means", and between more than two means such as differences among the three areas, by one-way analysis-of-variance (ANOVA) tests [6]. Besides, the significance of differences for discrete variables between and among observed and expected frequencies was examined by χ^2 „likelihood ratio" test.

RELATIONSHIP BETWEEN HOUSEHOLDERS' „KNOWLEDGE" REGARDING SOLID WASTE MANAGEMENT AND HOUSEHOLD INCOME AND EDUCATION

RELATIONSHIP BETWEEN „SOURCE REDUCTION" OF WASTE MATERIALS AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

More than 41 % of all respondents reported that they have heard about „source-reduction" of waste that means, measures taken by agencies and individuals to keep waste from entering the waste stream (in contrast with „recycling" which is finding a benign use for waste that enters the waste stream). Percentages of such respondents differ significantly among areas ($P < 0,01$), with the highest percentage of 75,0 % in Datuk Keramat, followed by 37,0 % in Jinjang Utara and 13,0 % in Sentul. The percentages of respondents who have heard about „source-reduction" of waste are directly and significantly related to monthly household income ($P < 0,01$), with the percentages of respondents hearing about „source-reduction" of waste for the following most important income ranges, in Malaysian ringgit (MYR) as follows: 48,2 % for „less than or equals MYR 2000", 75,0 % for MYR 4501-5000, and 100,0 % for MYR 5001-6001. Moreover, the percentages of respondents who have heard about „source-reduction" of waste are also directly and significantly related to education level ($P < 0,01$), with the percentages of respondents hearing about „source-reduction" of waste for the following education levels as follows: 10,3 % for „no schooling", 23,5 % for „primary school", 47,7 % for „junior high school", 59,6 % for „secondary school", 90,9 % for „higher secondary", 75,0 % for „diploma", and 66,7 % for „first degree".

By far the most common sources of information about „source-reduction" of waste for all respondents collectively are television (95,2 % of respondents who have heard about „source-reduction" of waste) and newspapers (91,2 %), followed by „other sources" (9,6 %), local town authority (7,2 %), and private waste contractor (5,6 %). The most important information sources in Jinjang Utara are television (100,0 %) and newspapers (83,8 %). Most important sources in Sentul are newspapers (84,6 %) and television (76,9 %). In Datuk Keramat, both the information sources of television and newspapers are most important with the same percentage (96,0 % each). Both in Jinjang Utara and Sentul, „other sources" also represents a significantly important ($P < 0,01$) information source. Among the other sources, local and foreign magazines and source-reduction campaign by local people are important. Local town authority and private waste contractor are also important in Jinjang Utara with the same percentage (16,2 %), but the levels of significance are different. However, the levels of significant differences for the two above-mentioned information sources are $P < 0,05$ and $P < 0,01$, respectively.

RELATIONSHIP BETWEEN HOUSEHOLDERS' RECYCLING AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

In total 93 % of all respondents indicated that they have heard about recycling program. The percentages differ significantly among areas ($P < 0,01$); with the all respondents in Jinjang Utara have heard about it. The next highest percentage of respondents who have heard about recycling program comes from Datuk Keramat (95,0 %) and the lowest from Sentul (84,0 %).

By far the most common sources of information about recycling program for all respondents collectively are television (99,0 % of respondents who have heard about recycling program) and newspapers (91,0 %), followed by other friends (15,0 %) and children in school (14,0 %). The most important information sources in Jinjang Utara are television (100,0 %), newspapers (80,0 %), other friends (19,0 %), and private waste contractor (15,0 %). Most important sources in Sentul are newspapers (100,0 %) and television (97,0 %). In Datuk

Keramat, they are television (100,0 %), newspapers (96,0 %), children in school (38,0 %), and other friends (19,0 %). Both in Jinjang Utara and Datuk Keramat, television is a significantly more important source of recycling information ($P < 0,10$). In Sentul, compared to other areas, newspapers are a significantly important source of recycling information ($P < 0,01$). In all the areas, other important information sources such as other friends' ($P < 0,05$), children in school ($P < 0,01$), private waste contractor ($P < 0,01$), and local town authority ($P < 0,05$) also differ significantly.

Several information sources are significantly associated with monthly household income. As a source of information on recycling, newspapers are directly related to income ($P < 0,01$). The relationship between other friends (a source of information on recycling) and monthly household income is generally inverse and statistically significant ($P < 0,10$). Although, the relationships between „children in school" ($P < 0,10$), „neighbours" ($P < 0,10$), and „other Sources" ($P < 0,05$) and monthly household income are statistically significant, but with no patterned relationship with income.

Three sources of information on recycling are significantly associated with education level of respondents. Television is directly related to education level ($P < 0,01$), with only 95,0 % of respondents having an education level of less than primary school learning about recycling from television. All the respondents with an education level of primary school or higher learned about recycling from television. Newspapers are also directly related to education level ($P < 0,01$), with percentage of respondents, having the education levels between primary school and secondary school and who learned about recycling from newspapers, ranging from 78,0 % to 100,0 %. All the respondents with an education level of higher secondary school or higher learned about recycling from the same source. As an information source on recycling, other sources such as local and international magazines are also directly related to education level ($P < 0,01$), with no respondent with an education level of secondary school or less has heard about recycling from magazines. Respondents with an education level of higher secondary school or higher have heard about recycling from magazines.

The results of the study show that significantly more recyclers than non-recyclers have heard about recycling from television and newspapers. The results also show that there is no significant relationship between recyclers and monthly household income. In addition, the relationship observed to be neither direct nor inverse, rather a mix relationship has been cited within the different ranges of monthly household income. But, the relationship between recyclers and education level of respondents is generally inverse and statistically significant ($P < 0,01$). Chi-Square tests show that the higher the levels of education of respondents, the lower the percentages of non-recyclers. Thus, the results of the study fail to receive support to the assumption that low-income householders are reasonably motivated to recycle waste materials due to their economic constraints. Moreover, the level of education also does not influence householders to recycle their household waste materials.

RELATIONSHIP BETWEEN HOUSEHOLDERS' „ATTITUDE" TOWARD SOLID WASTE MANAGEMENT AND HOUSEHOLD INCOME AND EDUCATION

RELATIONSHIP BETWEEN SOURCES OF DISSATISFACTION WITH WASTE CONDITIONS AND MONTHLY HOUSEHOLD INCOME

The relationship between all the individual sources of dissatisfaction with local waste conditions and monthly household income is statistically significant, except for the view with

„people in this area dispose of waste everywhere", which is not significant at $P \geq 0,10$ level. The relationship between the two highest sources of dissatisfaction („areas around public dust-bins are dirty" and „dogs, cats, and big rats search for food in the waste") and monthly household income is direct and statistically significant ($P < 0,01$). The relationship between all other sources of dissatisfaction and monthly household income is also direct and statistically significant at $P < 0,01$ level, except for the third, sixth, seventh, eighth, and ninth sources of dissatisfaction (Table 1) that are significant at levels $P < 0,05$, $P < 0,05$, $P < 0,10$, $P < 0,05$, and $P < 0,05$, respectively. In addition, respondents' views on all the sources of dissatisfaction with the waste conditions in their residential areas differ significantly among households with different ranges of monthly income, but with no patterned relationship to income. The source of dissatisfaction with „people in this area dispose of waste everywhere" has no patterned relationship with income, and also differs not significantly among areas ($P \geq 0,10$).

RELATIONSHIP BETWEEN SOURCES OF DISSATISFACTION WITH WASTE CONDITIONS AND EDUCATION LEVEL

The relationship between all the individual sources of dissatisfaction with local waste conditions and respondents' education level is statistically significant, except for the following sources that are not significant at $P \geq 0,10$ level: „when waste collectors collect waste, they don't collect all the waste", „dust-bins supplied not covered", „public dust-bins are too far from my house", „areas around public dust-bins are dirty", and „mosquitoes, flies or vermin are attracted to waste". But the relationships involving all the sources of dissatisfaction and education level are direct, also with no patterned relationship with education.

RELATIONSHIP BETWEEN RESPONDENTS' VIEWS ON PRESENT WASTE SITUATION AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

Of the all respondents, 47,0 % view the waste situation to be the same today compared to 5 years ago. Nearly 24,0 % indicate the situation has been better and 15,0 % say it has turned to be worse. Differences among areas are statistically significant ($P < 0,05$). The most common indications of improve waste conditions today amongst the low-cost flat dwellers in Sentul are recycling program is provided including provisions of yellow recycling boxes and waste collection services are provided more frequently and in accordance with the schedule. In Datuk Keramat, the relevant views are more public dust-bins are provided to individual low-cost flats, followed by waste collection services more frequently and in accordance with the schedule, more public dust-bins are provided to squatter areas, and waste collection services are more efficient. But, no common indication of improved waste conditions today was reported in Jinjang Utara.

On the other hand, of those indicating that waste conditions today are worse compared to 5 years ago, the most common source of dissatisfaction is less frequent and regular waste pick-up, followed by inadequate cleaning of drains and lack of professional responsibility. As many as 71 respondents indicated the opinion that waste collection services today are more frequent and regular, while 46 indicated the services are less frequent and regular. This seemingly contradictory finding apparently reflects waste services conditions that either differs from place to place within the areas studied or are perceived differently by different respondents in Squatters and Low-cost Flat houses.

The relationship between respondents believing that their neighbourhood waste conditions are better today, compared with 5 years ago, and monthly household income is direct and statistically significant ($P < 0,05$), with no patterned relationship to income. Such a belief have

24 % of respondents with incomes less than or equal to MYR 1200, whereas more than 26,0 % with incomes MYR 1201-4000 do and 25,0 % of those with incomes more than MYR 4000 do.

The relationship between respondents believing that their neighbourhood waste conditions are better today, compared with 5 years ago, and education level is also direct and statistically significant ($P < 0,05$), but no patterned relationship with education. Between 17,0 % and 40,0 % of respondents with education levels of secondary school or less and 25,0 % with education level of diploma possess such a belief.

RELATIONSHIP BETWEEN RESPONDENTS' VIEWS ON HEALTH IMPLICATION OF WASTE AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

More than 51 % of all the respondents indicated they believe that conditions surrounding waste are harmful to human health, while nearly 49 % do not believe so. Presumably, the first groups are concerned with possible harm to workers who handle waste and/or the spread of communicable diseases resulting from human contact with open accumulations of wastes in public places. Concerns with the implications of waste to human health differ significantly among areas ($P < 0,05$), with the degree of concern being the greatest in Jinjang Utara and least in Sentul. The relationship between respondents being concerned over health implications of waste and monthly household income is generally inverse, but statistically not significant ($P \geq 0,10$). Between 54,0 % and 58,0 % of respondents with incomes less than or equal to MYR 3000, and from 31,0 % to 44,0 % with incomes MYR 3001-6000 have such a belief. The range of percentage of households with incomes more than MYR 6000 is from 50,0 % to 60,0 %. The relationship between respondents being concerned over health implications of waste and education level is direct and statistically significant ($P < 0,05$). Nearly 60 % of respondents with the education level of „primary school" or less, 47,0 % between „primary school" and „junior high school", from 51,0 % to 52,0 % between junior high school and higher secondary, and from 63,0 % to 75,0 % higher than higher secondary have such a belief.

RELATIONSHIP BETWEEN RESPONDENTS' VIEWS ON PRIVATIZATION OF SOLID WASTE MANAGEMENT AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

Of the all respondents 71 % agree that local waste conditions could be improved through privatizing waste collection and disposal services. On the other hand, 29 % of respondents indicated that they are not agreeing with the concept of privatization through which local waste collection and disposal problems could be improved. Of the 87 respondents who do not agree with the privatization of waste collection and disposal facilities, the reason with greatest perceived importance is „government should provide waste collection and disposal facilities at no charge". Respondents' views over the privatization of waste collection and disposal facilities differ significantly among areas ($P < 0,05$), with Jinjang Utara respondents being most agreed (96,0 %) and Sentul respondents agreed the least (22,0 %). Of those respondents did not agree with the privatization, the highest number was reported in Sentul (78,0 %) and the lowest in Jinjang Utara (4,0 %). In addition, 70 % of the all respondents indicated that they would agree, if the government plans to privatize the waste collection and disposal facilities to improve the local waste conditions in their residential areas. On the other hand 30,0 % of the all respondents did not agree. Respondents' views on the government plan to privatize the waste collection and disposal facilities differ significantly among areas ($P < 0,05$), with Datuk Keramat respondents being most agreed (93,0 %) and Sentul respondents being least agreed (34,0 %). Of Jinjang Utara respondents, 83 % have also reported to agree with the government plan. Of those respondents did not agree with the government plan in

privatizing local waste collection and disposal facilities, the highest number was reported in Sentul (66,0 %) and the lowest in Datuk Keramat (7,0 %).

There are areas in Kuala Lumpur City, where private waste collection agencies are already providing household waste collection and disposal facilities. Thus, the respondents of the study were also asked whether they know about the waste situation of the areas those are already be serviced by private waste collection agencies. In response, 38 % indicated that they do not know the waste situation of the areas those are serviced by private waste collection agencies. 30 % indicated that the situation is same, 28 % indicated it is seemed to be better, and only 3 % indicated it is worse. Differences in respondents' views are statistically significant among areas ($P < 0{,}05$). The relationship between respondents believing that waste conditions could be improved through privatizing the waste collection and disposal facilities and monthly household income is statistically significant ($P < 0{,}05$), but with no patterned relationship with income. The relationship between respondents' belief that waste conditions could be improved through privatizing the waste collection and disposal facilities and through raising education level is direct and statistically significant ($P < 0{,}10$) with a patterned relationship with education. For example, between 55 % and 77 % of respondents with education levels of secondary school or less have such a belief, whereas between 62,0 % and 100,0 % of respondents with the education levels of higher secondary school or higher have also such the belief.

RELATIONSHIP BETWEEN THE REASONS HOUSEHOLDERS RECYCLING AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

All of the differences in reasons for recycling differ significantly among households in the eleven monthly income-ranges. The relationship between „receives payment for materials recycled" ($P < 0{,}05$) and monthly household income is generally constant for all ranges of households. The relationship between all other reasons for recycling and monthly household income is direct. In other words, households with higher income ranges show a comparatively higher mean level of importance for recycling their household waste materials. All of the differences in reasons for recycling differ significantly ($P < 0{,}05$) among householders with different education levels, except for the reason, namely „save resources", which is statistically insignificant ($P \geq 0{,}10$). The relationship between „receives payment for materials recycled" and education level is generally direct for all levels of education holders. The relationship between all other reasons for recycling and education level is also direct. These direct relationships imply that householders with higher levels of education show a comparatively higher mean level of importance for recycling their household waste materials.

RELATIONSHIPS BETWEEN THE REASONS HOUSEHOLDERS' NOT RECYCLING AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

The relationship between all the reasons for not recycling and monthly household income is not statistically significant ($P \geq 0{,}10$), except for the reasons, namely „not interested in recycling" and „other reasons", which are significant at $P < 0{,}10$ and $P < 0{,}05$ levels, respectively. The above two reasons for not recycling also show a non-patterned relationship to income. However, the relationship between all the reasons for not recycling and education level of respondents is generally inverse and statistically insignificant ($P \geq 0.10$), except for the following reasons that are statistically significant at different levels: „not interested in recycling" ($P < 0{,}05$), „don't have enough room in my home to store materials" ($P < 0{,}05$), „recycling program is not mandatory" ($P < 0{,}05$), and „other reasons" ($P < 0{,}05$). Although, the above-mentioned reasons for not recycling are statistically significant in different levels of education, but have no simple patterned relationship with education.

RELATIONSHIP BETWEEN HOUSEHOLDERS' MOTIVATION FOR ENVIRONMENTALLY SUSTAINABLE SOLID WASTE MANAGEMENT AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

The results of testing the hypothesis „householders are strongly motivated by economic reasons to practice environmentally sustainable solid waste management" are interesting. This hypothesis is supported in that the means for economic reasons, for which householders practice environmentally sustainable solid waste management, such as sell the waste to an „itinerant" buyer ($P < 0,05$), have practice of collecting and recycling waste materials ($P < 0,05$), separate waste materials in order to their kinds ($P < 0,05$), reuse waste materials ($P < 0,05$), and „source-reduces" waste ($P \geq 0,10$) are significantly greater for the householders with low income categories, except for the last-mentioned reason of which mean is also greater for the same income categories of the householders, but not statistically significant. Moreover, the means for the above-mentioned five economic reasons are significantly greater ($P < 0,05$) for the householders with lower education levels, except for the fourth and fifth reasons of those means are also greater for householders with the same education levels, but not statistically significant ($P \geq 0,10$). In different education levels of the householders, the reason „separate waste materials in order to their kinds" is significant at $P < 0,05$ level. These results imply that the householders with low levels of income and education are strongly motivated to practice environmentally sustainable solid waste management, because their economic hardships force them to do so. In other words, households with inadequate or limited income sources are willing to practice environmentally sustainable solid waste management, which in turn benefits them economically.

RELATIONSHIP BETWEEN HOUSEHOLDERS' „BEHAVIOUR" CONCERNING SOLID WASTE MANAGEMENT AND HOUSEHOLD INCOME AND EDUCATION

RELATIONSHIP BETWEEN QUANTITY OF HOUSEHOLD WASTE GENERATION AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

All the households covered in the survey generate, every three days, an average of 5,66 kg of waste. Of all respondents, the following percentages generate the following quantity every three days: 28,3 % up to 4 kg, 46 % from 5 kg to 6 kg, 12,6 % from 7 kg to 8 kg, 11,7 % 10 kg, and 1,3 % from 12 kg to 15 kg. The quantity of waste generation differs significantly among areas ($P < 0,05$), with the highest average of 6,92 kg reported in Sentul, followed by 5,83 kg in Jinjang Utara and 4,22 kg in Datuk Keramat. The one-way ANOVA test of mean waste generation for households in different ranges of monthly household income shows statistically significant differences, with a direct patterned relationship with income. The same test also shows a statistically insignificant ($P \geq 0,10$) relationship between mean waste generation and education, with no patterned relationship with education.

RELATIONSHIP BETWEEN HOUSEHOLDS' WASTE DISPOSAL METHODS AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

The most common reported method for disposing household waste is via public dust-bin received from either local town authority or private waste contractor (88 % of respondents). However, the other methods of waste disposal are as follows: 58,3 % of respondents dispose in their own dust-bins, 47 % dispose waste in public dust-bins provided by private source, 46,3 % sell waste to itinerant buyers, 46 % dispose waste in their own dust-bins received from either local town authority or private waste contractor, 30,3 % dispose waste by burning,

17,7 % put waste in plastic bags placed in front of their houses, 11,7 % throw their waste into river or canal or drains, 5 % dispose anywhere, and 4,7 % pile waste loose in front of their houses.

All the above-mentioned waste disposal methods differ significantly among areas ($P < 0,05$). For example, „dispose of waste in public dust-bin received from local town authority or private waste contractor" is by far the most common in Jinjang Utara (100 % of respondents) and least common in Datuk Keramat (67 %). The use of „own dust-bins" is by far the most common in Sentul (100 % of respondents), but no respondent reported that he or she is using such method of waste disposal in Jinjang Utara. 84 % of households in Sentul dispose their household wastes in public dust-bins provided by private sources, but none in Jinjang Utara reported that they are using such method through receiving dust-bins from any private sources. 95 % of households in Jinjang Utara and only 29 % and 15 % of households in Sentul and Datuk Keramat, respectively, dispose of waste through sales to itinerant buyers. Almost all of the households (99 %) in Sentul dispose of waste in their own dust-bins received from either local town authority or private waste contractor; whereas no respondent reported that he or she is doing so in Jinjang Utara. The following five disposal methods are of significantly importance in Datuk Keramat than in the other two areas: dispose waste by burning (41 % versus 34 % and 16 %), put waste in plastic bags placed in front of their houses or at kerbside (29 % versus 24 % and none in Jinjang Utara), throw wastes into river or canal or drains (32 % versus 3 % and none in Jinjang Utara), dispose wastes anywhere (14 % versus 1 % and none in Jinjang Utara), and pile waste loose in front of their houses (9 % versus 5 % and none in Jinjang Utara). This discussion is based on data provided in Table 1. in Appendix A.

The relationship between dispose of waste via dust-bins and itinerant buyers (i.e.: the socially most acceptable ways) and monthly household income is direct and statistically significant ($P < 0,05$ and see Appendix A for details). Percentages of households disposing of waste via dust-bins and itinerant buyers are as follows: from 32 % to 80 % for income ranges less than MYR 2000, from 81 % to 92 % for income ranges MYR 2001-5000, and from 93 % to 100 % for income ranges greater than MYR 5000. That means, the higher the level of household income, the higher the incidence of use of own dust-bin for disposing wastes. The relationship between dispose of waste via dust-bins and level of education of respondents is also direct and statistically significant ($P < 0,05$ and see Appendix B for details). The incidence of using own dust-bins is greater for the respondents or households with higher education (more than secondary school) and lower for the respondents with an education level of less than junior high school. But the relationship between dispose of waste via itinerant buyers and level of education of respondents is generally inverse and statistically significant ($P < 0,05$). This finding indicates that the incidence of selling waste to an itinerant buyer is greater for the respondents with lower education and lower for the respondents with higher education level. This discussion is based on data provided in Table 2. in Appendix B.

RELATIONSHIP BETWEEN LENGTH OF TIME WASTE IS STORED IN THE HOUSE AND MONTHLY HOUSEHOLD INCOME

The relationship between placing wastes at kerbside the same day, as the waste is generated and monthly household income is generally inverse and statistically significant ($P < 0,05$). Percentages of households placing waste at kerbside on the same day generated as follows: from 28 % to 29 % for less than or equals MYR 3000, up to 31 % for the income ranges between MYR 3001 and MYR 6000, and 20 % for greater than MYR 6000. The relationship between storing waste for 1-2 days before placing it at kerbside and monthly household income is generally direct and significant ($P < 0,05$). The following percentages of households store their waste for 1-2 days before disposal: from 62 % to 83 % for income ranges of less than MYR 2000, from 85 % to 87 % for income ranges of between MYR 2001

and MYR 4000, and from 88 % to 100 % for income ranges of greater than MYR 4000. The relationship between storing waste for 3-4 days before placing it kerbside and monthly household income is significant ($P < 0,05$), with no patterned relationship with income. In addition, the relationship between storing waste for 5-7 days before placing it at kerbside and monthly household income is not statistically significant ($P \geq 0,10$), with also no patterned relationship with income.

RELATIONSHIP BETWEEN LENGTH OF TIME WASTE IS STORED IN THE HOUSE AND EDUCATION

The relationship between placing waste at kerbside the same day of waste generation and education level is inverse and statistically significant ($P < 0,05$). percentages of households placing waste at kerbside on the same day generated are as follows: from 31 % to 32 % for education level of primary school or less, from 22 % to 23 % for junior high school, 9 % for both secondary school and diploma, and no respondent with the education level of more than „diploma" indicated that he or she is placing his/her household waste at kerbside on the same day it is generated. The relationship between storing waste for 1-2 days before placing it at kerbside and education level is also generally inverse and statistically significant ($P < 0,05$). The following percentages of households store their waste for 1-2 days before disposal: 34 % with education level of „primary school", 29 % with „junior high school", 18 % with „secondary school", 5 % with diploma, and only 1 % with the education level of „first degree" or higher. Although, there are inverse relationships between storing waste for 3-4 days and 5-7 days before placing it at kerbside and education level, but both the lengths of time stored of waste are not statistically significant ($P \geq 0,10$).

RELATIONSHIP BETWEEN SOURCE-REDUCTION OF WASTE MATERIALS AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

Of the all surveyed households, 22,4 % have tried to „source-reduce" wastes. Differences among areas differ significantly ($P < 0,05$), with the highest percentage of households reported in Jinjang Utara (43,2 %) followed by 23,1 % in Sentul and 12 % in Datuk Keramat. The relationship between taking steps to „source-reduce" wastes and education level is inverse, but not statistically significant ($P \geq 0,10$) (Table 2). Percentages of households who have practiced „source-reduction" of waste and their respective levels of education are as follows: from 33 % to 35 % of respondents with education level of „primary school" or less, 31 % with „junior high school", from 10 % to 12 % with education level of between secondary school and higher secondary, 8,3 % with „diploma", and no household head with the education level of higher than diploma reported that he or she is doing so. The relationship between taking steps to „source-reduce" wastes and monthly household income is also not significant ($P \geq 0,10$), with no patterned relationship with income (Appendix A). This finding indicates that households' incomes neither encourage nor discourage the household members to „source-reduce" wastes. On the other hand, different levels of education obviously influence the households to do so. Thus, it can be concluded that the lower the level of education, the higher the incidence of „source-reduction" practices of wastes among households.

RELATIONSHIP BETWEEN HOUSEHOLDS' REUSING WASTE MATERIALS AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

The relationship between percentages of households who indicate one or more ways of reusing wastes that otherwise would be disposed of and monthly household income is inverse and statistically significant ($P < 0,05$), see Appendix A. Percentages of households who indicate one or more ways of reusing wastes differ with monthly household income as follows:

from 92 % to 100 % for incomes less than MYR 4000 and none for incomes greater than MYR 4000. The relationship between percentages of households who indicate one or more ways of reusing wastes that otherwise would be disposed of and education level is generally constant and statistically insignificant ($P \geq 0{,}10$), see Appendix B. Because, the percentages of households who indicate one or more ways of reusing wastes are the same (100 %) with different levels of education as follows: 100 % for each „no schooling", „primary school", „higher secondary", and „diploma". Thus, no patterned relationship has been proven statistically between reusing wastes that otherwise would be disposed of and education level.

RELATIONSHIP BETWEEN WAYS HOUSEHOLDS REUSE WASTE MATERIALS AND MONTHLY HOUSEHOLD INCOME

The relationships between percentages of households indicating two specific ways of reusing wastes and monthly household incomes is inverse and statistically significant ($P < 0{,}05$). Percentages of households who repair used materials differ among income ranges as follows: from 62 % to 92 % for the income ranges of less than MYR 4000, 100 % for MYR 4001-6000. However, the percentage for households with more than MYR 6000 income is 80 %. Percentages of households who use materials for a purpose different from their original purpose of buying the item differ among income ranges as follows: from 50 % to 100 % for the income ranges of less than MYR 4500, 75 % for MYR 4501-5000, 66,7 % for MYR 5001-6000, and 60 % for more than MYR 6000 ($P < 0{,}05$).

The percentages of households indicating that they „sell used materials to other people" differ significantly with monthly household income ($P < 0{,}05$), with no simple patterned relationship with income. The percentages of households „giving away used items" differ significantly for households in different income ranges ($P < 0{,}05$), with no simple patterned relationship with income. Although, the percentages of households, who indicated that they are using other ways in reusing waste materials, differ significantly for households in different income ranges ($P < 0{,}05$), but with no simple patterned relationship with income.

RELATIONSHIP BETWEEN WAYS HOUSEHOLDS REUSE WASTE MATERIALS AND EDUCATION

The relationships between percentages of households indicating two specific ways of reusing waste and education level are generally inverse and statistically significant. Percentages of households who repair used materials differ among education levels as follows: from 10 % to 31 % for primary school or less, 29 % for junior high school, 18 % for secondary school, from 3 % to 6 % for the education levels of between higher secondary and diploma, and only 0,4 % for first degree ($P < 0{,}10$). Percentages of households who use materials for a purpose different from their original purpose of buying the item differ among education levels as follows: from 29 % to 36 % for the education levels of between primary school and junior high school, 17 % for secondary school, from 3,6 % to 4,4 % for the education levels of between higher secondary and diploma, and 1,2 % for first degree ($P < 0{,}10$). The percentages of households indicating that they „sell used materials to other people" differ significantly with education level, with an inverse relationship as follows ($P < 0{,}10$): from 32 % to 34 % for the education levels of between primary school and junior high school, 15.8 % for secondary school, from 3 % to 5 % for the education levels of between higher secondary and diploma, and none with the education level of higher than diploma. The percentages of households indicating that they „giving away used items" differ significantly for households with different education levels, with a generally inverse relationship to education as follows ($P < 0{,}05$): from 23 % to 31 % for the education levels of between primary school and junior high school, 27 % for secondary school, from 5,6 % to 6,4 % for the education levels of

between higher secondary and diploma, and 1,6 % for first degree. Although the percentages of households, who indicated that they are using other ways in reusing waste materials, differ significantly for households in different education levels ($P < 0,05$), but with no simple patterned relationship with income.

RELATIONSHIP BETWEEN HOUSEHOLDS' SOURCE SEPARATION OF WASTE MATERIALS AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

Of all households 28 % separate their waste, according to type of materials (e.g.; glass, paper, tin, and plastic) before disposing these off. This action is either taken as a first step in their own personal recycling of materials, or presumably as an act of generosity toward waste collectors who commonly do some separating of recyclable items from mixed waste during their regular waste collection pick-ups. percentages of householders who separate materials vary significantly among areas as follows ($P < 0,05$): 57 % in Jinjang Utara, 21 % in Sentul and 6 % in Datuk Keramat.

The relationship between percentage of households who source-separate wastes and monthly household income is generally direct and statistically significant ($P < 0,05$), see Table 1. Percentages of such households differ with monthly household income as follows: from 16 % to 32 % for incomes of less than MYR 3000, from 33 % to 68 % for incomes of MYR 3001-6000. Outside this general pattern is 20 % for incomes of more than MYR 6000. The relationship between percentage of respondents who source-separate wastes and education level is generally inverse and statistically significant ($P < 0,05$), see Table 2. Percentages of such respondents differ with education level as follows: from 24 % to 62 % for „primary school" and below, 29 % for „junior high school", 24 % for „secondary school", 19 % for „diploma", and none for an education level of first degree or higher.

RELATIONSHIP BETWEEN HOUSEHOLDS' RECYCLING OF WASTE MATERIALS AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

More than 42 % of the all households surveyed „separate waste materials and recycle them". These respondents are considered as „recyclers" in the study. Of the 119 recyclers, 81 are from Jinjang Utara (81 % of respondents there), 21 are from Sentul (33,3 %), and 10 are from Datuk Keramat (10,5 %). These recycling percentages differ significantly among areas ($P < 0,05$).

The relationship between percentages of households who recycle and monthly household income is generally direct and statistically significant ($P < 0,05$) (Table 1). Percentages of households who recycle differ with monthly household income as follows: from 0 % to 14 % for incomes of less than MYR 1200, from 20 % to 53 % for incomes of MYR 1201-3000, from 25 % to 67 % for incomes of MYR 3001-6000. Outside this general pattern is 40 % for incomes of more than MYR 6000. The relationship between percentages of householders who recycle waste and education level is generally inverse and statistically significant ($P < 0,05$), see Appendix B. Percentages of householders who recycle differ with education level as follows: from 47 % to 71 % for „primary school" or less, from 25 % to 46 % for the education levels of between „junior high school" and „diploma", and none for the education level of „first degree" or higher. Outside this general pattern is 54 % for the education level of „higher secondary".

RELATIONSHIP BETWEEN RESPONDENTS' VIEWS ON COMMUNITY-BASED WASTE MANAGEMENT ORGANIZATION AND MONTHLY HOUSEHOLD INCOME AND EDUCATION

Of the all respondents interviewed, 64 % indicated that they and/or any of their family members would be willing to work voluntary with a community-based waste management

organization in their residential areas. On the other hand, more than 35 % of respondents indicated that they are not willing to work with such a community-based organization. Respondents' willingness to work with such an organization differs significantly among areas ($P < 0,05$), with the highest number of respondents in Datuk (94 %), followed by 72 % in Jinjang Utara and 27 % in Sentul. The relationship between willingness to work voluntary with a community-based waste management organization and monthly household income is not significant, with no patterned relationship with income ($P \geq 0,10$). But the relationship between percentage of respondents who are willing to work voluntary with a community-based waste management organization and their education level is statistically significant, with a generally direct relationship with education ($P < 0,05$). percentages of respondents who are willing to work voluntary with a community-based organization differ with education level as follows: from 51 % to 73 % for junior high school or less and from 68 % to 100 % for education levels of between secondary school and first degree.

Of those willing to work voluntary with a community-based waste management organization, the most common way of participation is by working with the organization (54,4 %), followed by assisting the organization in „other ways" (19,7 %). As many as 17,6 % of respondents volunteered the opinion that they will be assisting the organization with money, while 8,3 % indicated that they would help with materials. Views with the ways in which respondent and/or any member of his/her household would be willing to work voluntary with a community-based waste management organization differ significantly among areas ($P < 0,05$), with the way of „with work" is being greatest in Sentul (96,3 %) and least in Datuk Keramat (42,6 %). The way „with money" is being highest in Datuk Keramat (27,7 %) and no respondent indicated such a way in Sentul. The way „with materials" is being highest in Datuk Keramat and lowest in Sentul. The „other ways" being highest in Jinjang Utara and no respondent indicated such a view in Sentul. Among the other ways, respondents' moral support to that organization is important. In addition, of the 193 surveyed respondents who have viewed to work with a community-based waste management organization, 99 % indicated that they would, if necessary, also be willing to increase their contribution in future. Respondents' such assurance differs not significantly among areas ($P \geq 0,10$).

CONCLUSIONS AND POLICY RECOMMENDATIONS

The study makes an effort to analyze the relationship between personality traits such as, knowledge, attitude, and behaviour of the urban poor householders concerning solid waste management systems and monthly household income and education. The policy implications of this study might be useful for the appropriate authority of the three study areas, i.e. Kuala Lumpur City Council (KLCC). Depending on the degree to which current solid waste management programs, policies, and the cultural and social features of respondents in the three parliamentary areas in relation to other similar parliamentary areas or municipalities, the policy implications might have a significant applicability. It is reasonably expected that the policy recommendations of this study would be useful to policy and decision-makers of appropriate authority in their efforts to improve environmental quality, especially solid waste management systems, among the urban poor and low-income communities.

With regard to solid waste generation, the study shows that low-income groups usually generate much lower per person than middle and upper income groups. Therefore, the low-income groups contribute much less than middle and upper income groups to the environmental degradation caused by their poor management or disposal systems of household wastes. This study concludes that the low-income groups generally have a very proactive role from a sound environmental perspective, as they are the main re-users, recyclers, and source-reducers of solid wastes. In this regard, an integrated approach can only

consider the roles of all stakeholders involved in the process of environmentally sound solid waste management. In other words, an integrated approach could only consider the economic, social, institutional, and environmental aspects involved in the process of environmentally sound solid waste management. In such an approach, scavengers or informal waste pickers should be incorporated into the formal sector and be provided with appropriate sanitary working conditions. These informal waste pickers should also be promptly rewarded in the event that waste reduction and recycling activities are efficiently and effectively executed. Moreover, waste recycling can be prompted through consumer campaigns encouraging citizens to co-operate in waste separation and promoting them to purchase the recycled products. Also, citizens should be requested to pay a more realistic fee for waste services in return for the guarantee that indeed better services will be provided for ensuring a sustainable quality of lifestyles. But, no solid waste management can be effective without proper monitoring of its disposal activities. Therefore, its effectiveness should also be tested on regular basis and the departure from its inherent objectives at any time should be corrected timely in order to ensure a sound waste management process.

Based on the overall results, the study suggests that neither the reduction of poverty would improve environmental quality nor the improvement of environmental conditions would reduce the poverty. That being the case, policies should be formulated to focus on promoting education, knowledge and skills of the urban poor together with empowering them as a means of promoting their living conditions. For example, improving the level of education may increase the awareness and knowledge of the urban poor residents regarding environmental risks and hazards that may eventually influence them to improve the quality of their environmental management systems. Furthermore, the lack of public awareness and school education in the process of sound solid waste management systems can also severely restrict the use of community-based approaches among low-income communities. It has well been recognized that the lack of environmental awareness appears to be a very important factor that influences people to degrade the environment. This situation needs to be tackled, particularly among the communities where literacy levels are low and many people live in marginal economic circumstances. Thus, both formal and informal methods of education should be adopted through means such as local media, seminars, workshops, tours, and other educational competitions. In this regard, television, newspapers, and people's associations can also play most vital and important role for increasing people's awareness and knowledge regarding various environmental management systems. In addition, policies for sustainable urban growth need to be adopted that could be realistically able to view each urban environmental problem as it relates to all other urban issues thereby creating a habitat, which makes city living attractive to all groups. Based on the findings of this study and macro point of view, it can be recommended to create more economic opportunities in the rural areas as well as to industrialize the rural economy.

Finally, as stated by the United Nations Commissioner for Human Settlement and World Commission on Environment and Development, poverty and environment are often seen as inextricably linked, with the need to eradicate poverty as an initial step to protecting environment [7-8]. The present study concludes against this belief, and instead proposes that the problems of poverty and environment need to be seen differently as both the problems are experienced by different groups of communities differently. The study suggests that there is a little evidence of urban poverty being a significant contributor to environmental degradation, but strong evidence that urban environmental risks are a major cause or contributor to urban poverty. The environmental problems and hazards those exist among the urban low-income communities are associated with inadequate provision for electricity, water, sanitation, drainage, waste collection, and health care. These environmental problems can be greatly reduced by undertaking better environmental management and provisions of infrastructures.

APPENDIX A

Table 1. Association between various solid waste-behavioral factors measured in discrete terms and monthly household income. Table cells represent percentage of „Yes" response to Solid Waste-Behavioral Factors.

Solid Waste--Behavioral Factor	Monthly Household Income in MYR											
	≤ 1200	1201-1500	1501-2000	2001-2500	2501-3000	3001-3500	3501-4000	4001-4500	4501-5000	5001-6000	> 6000	Total
Dispose of waste in own dust-bin	80,0	32,2	45,2	92,9	60,0	75,0	87,5	33,3	75,0	100,0	100,0	58,3[*]
Sell the waste to an „itinerant" buyer	14,0	66,1	60,2	21,4	36,0	50,0	50,0	66,7	50,0	33,3	20,0	46,3[*]
Picks-up waste littered by other people	60,0	33,9	59,1	89,3	64,0	62,6	87,5	33,3	100,0	100,0	40,0	58,4[*]
Has practice of collecting and recycling waste	14,3	51,9	53,3	20,0	43,5	56,3	37,5	66,7	25,0	33,3	40,0	42,7[*]
Separate waste in order to their kinds	16,0	32,2	31,2	7,1	32,0	43,8	25,0	66,7	25,0	33,3	20,0	28,0[**]
Reuse waste materials	100,0	100,0	92,3	100,0	100,0	100,0	100,0	0,0	0,0	0,0	0,0	92,9[**]
„Source--reduces" waste	7,4	30,4	27,1	20,0	20,0	33,3	100,0	0,0	0,0	33,3	0,0	22,4[***]

*Significant at 0,01 level.
**Significant at 0,05 level.
***Not significant at 0,10 level.

APPENDIX B

Table 2. Association between various solid waste-behavioral factors measured in discrete terms and level of education. Table cells represent percentages of „Yes" response to Solid Waste Behavioral Factors.

Solid Waste-Behavioral Factor	Level of Education							
	No Schooling	Primary School	Junior High School	Secondary School	Higher Secondary School	Diploma	First Degree	Total
Dispose of waste in own dust-bin	62,1	46,9	53,5	78,9	45,5	75,0	100,0	58,3[*]
Sell the waste to an „itinerant" buyer	58,6	56,1	46,5	28,1	54,5	31,3	0,0	46,3[*]
Picks-up waste littered by other people	48,3	50,0	55,8	77,2	63,6	62,5	100,0	58,4[**]
Has practice of collecting and recycling waste	71,4	47,2	45,8	25,0	54,5	25,0	0,0	42,7[*]
Separate waste in order to their kinds	62,1	24,5	29,1	24,6	0,0	18,8	0,0	28,0[*]
Reuse waste materials	100,0	100,0	92,3	75,0	100,0	100,0	0,0	92,9[***]
„Source-reduces" waste	33,3	34,8	31,7	11,8	10,0	8,3	0,0	22,4[***]

*Significant at 0,01 level.
**Significant at 0,05 level.
***Not significant at 0,10 level.

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RELACIJE IZMEĐU OSOBINA LIČNOSTI ZA URBANI SIROMAŠNI SLOJ OBZIROM NA UPRAVLJANJE KRUTIM OTPADOM, PRIHOD KUĆANSTVA I OBRAZOVANJE

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SAŽETAK

Članak analizira relaciju između znanja, stavova i ponašanja urbanih siromašnih kućanstava obzirom na upravljanje krutim otpadom, mjesečni prihod kućanstva i obrazovanje. Za postizanje cilja, uporabljene su statističke tehnike poput t-testa, jednosmjerni ANOVA, χ^2-testa i jednostavne deskriptivne statistike. Rezultati pokazuju kako se urbane siromašne zajednice niskih prihoda i edukacije bave pogodnim po okoliš upravljanjem krutim otpadom, npr. recikliranjem i redukcijom izvora otpada. Istraživanje je također pokazalo kako urbane zajednice niskih prihoda općenito imaju vrlo proaktivnu ulogu iz perspektive upravljanja okolišem, zbog njihove znatne reciklaže i redukcije izvora krutog otpada. Istraživanje upućuje na to da politike trebaju biti temeljene na promociji znanja, obrazovanja, vještina i osnaživanju urbane siromašne zajednice kao načinu unaprijeđenja njihovih životnih uvjeta.

KLJUČNE RIJEČI

znanje, stavovi, ponašanje, urbani siromasi, upravljanje krutim otpadom, prihod kućanstva, obrazovanje