



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY ENGINEERING
SCHOOL OF COMPUTING
SECI 2143 SECTION 10 - PROBABILITY &
STATISTICAL DATA ANALYSIS
PROJECT 1
TOPIC: ENVIRONMENTAL ISSUE AND CONTROL
IN UTM

LECTURER'S NAME: DR AZURAH BINTI ASAMAH

NAME	MATRIX NUMBER
CHONG LI LING	A19EC0037
CHONG HONG LEI	A19EC0035
KOH XIN YI	A19EC0064
LEE HUI ZHONG	A19EC0067

CONTENTS

No.	Contents	Page
1.	Introduction	3
2.	Focus on Topic <ul style="list-style-type: none">• Data Collection• Problem statement	4-7
3.	Support on Topic <ul style="list-style-type: none">• Data Analysis• Literature Review	8-18
4.	Conclusion	19
5	Bibliography	20

INTRODUCTION

The relationship between human and environment are inseparable. Human needs air, food and water to survive and all of these comes from the environment. However, nowadays, there are a lot of environmental issues such as garbage accumulation and air pollution occur in UTM. It can be observed that some irresponsible students litter anywhere and the trash bins always full of rubbish, these situations increase the growth rate of bacteria and the breeding rate of pests. The accumulation of garbage also affects the air freshness, the stink makes people around the area feel uncomfortable. The use of plastic is harmful to the earth, UTM has started to replace straw, polystyrene and plastic bags with earth-friendly products. The global warming also affects the temperature of UTM environment, the weather is hot most of the time, students are sweating when they walk around UTM.

Hence, our group which consists of four members named Chong Li Ling, Chong Hong Lei, Koh Xin Yi and Lee Hui Zhong decided to conduct a study with the title of 'Environmental Issue and Control in UTM'. The objective of the study is to investigate the factor of the environmental issue and the awareness of student in UTM about this issue. We desire the data we collected can bring us a clear explanation of the level of seriousness of environmental issue so that more people would pay attention to it. Besides, we will also identify the awareness of student about the environmental issue to know better about student behaviour related to the environment and the degree of concern to the environment of the student in UTM. Other than that, we also observe the effectiveness of the solutions carried on to these issues.

FOCUS ON TOPIC

Data Collection

Before starting this project, our group had discussed and decided to use survey for our data collection. Google Form was the platform we used to conduct the survey about our topic and collect data from the respondents. For this project, our target group were UTM students who stay in the residential college prepared by the university as the respondents of different backgrounds for our survey. After creating the questionnaire about our topic, we had spreaded the Google Form URL through Whatsapp Group. In a short amount of time, data and responses were collected by using Google Form. This process of data collection saved us a lot of time. Our Google Form was closed when the number of respondents achieved 67 respondents as the target number of the respondents was at least 60 respondents.

In the questionnaire, we had mentioned that this survey form was created by our group for Probability and Statistical Data Analysis project. The objectives for our project were also be stated in the description of our Google Form. There are no private questions asked for and all the information filled by the respondents are only for project conducting purpose because it was confidential. We felt thankful and their responses were greatly appreciated for our project.

Problem Statement

The topic of our project is “Environmental Issue and Control in UTM”, so the title of our survey was also the same. This survey was prepared with bilingual for the respondents’ convenience. Our survey was conducted to investigate the concern of UTM students about the environmental issues and controls in University Technology Malaysia (UTM). We have come up with eleven questions for the respondents to answer when they are answering the survey. Hence, the respondents were just required to spend a few minutes to fill in the form and submit it.

The below shows the sample questions.

Environmental Issue and Control in UTM / Isu dan Kawalan Alam Sekitar di UTM

Greetings! This form has been created by first year students of Graphics and Multimedia Software (SECV) to complete the assignment of Probability and Statistical Data Analysis (SECI2143).

The purpose of this survey is to investigate the concern of UTM students about the environmental issues and controls in University Technology Malaysia (UTM).

Please help us answer the following questions and your response is greatly appreciated. Thank you. Your response is confidential so you do not worry about that.

Selamat sejahtera! Borang soal selidik ini telah dibuat oleh mahasiswa tahun pertama daripada Perisian Grafik dan Multimedia (SECV) untuk menyelesaikan tugas Kebarangkalian Statistik dan Analisis Data (SECI2143). Matlamat bagi soal selidik ini adalah untuk mengkaji adakah mahasiswa UTM memberikan perhatian tentang isu dan kawalan alam sekitar di Universiti Teknologi Malaysia (UTM). Sila anda menjawab soalan berikut dan respon anda sangat dihargai. Terima kasih. Respon anda adalah sulit maka anda tidak perlu berasa risau.

Gender / Jantina *

- Male / Lelaki
- Female / Perempuan

Age / Umur *

Short-answer text

Residential College / Kolej Kediaman *

- KTF
- KTDI
- KP
- KTHO
- K9 & K10
- KTC
- KTR
- KRP

Other...

How do you think about the cleanliness of your residential college? / Bagaimanakah anda rasa tentang kebersihan kolej kediaman anda? *

1 2 3 4 5

Very Dirty / Sangat Kotor Very Clean / Sangat Bersih

Number of bins in your residential block: / Bilangan tong sampah di blok kediaman anda: *

Short-answer text

How frequently for the cleaner cleans the bins in your residential college in a week? / Berapa kaliakah pembersih datang untuk membersihkan tong sampah di kolej kediaman anda? *

Short-answer text

How many articles or news have you seen in UTM about environmental issues? / Berapakah artikel dan berita yang berkaitan dengan isu dan kawalan alam sekitar di UTM?

Short-answer text

How do you think about the seriousness of the environmental issues in UTM included your studying environment? / Bagaimanakah anda rasa tentang keseriusan isu alam sekitar di UTM termasuklah persekitaran anda untuk belajar? *

1 2 3 4

Not very serious / Tidak sangat serius Very serious / Sangat serius

On a scale of 1-10, please rate how the environmental pollution in UTM affects your personal health and safety. / Dalam skala 1-10, sila anda berikan kadar tentang pencemaran alam sekitar di UTM mempengaruhi kesihatan dan keselamatan anda. *

1 2 3 4 5 6 7 8 9 10

Least / Paling sedikit Most / Paling banyak

Do you agree that "Zero Waste" is carried out in UTM? / Setujukah anda tentang "Zero Waste" dilaksanakan di UTM? *

1 2 3 4 5

Strongly disagree / Sangat tidak setuju

Strongly agree / Sangat setuju

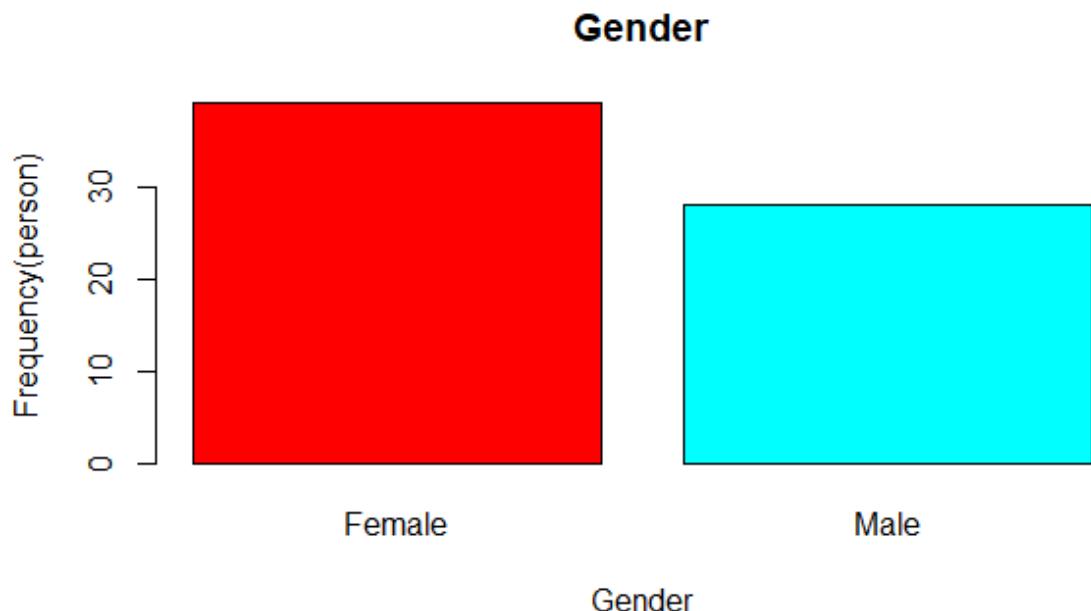
If no, please state the reason. / Kalau tidak, sila berikan alasan anda. *

Long-answer text

The first question is to know the gender of the respondents while the second question allows us to know the age of the respondents. The third question serves the purpose of letting us to know the residential college of the respondents. These three question are asked to collect the demography of the respondents. After that, we asked for the concern of the respondents about environmental issues and control in UTM. Next question help us to know the cleanliness of the respondents' residential college as they think. Apart from that, we ask for the number of bins in the respondents' residential college and also the frequency of the cleaner to clean the bins for a week. Besides, the question is asked to know the articles or news that the respondents have seen in UTM about environmental issues. Next question help us to know the seriousness of environmental issues in UTM included their studying environment as the respondents think. Then, the respondents are asked to rate how the environmental pollution in UTM affects their personal health and safety on a scale of 1 to 10. Finally, we ask for the purposes that the respondents agree "Zero Waste" Campaign was carried out in UTM or not. The respondents who disagree this campaign are asked to give a reason about that.

SUPPORT ON TOPIC

Data Analysis

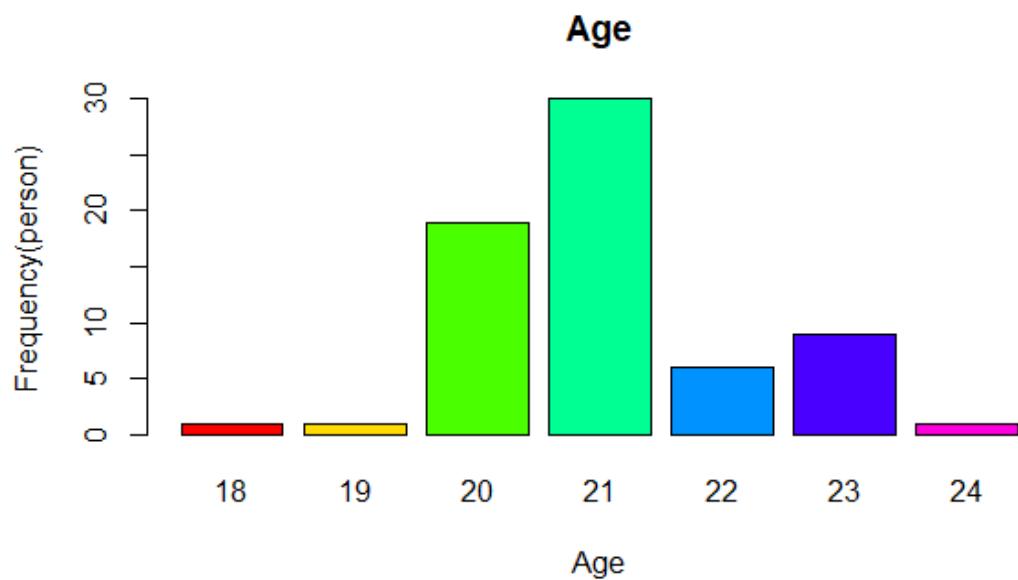


Gender of respondents: Female (39) have more numbers than male (28).

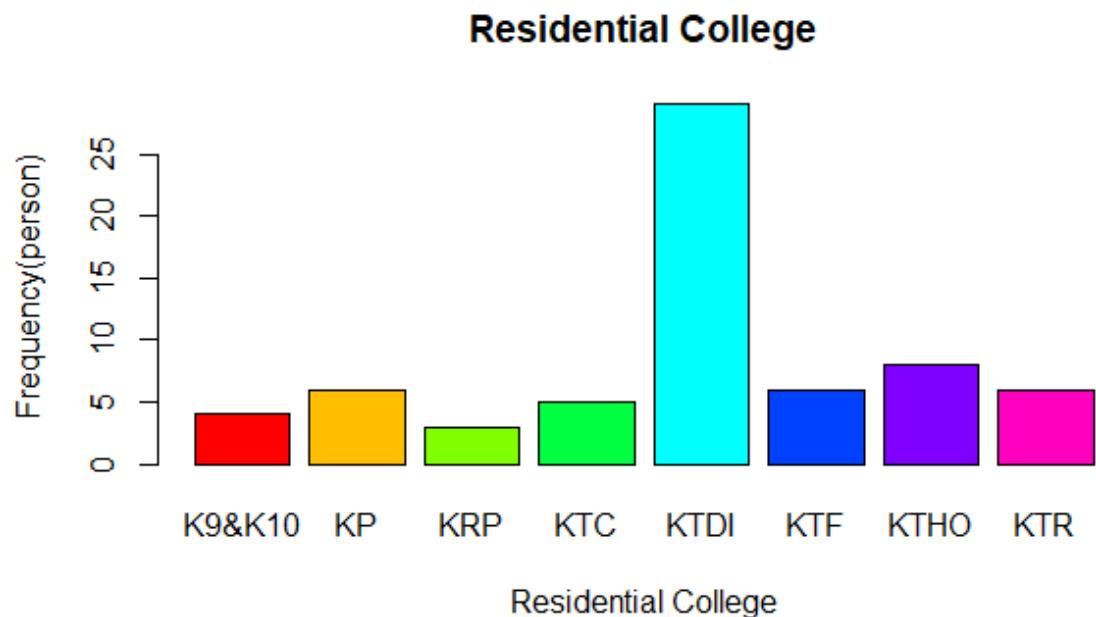
Age

18		0
19		0
20		000000000000000000000000
21		00000000000000000000000000000000
22		000000
23		0000000000
24		0

Key point: 18 | 0 means 18.0

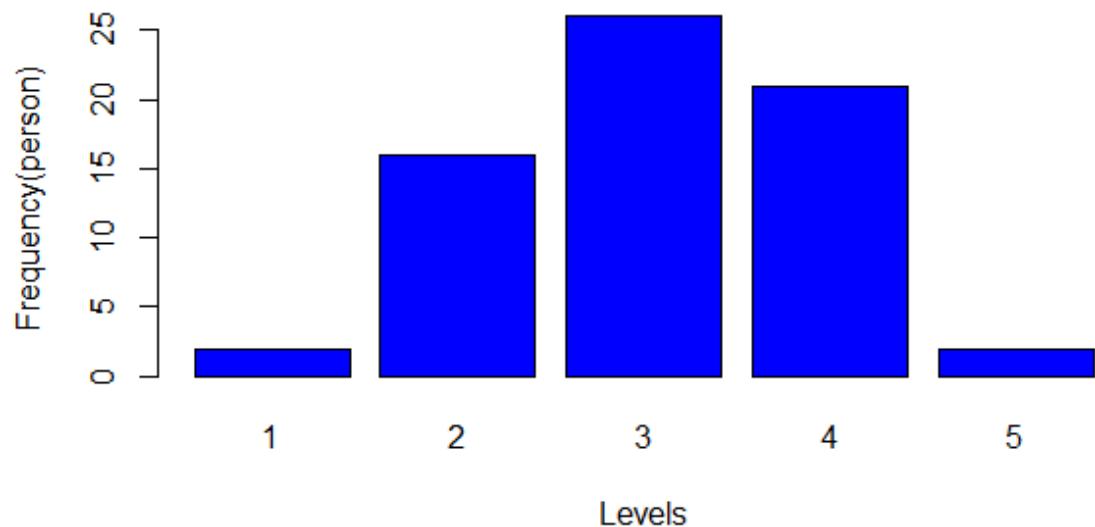


Age of respondents: Most of the respondents (30) are 21 years old while least of the respondents (1) are 18, 19 and 24 years old.



Residential College of respondents: KTDI (29) is the residential college which has the greatest number while KRP (3) is the residential college which has the least number.

Cleanliness of Residential College



Level 1-Very Dirty Level 2-Dirty Level 3-Moderate

Level 4-CleanLevel 5-Very Clean

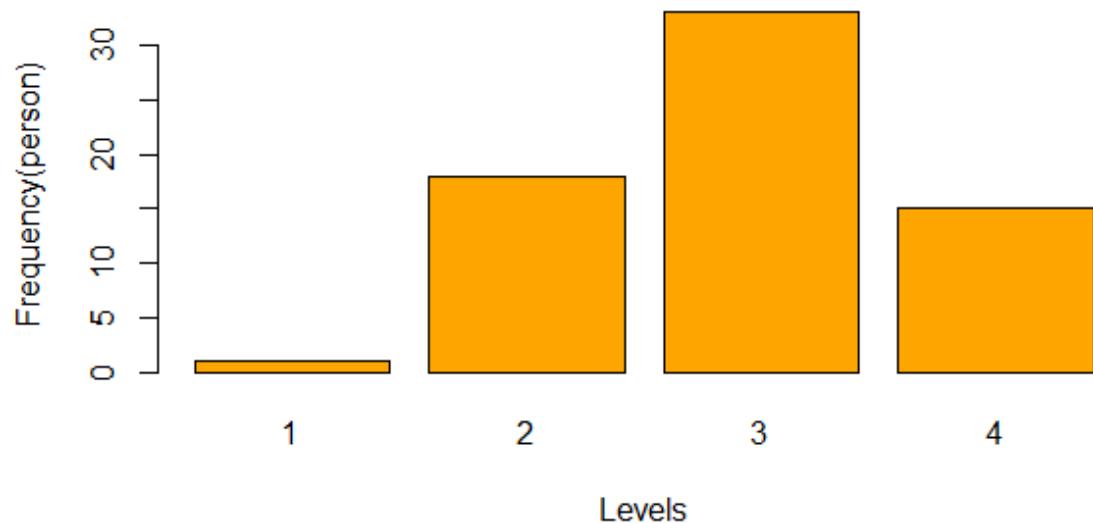
Cleanliness of Residential College: Most of the respondents (26) thinks that the cleanliness of their residential colleges are in moderate level which is level 3. Level 1 which is very dirty and 5 which is very clean have the least number of the respondents (2).

Mode: 1 and 5

Mean: 3.07

Median: 3

Seriousness of Environmental Issues in UTM



Level 1-Not Very Serious Level 2-Moderate

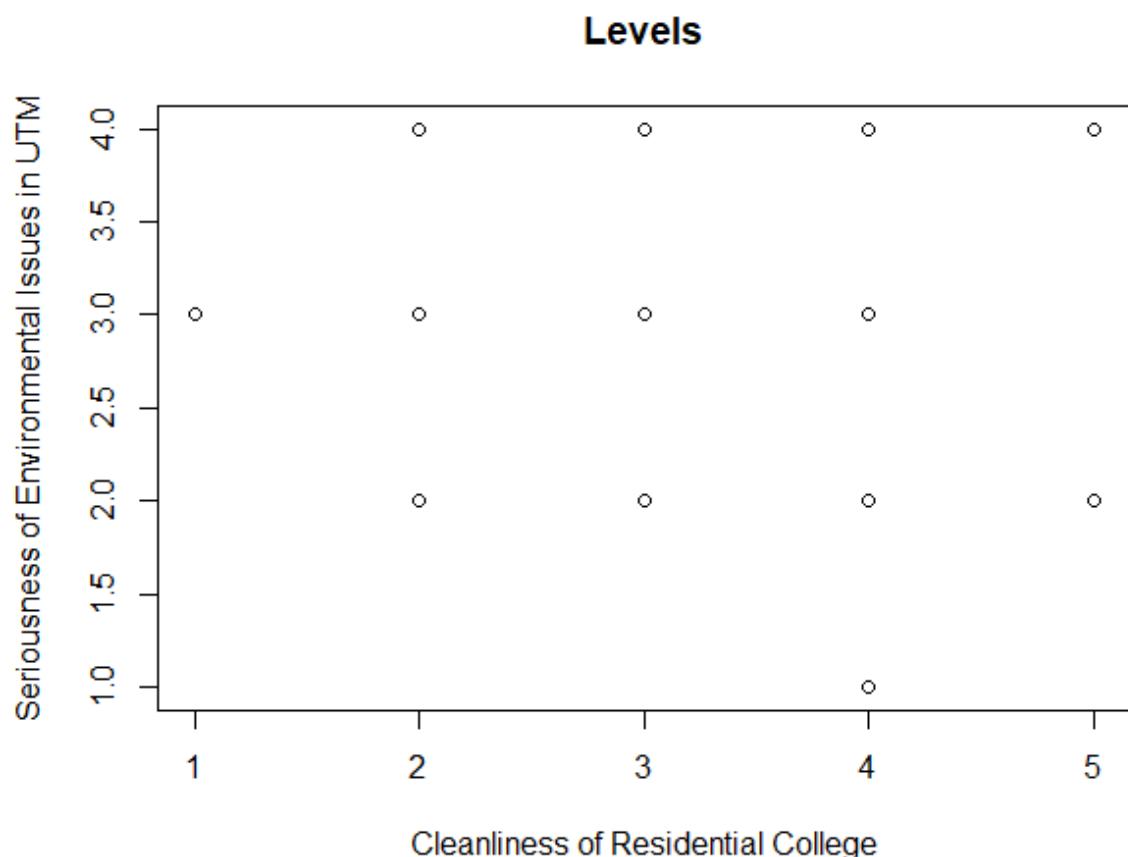
Level 3-Serious Level 4-Very Serious

Seriousness of Environmental Issues in UTM: Majority of the respondents (33) thinks that the environmental issues in UTM are in serious level which is level 3. Minority of the respondents (1) thinks that the environmental issues in UTM are not very serious which is level 1.

Mode: 3

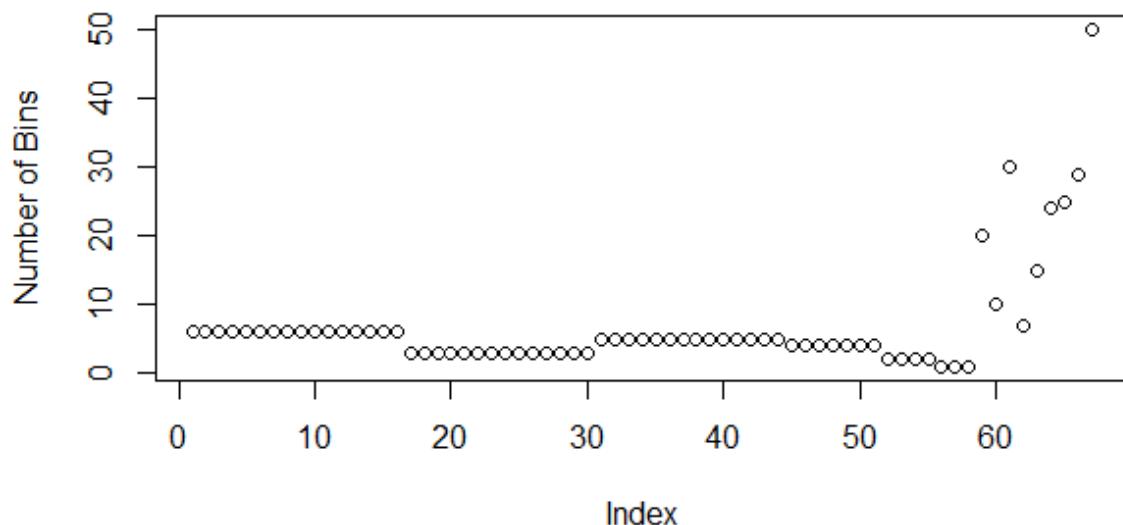
Mean: 2.93

Median: 3

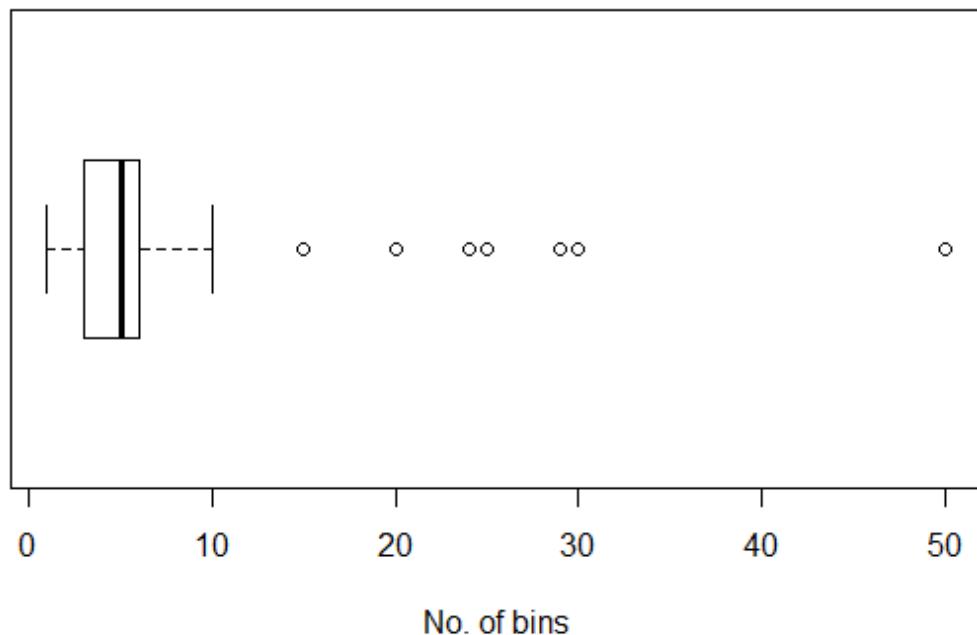


From the scatterplot above, the cleanliness of residential college has a relationship between the seriousness of environmental issues in UTM. A few of respondents state that their residential colleges are very dirty and the environmental issues are serious in UTM. Majority of the respondents state that their residential colleges are in dirty or moderate level, so the environmental issues in UTM are in moderate, serious and very serious level. There are also some respondents state that their residential colleges are clean but they have their different opinions about the seriousness of environmental issues in UTM. A few of respondents state that the cleanliness of residential colleges are very clean but they think that the environmental issues in UTM are in moderate and very serious level.

Number of Bins in Residential College



Number of bins in residential college



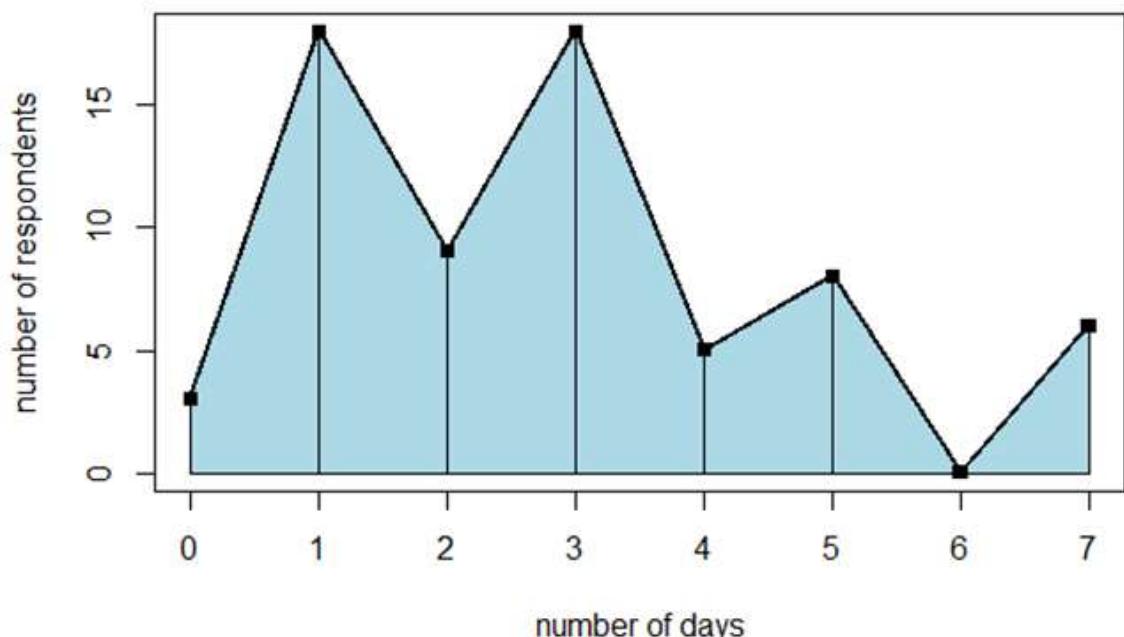
Number of Bins in Residential College: There are 6 bins prepared in most of the residential blocks as it has the greatest number of respondents (16). This is enough for the residents in the residential block to throw waste and prevent rubbish scattered around there. There are some outliers above the upper limit which is 10 such as 15, 20, 24, 25, 29, 30 and 50 bins because they filled in the number of bins prepared for their whole residential college.

Mode: 6

Mean: 6.82

Median: 5

frequency for cleaner cleans the bins in residential college



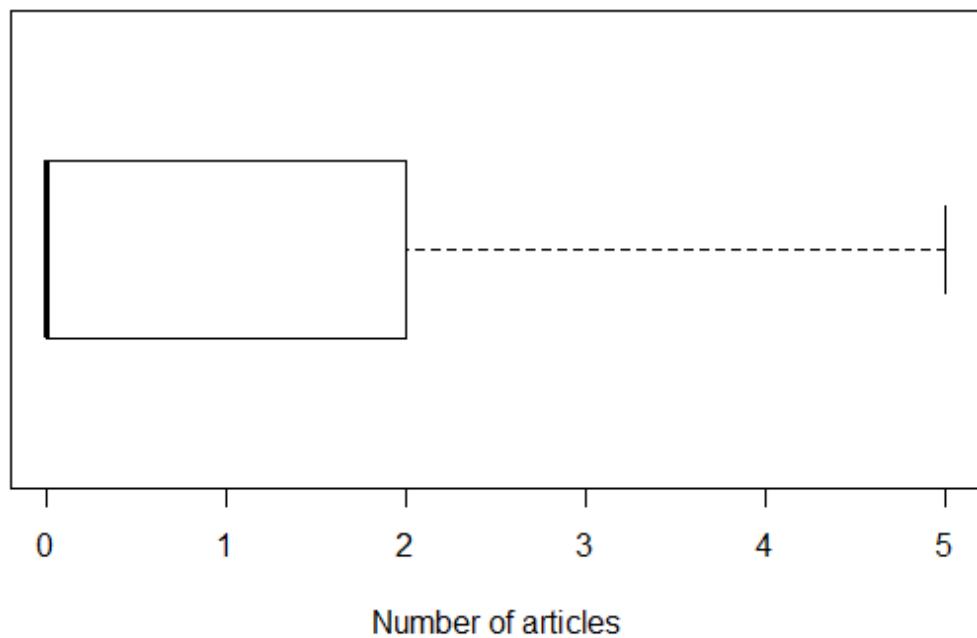
Frequency for Cleaner Cleans the Bins in Residential College: In a week, most of the cleaners come to the residential college to clean the bins for 1 or 3 days as they have the greatest number of the respondents (17). There are more respondents (7) feel satisfied about the cleaner cleans the bins for every day than the respondents (4) feel disappointed about the cleaner does not come to clean the bins in a week.

Mode: 1 and 3

Mean: 2.60

Median: 3

Number of articles or news in UTM



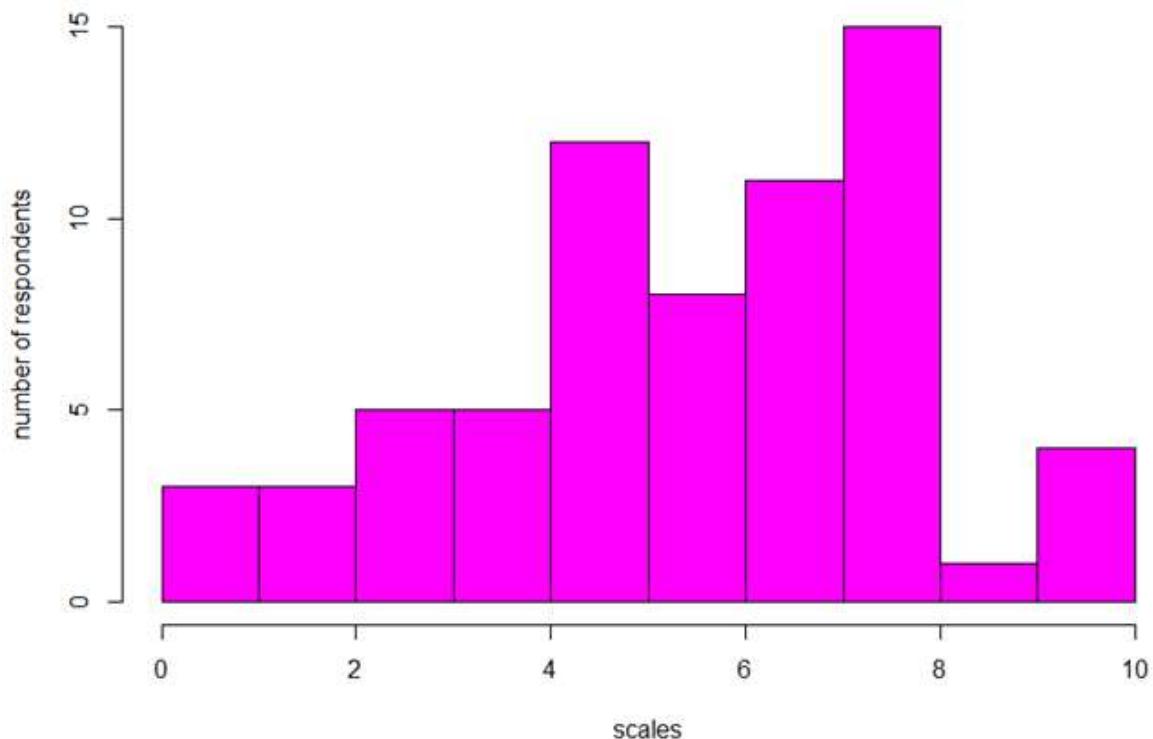
Number of Articles or News in UTM: Majority of the respondents (34) does not see any articles or news in UTM even though there are some respondents who are third year or fourth year students. Therefore, the awareness of UTM students about the environmental issues are less to be raised and cause the environmental issues happened.

Mode: 0

Mean: 1.39

Median: 1

Rating of environmental pollution affect personal health and safety



Scale 1-Least Scale 10-Most

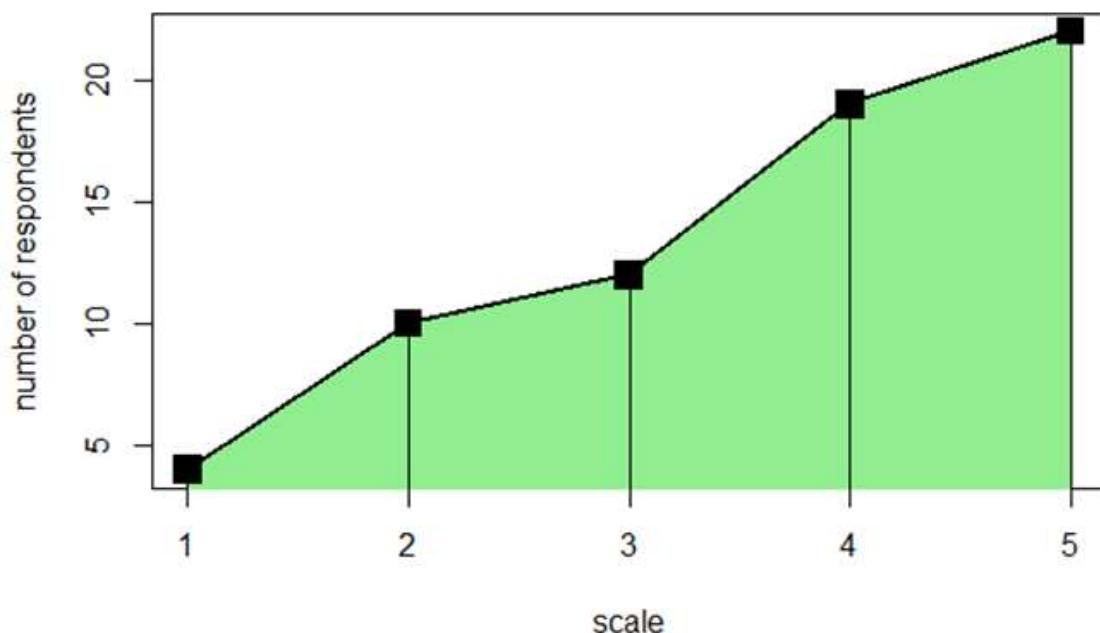
Rating of Environmental Pollution affect Personal Health and Safety: Scale 8 has the greatest number of the respondents (15) which is said that the environmental pollution in UTM affects them a lot when they stay in their residential college and study in their faculty. This result also agree that the environmental issues are happened seriously in UTM.

Mode: 8

Mean: 5.94

Median: 6

Agreement of Zero Waste carried out in UTM



Scale 1-Strongly Disagree Scale 2-Disagree Scale 3-Moderate

Scale 4-Agree Scale 5-Strongly Agree

Agreement of Zero Waste carried out in UTM: Even though only a few of them know that Zero Waste is already carried out in UTM, most of the respondents (22) are also strongly agree that UTM continues to carry out this campaign to keep the environment clean. They hope that Zero Waste can reduce rubbish and thus protect our environment. This will help to save the earth. Some respondents are disagree that Zero Waste is carried out in UTM because they think that Zero Waste is troublesome. The number of bins in their faculty are reduced and causing many rubbish scattered on the floor. They are also required to bring back their own rubbish but the bins in residential college are always full although the number of bins are said to be enough for their residential college.

Mode: 5

Mean: 3.67

Median: 4

Literature Review

University Technology Malaysia (UTM) is one of the famous government universities in Malaysia. It is same with other universities which have prepared the residential colleges and studying environments for UTM students. Every first year student is required to stay in UTM although living near. Thus, our group has conducted a survey to examine the environmental issue and control in UTM. According to the study by Department of Real Estate, Faculty of Built Environment and Surveying, UTM, Zero Waste Concept is an effective alternative to the management of solid waste that has been implemented in several developed countries to achieve sustainable development. This concept is applied in UTM to reduce solid waste generation that can minimize the depletion of natural resources, which in the meantime, to utilizing landfills as the last option in solid waste management. In this study, there are four main challenges in the implementation of Zero Waste. Apart from enforcement aspect, management aspect and financial aspect, behavior of society is one of the most important challenges to ensure every student in UTM has the mind-set of the society to aware that the importance of this zero waste concept to themselves is still poor. Malaysians not only students prefer to work for something that can benefit them directly as incentives of their collaboration for solid waste separation. If incentives are not provided, their cooperation is far to achieved and will further delay the success of the zero waste concept. The role of residential colleges should be considered very important to provide the cleanliness environment in residential colleges and the studying environment.



Figure 1 and 2: Banners of Zero Waste in UTM

CONCLUSION

As a conclusion, we found out that the environmental issue in UTM is quite poor according to the study taken by our group member. There are several issues regarding the cleanliness such as in the classrooms and residential colleges while many of the students gave bad reviews in the survey form. As an example, there are many garbage being littered by those irresponsible students on the floor of the classrooms in the faculty. The trash cans in the residential college are always full with rubbish as the cleaner is not collecting them every day. There are still many environmental issues although “Zero Waste” is carried out in UTM. “Zero Waste” is a program to reduce the amount of rubbish created by banning the usage of plastics in the food stalls. Based on our study, majority of the respondents think that the program needs to be improved so that the program can be carried out more effectively to reduce and solve the environmental issues in UTM. Other than that, some of them think that the awareness among the students is still low. Many students are not taking it serious by littering rubbish on the floor and use a lot of plastic to pack food or during buy things. Based on some studies taken, general environment issues in the world are caused by the lack of awareness and concern among the human. The behaviors and attitudes of the human beings are very important. We should take a role in conserving our mother nature. All of the students and staff should be more concerned about the environmental issues of the surrounding in UTM as this is our responsibility to protect our environment.

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