

Environmental Systems and Societies

Internal Assessment

May 2021

Topic	Human Systems and Resource Use
Big Question	E - How are the issues addressed in this topic relevant to sustainability or sustainable development?
Research Question	What relationship does the household income have with the lifestyle choices and environmental awareness of an individual in Singapore, affecting their individual environmental impact?
Significant Ideas	8.4: Human Carrying Capacity is Difficult to quantify 8.4: The ecological footprint (EF) is a model that makes it possible to determine whether human populations are living within carrying capacity
Issue	Environmental Impact and Ecological Footprint

Word Count: 2248

Table of Contents

Criteria A - Identifying the context	3
Research Question	4
Criteria B – Planning	4
Hypothesis	4
Procedure	5
Justification of the sampling strategy and type of questions	9
Risk Assessment	10
Criteria C - Results, Analysis and Conclusion	11
Survey Results – Data Summary	11
Analysis	14
<i>Electricity Consumption</i>	14
<i>Gas Consumption</i>	16
<i>Water consumption</i>	17
<i>Diet</i>	18
<i>Expenditure on Car fuel each month</i>	19
<i>Travel Patterns</i>	20
Final Results and Conclusion	21
Criteria D - Discussion and Evaluation	22
Criteria E - Applications	23
Appendix	25

Criteria A - Identifying the context

Since the period of industrialisation, there has been a rapid increase in the consumption of fossil fuels and carbon emissions. From 1900 to 2010, there was approximately a 90% increase in the global carbon emissions due to fossil fuels which contributes to around 78% of the total greenhouse gas emissions¹. The rapid resource use, depletion and exploitation has been a pressure on the carrying capacity, or the maximum number of species that an area can support, in various parts of the world.

Singapore is a highly developed nation in South Asia. Being a small island nation of 725.7sq. km² with a population of over 5.7 million³, there is a huge pressure on the country's carrying capacity, leading to a high Ecological Footprint. Its Ecological Footprint per capita is 5.9 global hectares, ranking it 23rd in the world and it has the highest biocapacity deficit of 9,950%⁴. The generally high Ecological Footprint may however differ at an individual level. Knowing these differences will enable policy makers to better understand how they can reduce stress on local resources and the local environment.

Hence, I decided to investigate how different components of the Ecological Footprint may vary with household income, in Singapore.

¹ United States Environmental Protection Agency. (n.d.). *Global Greenhouse Gas Emissions Data*. Retrieved May 19, 2020, from United States Environmental Protection Agency: <https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>

² Data.gov.sg. (n.d.). *Total Land Area of Singapore*. Retrieved May 19, 2020, from Data.gov.sg: <https://data.gov.sg/dataset/total-land-area-of-singapore>

³ Singapore Department of Statistics. (n.d.). *Population and Population Structure*. Retrieved May 19, 2020, from Singapore Department of Statistics: <https://www.singstat.gov.sg/find-data/search-by-theme/population/population-and-population-structure/latest-data>

⁴ Global Footprint Network. (n.d.). *Open Data Platform*. Retrieved May 19, 2020, from Global Footprint Network: <https://data.footprintnetwork.org/#/>

Research Question

What relationship does the household income have with the lifestyle choices and environmental awareness of an individual in Singapore, affecting their individual environmental impact?

In order to evaluate the individual impacts, data on different factors that affect the value of the Ecological Footprint including electricity, water, and gas consumption, diet choices, car use, and travel patterns, will be collected.

Criteria B – Planning**Hypothesis**

Higher income households are more likely to have a larger environmental impact as they consume relatively more resources than lower income households. This hypothesis is based on the fact that people with higher incomes have a higher propensity to consume, and tend to live a life with higher consumption and higher living standards. This translates to a greater energy consumption and a higher environmental impact.

Therefore, each of the components to be measured – Electricity Consumption, Gas Consumption, Water Consumption, Dietary choices, Usage of car – monthly expenditure on fuel, Frequency of overseas travel would increase with incomes.

Variable:

<u>Variable</u>		<u>Units</u>	<u>Range</u>
<u>Independent Variable</u>	People segregated by income groups (Monthly household income)	Singapore Dollars (S\$)	1. Group A: <S\$5000 2. Group B: S\$5000-S\$11000 3. Group C: >S\$11000
<u>Dependent Variable</u>	Energy consumption affected by: <ul style="list-style-type: none"> - Electricity consumption - Gas Consumption - Water Consumption - Dietary choices - Monthly expenditure on car fuel - Frequency of overseas travel 	<ul style="list-style-type: none"> - kWh - kWh - CuM - S\$ 	
<u>Control Variable</u>	The respondents were limited to residents of Singapore		

Procedure

1. Derive relevant income bracket range using national income statistics (from Singstat.gov.sg)⁵ to categorise subjects into the lower, middle, and higher income range.
2. Derive relevant energy, water and gas consumption ranges by studying past national consumption patterns⁶ to estimate a maximum, minimum and median range for the study.
3. Prepare a survey that gathers the required information by income brackets using Google Forms.

⁵ Singapore Department of Statistics. (2020). *Key Household Income Trends, 2019*. Retrieved August 9, 2020, from <https://www.singstat.gov.sg/-/media/files/publications/households/pp-s26.pdf>

⁶ Singapore Power Ltd. (n.d.). *Billing*. Retrieved August 9, 2020, from SP Group: <https://www.spgroup.com.sg/what-we-do/billing>

Create a mandarin version of this survey to reach out to non-English speaking population⁷.

4. Circulate the Google form on online mediums like WhatsApp and emails to randomly selected people in Singapore, irrespective of race, religion, and culture, to ensure a fair research.

Survey Questions:

Environmental Value Systems

Thank you very much for taking part in my survey. All the data collected in this survey is only for educational purposes will remain confidential.

* Required

Section 1 extracts background information and independent variables

How many people are in your household? (Aged 16 and above)*

Your answer

Questions marked required – ensures respondents provide all the necessary information

In what range is your monthly household income? *

- Less than \$5000
- Between \$5000 and \$11000
- More than \$11000

⁷ Appendix A – Mandarin version of the survey

Environmental Value Systems

* Required

Section 2 –
collects dependent
variables,
hypothesis
specific data

Consumption Patterns

For the first 3 questions, please refer to your Utilities bill for the past 6 months of 2020

What was your average electricity consumption for the past 6 months? (kWh) *

Please refer to your utilities bill to answer this question.

- Less than 200 kWh
- 201 kWh to 400 kWh
- 401 kWh to 600 kWh
- Greater than 600 kWh

What was your average gas consumption for the past 6 months? (kWh) *

Please refer to your utilities bill to answer this question.

- Less than 50 kWh
- 50 kWh to 100 kWh
- 100 kWh to 150 kWh
- More than 150 kWh

What was your average water consumption for the past 6 months? (CuM) *

Please refer to your utilities bill to answer this question.

- Less than 10 CuM
- 10 CuM to 20 Cum
- 20 CuM to 30 CuM
- More than 30 CuM

What does your diet primarily comprise of? *

- Vegan
- Vegetarian
- Meat in some meals of the day
- Meat is every meal of the day

What are the reasons for your dietary choices? *

- Health
- Trend
- Culture
- Environment
- Other: _____

Question allowed multiple responses to analyse the responses effectively

If you own a car, on an average, how much do you spend on gas/fuel each month? *

Your answer _____

Question left open-ended due to the unavailability of consumption ranges

How often do you travel by flight annually? *

- I mostly don't at all
- A few times within South East Asia
- A few times out of South East Asia
- Several flights outside South East Asia

After data collection (Processing Survey Results):

- Collate the results by income brackets⁸ and divide the water, gas, and electricity consumption by the number of people in the household to derive per person usage. Segregate this into relevant ranges of consumption.

Number of people in the household	Monthly Household Income	Average monthly gas consumption (kWh)	Average per person monthly gas consumption (kWh)
4	Between \$5000 and \$11000	50 kWh to 100 kWh	12.5 kWh - 25 kWh
4	Between \$5000 and \$11000	Less than 50 kWh	<12.5 kWh
4	Between \$5000 and \$11000	100 kWh to 150 kWh	25 kWh - 37.5 kWh
3	Between \$5000 and \$11000	50 kWh to 100 kWh	16.67-33.33
3	Between \$5000 and \$11000	100 kWh to 150 kWh	33.33-50
4	Between \$5000 and \$11000	Less than 50 kWh	<12.5
2	Between \$5000 and \$11000	50 kWh to 100 kWh	25-50

Colour coding to segregate data into different ranges to enable tallying

Image 1: Snapshot of calculating the average per person gas consumption

- Plot the data for each – consumption of water, electricity, and gas – on pie charts by income groups to easily compare and see if any observable correlation can be formed between income and consumption.
- Analyse trends in diet choices between income groups.
- Analyse trends in average monthly expenditure on fuel between income groups.
- Analyse trends in frequency of overseas travel between income groups.

Justification of the sampling strategy and type of questions

Stratified random sampling was used to ensure no sampling biases affect the data collected for each income group within the Singapore population.

The use of multiple-choice questions for electricity, gas, and water consumption makes it

⁸ Appendix B – Collated Survey Results

easier for the respondents to answer. Furthermore, the collation and comparison of data becomes more efficient.

However, with regard to the expenditure on car fuels, national average consumption data was not available. Therefore, that question required the respondent to key in their estimated average expenditure.

Risk Assessment

Safety Concerns

To ensure my and others' safety during COVID-19, I will circulate the surveys online only, adhering to guidelines.

Ethical Concerns

As I will be asking people for their incomes, I will ensure that the questions are framed in a way that they are not offensive. The survey will be anonymous, and results will be kept confidential and not disclosed to anyone other than those concerned with the research.

Environmental Concerns

As the survey will be distributed online, no paper is wasted in the process. No other environmental issues directly affecting living organisms will be involved in this research.

Criteria C - Results, Analysis and Conclusion**Survey Results – Data Summary**Electricity Consumption Trends

	Numbers in each income group			Responses as a proportion of each income group		
	Income less than S\$5000 (Group A)	Income between S\$5000 and S\$11000 (Group B)	Income more than S\$11000 (Group C)	Income less than S\$5000 (Group A)	Income between S\$5000 and S\$11000 (Group B)	Income more than S\$11000 (Group C)
Less than 50 kWh	2	3	3	18.18	9.68	7.14
50 kWh to 100 kWh	4	16	11	36.36	51.61	26.19
100 kWh to 200 kWh	3	10	24	27.27	32.26	57.14
Greater than 200 kWh	2	2	4	18.18	6.45	9.52

Gas Consumption Trends

	Numbers in each income group			Responses as a proportion of each income group		
	Income less than S\$5000 (Group A)	Income between S\$5000 and S\$11000 (Group B)	Income more than S\$11000 (Group C)	Income less than S\$5000 (Group A)	Income between S\$5000 and S\$11000 (Group B)	Income more than S\$11000 (Group C)
Less than 25 kWh	8	17	13	72.73	54.84	30.95
25 kWh to 50 kWh	3	13	19	27.27	41.94	45.24
50 kWh to 75 kWh	0	1	9	0	3.23	21.43
Greater than 75 kWh	0	0	1	0	0	2.38

Water Consumption Trends

	Numbers in each income group			Responses as a proportion of each income group		
	Income less than S\$5000 (Group A)	Income between S\$5000 and S\$11000 (Group B)	Income more than S\$11000 (Group C)	Income less than S\$5000 (Group A)	Income between S\$5000 and S\$11000 (Group B)	Income more than S\$11000 (Group C)
Less than 2.5 CuM	2	3	1	27.27	6.45	2.38
2.5 CuM to 5 CuM	9	1	4	9.09	29.03	9.52
5 CuM to 7.5 CuM	11	6	10	54.55	35.48	23.81
Greater than 7.5 CuM	9	1	27	9.09	29.03	64.29

Dietary Choices

	Numbers in each income group			Responses as a proportion of each income group		
	Income less than S\$5000 (Group A)	Income between S\$5000 and S\$11000 (Group B)	Income more than S\$11000 (Group C)	Income less than S\$5000 (Group A)	Income between S\$5000 and S\$11000 (Group B)	Income more than S\$11000 (Group C)
Vegan	0	0	0	0	0	0
Vegetarian	10	3	21	0.32	0.27	0.50
Meat in some meals of the day	18	5	18	0.58	0.45	0.43
Meat in every meal of the day	3	3	3	0.10	0.27	0.07

Expenditure on car fuels – use of car

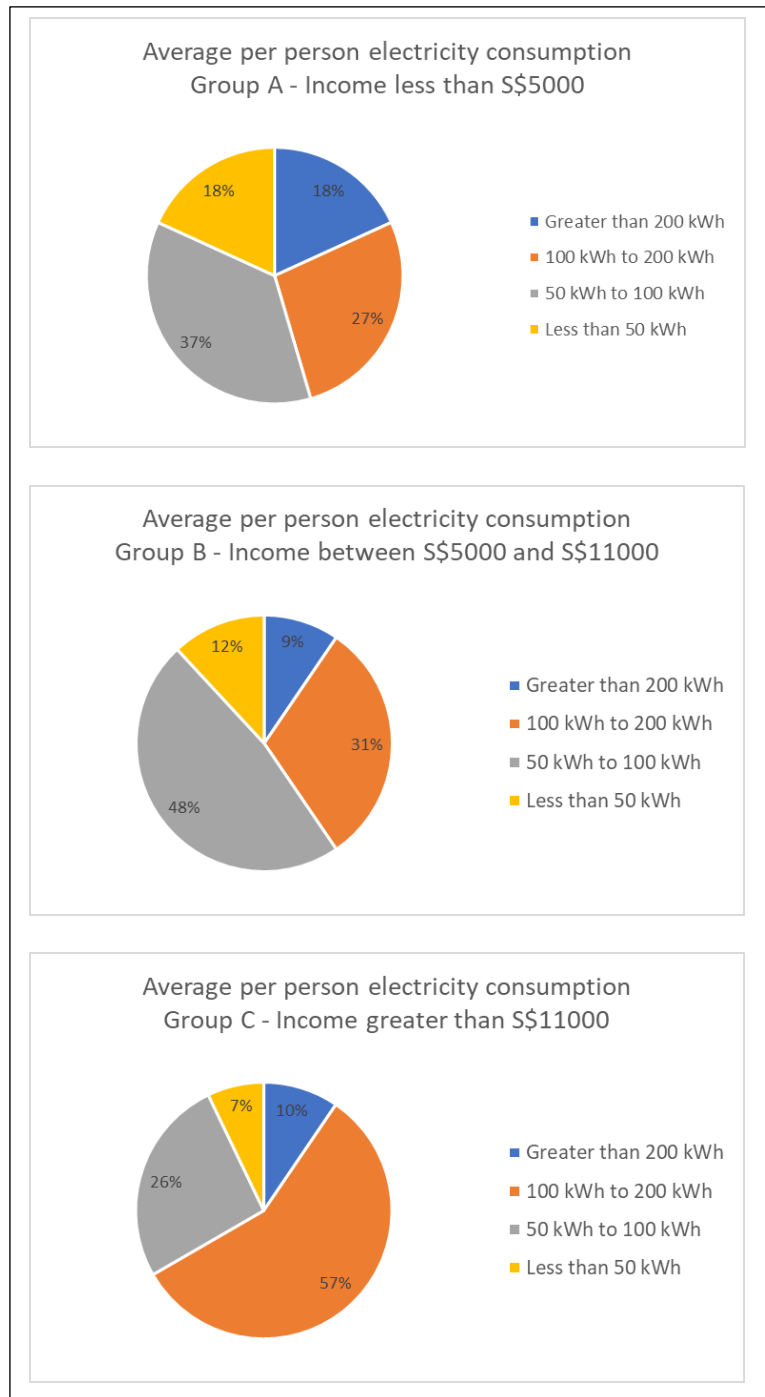
Car fuel expenditure patterns in each income group			
Monthly expenditure on car fuels	Income less than S\$5000 (Group A)	Income between S\$5000 and S\$11000 (Group B)	Income more than S\$11000 (Group C)
Maximum expenditure (S\$)	500	350	1000
Minimum expenditure (S\$)	0	0	0
Average expenditure (S\$)	190.91	75.48	189.76

Travel patterns

Frequency of travel	Numbers in each income group			Responses as a proportion of each income group		
	Income less than S\$5000 (Group A)	Income between S\$5000 and S\$11000 (Group B)	Income more than S\$11000 (Group C)	Income less than S\$5000 (Group A)	Income between S\$5000 and S\$11000 (Group B)	Income more than S\$11000 (Group C)
Hardly travel	6	7	5	54.55	22.58	11.90
Few times within Southeast Asia	4	17	27	36.36	54.84	64.29
Few times out of Southeast Asia	1	4	4	9.09	12.90	9.52
Several flights outside South East Asia	0	3	6	0	9.68	14.29

Analysis

Electricity Consumption



Graph 1: Monthly per person electricity consumption by income groups

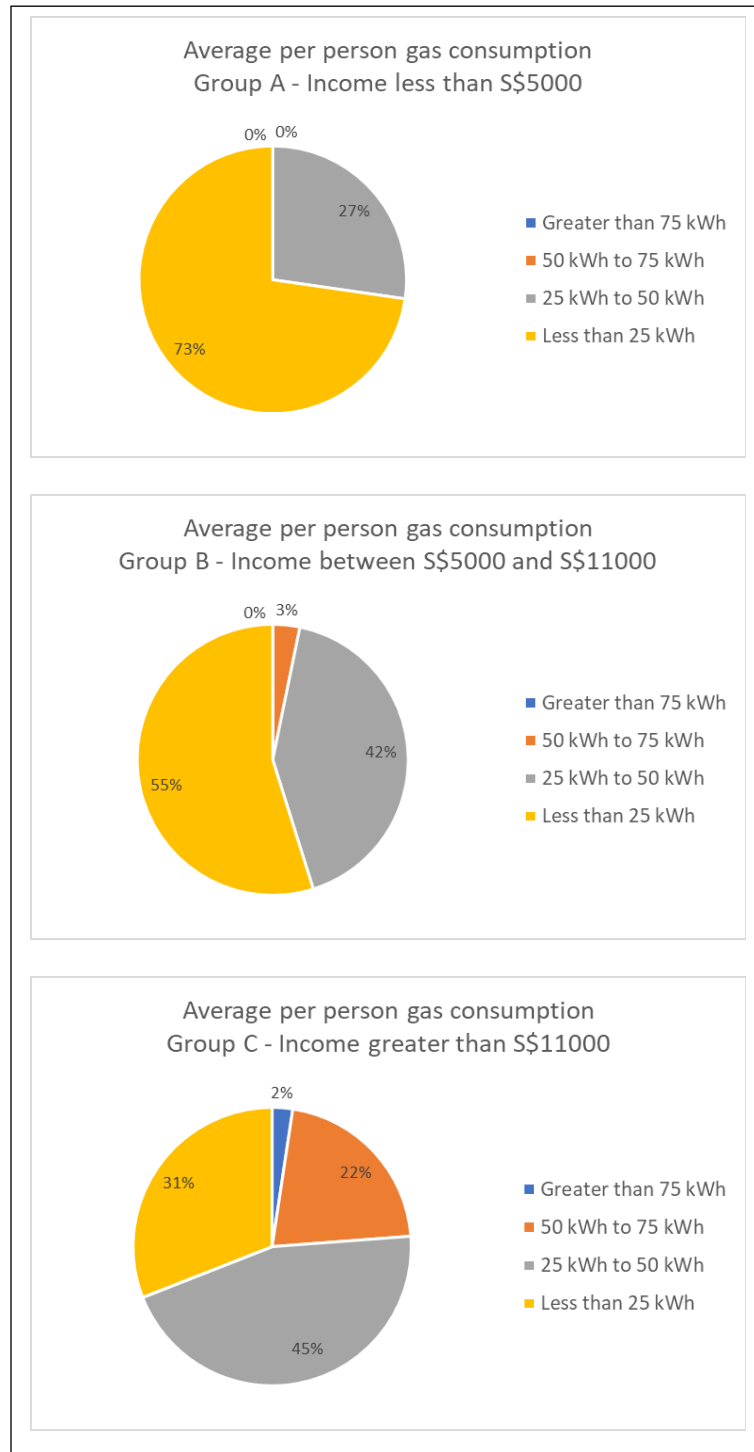
As seen in Graph 1, as income increases, a greater proportion of the survey respondents consumed over 100kWh of electricity. The highest proportion of people consuming less than 50kWh per person were found in the strata of household incomes less than \$5000 per month (Group A). This amounted to about 18.18% of the respondents earning less than \$5000. In the groups of household incomes between \$5000 and \$11000 (Group B), and more than \$11000 (Group C), this proportion was 11.9% and 4.9% respectively. Thus, an increasing trend can be seen.

Over 50% of the Group A respondents had an electricity consumption of less than 100kWh per person. A similar proportion was observed even in Group B, and a

much smaller proportion was seen in Group C. However, an anomaly was observed in the hypothesised trend as a larger proportion of people in Group A consume over 200kWh of electricity each month. This was an unexpected result.

However, the general trend is that lower the income, lower the per person consumption of electricity. Thus, this component of the ecological footprint is most likely to be low for low-income earners, and the hypothesis has been partially met.

Gas Consumption



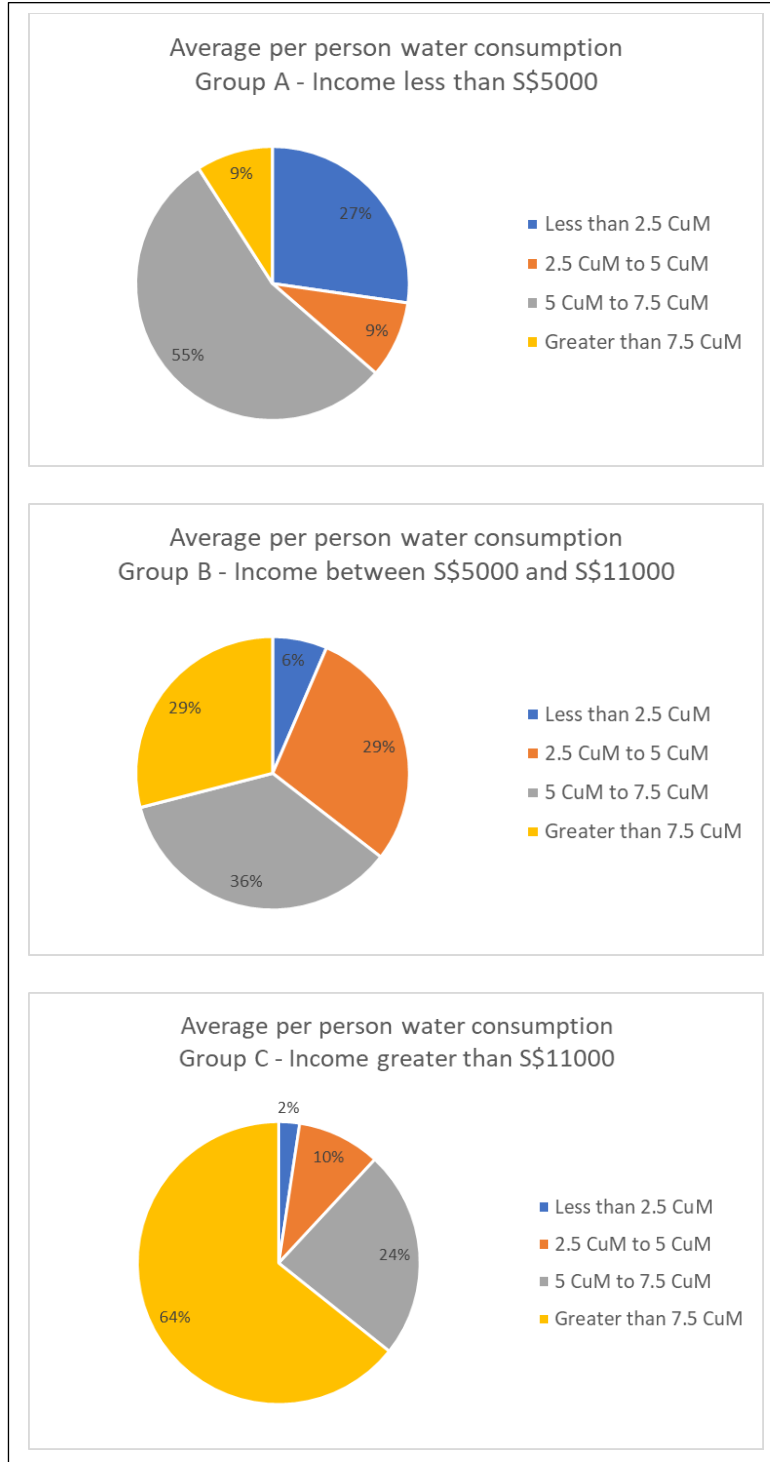
Graph 2: Monthly per person gas consumption by income groups

The gas consumption perfectly reflects the hypothesised relationship with income levels. In the case of Group, A respondents, over 72% indicated that their monthly consumption is less than 25kWh per person, and 0% consume 50kWh or more. However, in the case of Group B, 54.8% percent of the people (18% less than that of Group A) consume less than 25kWh per person each month, and over 41.9% and 3.2% consume 25kWh-50kWh and 50kWh-75kWh respectively. These values changed for Group C respondents with over 2.3% consuming greater than 75 kWh, over 21.4% consume between 50kWh and 75 kWh, 24% consume between 25 kWh and 50 kWh, and

just above 30% stated they consume less than 25 kWh. The observed trend is that the higher the income, the more the gas consumption. Thus, this component of the ecological footprint would be

higher for higher income earners. This therefore proves the hypothesis.

Water consumption



Graph 3 shows that the proportion of respondents in each income group consuming over 7.5CuM increases drastically from 9.09% in Group A to 29.03% in Group B, to 64.29% in Group C.

The highest proportion of respondents, 36.36%, consume less than 5CuM in the group earning below \$5000, followed by 35.5% and 11.9% in the case of incomes between \$5000 and \$11000, and more than \$11000 respectively.

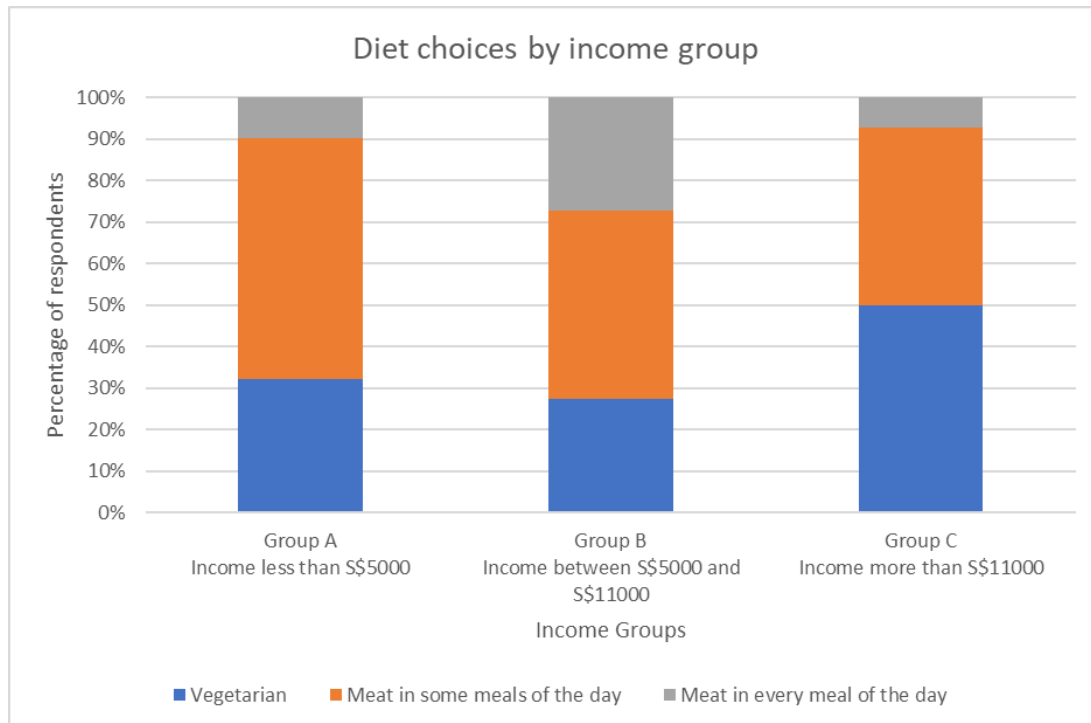
The group earning over \$11000 per month had the smallest proportion of people consuming below 2.5CuM and a greater proportion of people earning below \$5000 consumed less than 2.5CuM on water as compared to that of the

Graph 3: Monthly per person water consumption by income groups

group of respondents earning between \$5000 and \$1100.

Thus, in the case of consumption of water, the hypothesis that as incomes increase consumption of water would increase has been proven.

Diet



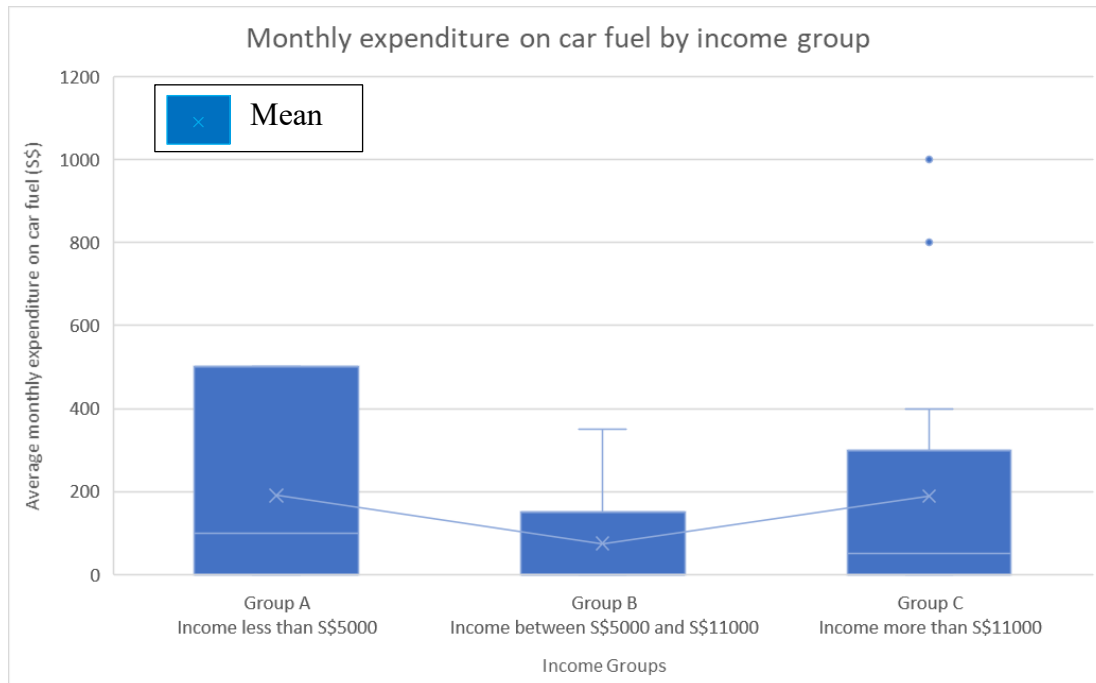
Graph 4: Patterns in diet by income groups

Graph 4 shows that there isn't a direct link that can be observed between type of diet and income levels. None of the respondents adopted a vegan diet, and majority of the people who stated they were vegetarians suggested that the reason for their choice was either health or culture/religion. The consumption of meat in every meal of the day was highest in Group B with over 27% of the respondents opting for it, translating to a higher environmental impact. The consumption of meat in every meal was lowest in Group C with around 7% of the respondents opting for it. Just 2 respondents from Group C indicated that their diet choice was made due to the

environment.

Thus, in this case the expected result hasn't been completely met as no direct link can be observed.

Expenditure on Car fuel each month



Graph 5: Monthly expenditure on fuel by income

No trend can be observed between average monthly expenditure on car fuel and income. The average monthly expenditure was \$190.91, \$75.48, \$189.76 for Group A, Group B, and Group C respectively. As hypothesised, Group C spends most on car fuel. However, unexpectedly the average monthly expenditure for Group A was more than that of Group B. This anomalous trend could be attributed to the number of people in the household. Majority of the survey respondents from income levels less than \$5000 had three or more members in the household, highest being six. This could be a possible reason for the large usage of cars in those families.

Thus, in the case of expenditure on car fuels, the hypothesis hasn't been completely met.

Travel Patterns



Graph 6: Travel Patterns by income groups

As observed in Graph 6, the proportion of people who mostly don't travel overseas is highest in Group A (55%) and this decreases to 22% and 12% in Groups B and C respectively.

Similarly, the proportion of people taking several flights outside South East Asia is 0% in the case of Group A and is 10% and 14% in Group B and Group C respectively.

Thus, it can be concluded that as incomes increase, frequency of overseas travel increases, thus increasing this component of the ecological footprint. Therefore, the hypothesis has been proven in this case.

Final Results and Conclusion

Variable	Trends observed	Hypothesis proved completely/partially/disproved
Electricity consumption	Mostly increases with income	Partially
Gas Consumption	Increases with income	Completely
Water Consumption	Increases with income	Completely
Dietary choices	No clear trend	Disproven
Usage of car	Mostly increases with income	Partially
Frequency of overseas travel	Increases with income	Completely

From the above results it can be seen that generally hypothesis has been proven, i.e., environmental impact of high-income earners in Singapore is larger than that of low-income earners. This could be attributed to their ability to spend more and their lifestyle choices.

Criteria D - Discussion and Evaluation

While I ensured to control factors that may lead to inaccurate results and minimise errors, there were a few challenges.

Firstly, the inability to conduct in-person surveys due to COVID-19 restrictions, made it difficult to reach out to the people from lower income groups. Thus, the number of respondents in each income group were not the same. This particularly affected the analysis of data for average monthly car fuel expenditure which was much higher for the lower income group.

This IA considered key variables that determine the environmental impact of an individual. However, Ecological Footprint is affected by various other factors like food miles of consumed food and the amount of waste. However, these variables are harder to quantify and difficult to analyse given the scope of the investigation. Therefore, the conclusions may not be completely representative of an actual scenario.

It was assumed that the ratio between the number of earning members and numbers of family members being supported in the incomes is equal across respondents, which might not be the case; for instance, a single person household earning S\$5000 and a four-person household earning the same cannot be compared.

A strength of my survey was that the questions were easy to comprehend and the survey was not too long. The data for electricity, water, and gas consumption was collected in ranges based on national averages. As the questions on average gas, water and electricity consumption required the respondents to estimate their average consumption in the past few months, there may have been a human error as they might have chosen inaccurate ranges. While I could have asked them to give their actual consumption for each month over six months, it would have made the survey longer, leading to fewer responses. Furthermore, there are slight variations in the cost per

unit for utilities for different service providers. This might have led to minute discrepancies in the data. In addition, given the fact that actual consumption values were not collected, there is a greater possibility of errors in the calculation of per person consumption. This could be addressed by segregating the options and responses in terms of people in the household and by giving each a different range for consumption.

Furthermore, this research, if had been conducted over a longer period of time, would have given rise to more accurate results.

Criteria E - Applications

Research such as this can be used for a multitude of things. By understanding the lifestyle patterns and environmental value systems of the different demographic sectors, policy making and implementation becomes easier.

Singapore has high income inequality with a Gini Coefficient of 0.452⁹. As there are significant differences in the income groups, there is also expected to be a difference in the consumption patterns and energy usage, thus contributing to different ecological footprints. Knowing this data will enable us to better understand the target audience for workshops that would educate the people on reducing individual impacts and working towards the environment. In fact, such research could also be expanded to analyse the varying trends between genders, age groups, professions, etc.

⁹ Singapore Department of Statistics. (2020). *Key Household Income Trends, 2019*. Retrieved September 20, 2020, from <https://www.singstat.gov.sg/-/media/files/publications/households/pp-s26.pdf>

References

Data.gov.sg. (n.d.). *Total Land Area of Singapore*. Retrieved May 19, 2020, from Data.gov.sg:

<https://data.gov.sg/dataset/total-land-area-of-singapore>

Global Footprint Network. (n.d.). *Open Data Platform*. Retrieved May 19, 2020, from Global

Footprint Network: <https://data.footprintnetwork.org/#/>

Singapore Department of Statistics. (2020). *Key Household Income Trends, 2019*. Retrieved

August 9, 2020, from [https://www.singstat.gov.sg/-](https://www.singstat.gov.sg/-/media/files/publications/households/pp-s26.pdf)

[/media/files/publications/households/pp-s26.pdf](https://www.singstat.gov.sg/-/media/files/publications/households/pp-s26.pdf)

Singapore Department of Statistics. (n.d.). *Population and Population Structure*. Retrieved May

19, 2020, from Singapore Department of Statistics: [https://www.singstat.gov.sg/find-](https://www.singstat.gov.sg/find-data/search-by-theme/population/population-and-population-structure/latest-data)

[data/search-by-theme/population/population-and-population-structure/latest-data](https://www.singstat.gov.sg/find-data/search-by-theme/population/population-and-population-structure/latest-data)

Singapore Power Ltd. (n.d.). *Billing*. Retrieved August 9, 2020, from SP Group:

<https://www.spgroup.com.sg/what-we-do/billing>

United States Environmental Protection Agency. (n.d.). *Global Greenhouse Gas Emissions Data*.

Retrieved May 19, 2020, from United States Environmental Protection Agency:

<https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>

Appendix

Appendix A – Mandarin version of the survey

环境价值系统

多谢你参与这项调查，所有的资料皆保密，且只供应教育用途。

*必填

1. 你的住所有多少人？（16岁以上）*

2. 你的住所月薪范围？*

只点一个圈：

- _____ 少于 \$5000
_____ 位于 \$5000 至 \$11000
_____ 多于 \$11000

以下3题，请用你的最近6个月的水电单为依据：

3. 你过去6个月的平均用电量是多少？(kWh) *

只点一个圈：

- _____ 少于 200 kWh
_____ 位于 201 至 400 kWh
_____ 位于 401 至 600 kWh
_____ 多于 600 kWh

4. 你过去6个月的平均瓦斯(煤气)用量是多少？(kWh) *

只点一个圈：

- _____ 少50 kWh
_____ 位于 50 至 100 kWh
_____ 位于 100 至 150 kWh
_____ 多于 150 kWh

5. 你过去6个月的平均用水量是多少？(CuM) *

只点一个圈：

- _____ 少10 CuM
_____ 位于 10 至 20 CuM
_____ 位于 20 至 30 CuM
_____ 多于 30 CuM

6. 你的饮食习惯是什么？*

只点一个圈：

- _____ 纯素
_____ 一般素食（包括奶蛋）
_____ 非每餐吃肉
_____ 每餐吃肉

7. 你饮食习惯的理由是什么？*

只点一个圈：

- _____ 健康
_____ 流行
_____ 文化
_____ 文化
_____ 环境
_____ 其他

8. 如果你有车，你会平均用多少钱在车油上？*

9. 你每年有多少次坐飞机出国？*

只点一个圈：

- _____ 我基本上没有出国
_____ 我一年几次到东南亚之内
_____ 我一年几次到东南亚之外
_____ 我一年好几次到东南亚之外

Appendix B – Collated Survey Results

How many people are in your household? (Aged 16 and above)	In what range is your monthly household income?	What was your average electricity consumption for the past 6 months? (kWh)	What was your average gas consumption for the past 6 months? (kWh)	What was your average water consumption for the past 6 months? (CuM)	What does your diet primarily comprise of?	What are the reasons for your dietary choices?	If you own a car, on an average, how much do you spend on gas/fuel each month?	How often do you travel by flight annually?
4	Between \$5000 and \$11000	Greater than 650 kWh	50 kWh to 100 kWh	10 CuM to 20 Cum	Meat in some meals of the day	Health	0	A few times within South East Asia
4	Between \$5000 and \$11000	401 kWh to 600 kWh	Less than 50 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health	100	I mostly don't at all
4	Between \$5000 and \$11000	401 kWh to 600 kWh	100 kWh to 150 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health	500	A few times within South East Asia
3	Between \$5000 and \$11000	201 kWh to 400 kWh	50 kWh to 100 kWh	10 CuM to 20 Cum	Meat in some meals of the day	Health	0	I mostly don't at all
3	Between \$5000 and \$11000	201 kWh to 400 kWh	100 kWh to 150 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health	500	A few times within South East Asia
4	Between \$5000 and \$11000	401 kWh to 600 kWh	Less than 50 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health	0	I mostly don't at all
2	Between \$5000 and \$11000	Less than 200 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Culture	300	A few times within South East Asia
3	Between \$5000 and \$11000	201 kWh to 400 kWh	50 kWh to 100 kWh	More than 30 CuM	Vegetarian	Culture	200	A few times out of South East Asia
2	Between \$5000 and \$11000	201 kWh to 400 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Vegetarian	Culture	500	A few times within South East Asia
3	Between \$5000 and \$11000	201 kWh to 400 kWh	50 kWh to 100 kWh	10 CuM to 20 Cum	Meat in some meals of the day	Culture	0	A few times within South East Asia
2	Between \$5000 and \$11000	Less than 200 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Culture	0	A few times within South East Asia
3	Between \$5000 and \$11000	Less than 200 kWh	Less than 50 kWh	Less than 10 CuM	Vegetarian	Health	40	I mostly don't at all
2	Between \$5000 and \$11000	201 kWh to 400 kWh	Less than 50 kWh	10 CuM to 20 Cum	Meat is every meal of the day	Health	0	A few times out of South East Asia
4	Between \$5000 and \$11000	Less than 200 kWh	Less than 50 kWh	10 CuM to 20 Cum	Meat in some meals of the day	Culture	120	Several flights outside South East Asia
4	Between \$5000 and \$11000	Less than 200 kWh	Less than 50 kWh	10 CuM to 20 Cum	Meat in some meals of the day	Culture	0	Several flights outside South East Asia
4	Between \$5000 and \$11000	Less than 200 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health, Culture	350	I mostly don't at all
4	Between \$5000 and \$11000	401 kWh to 600 kWh	More than 150 kWh	More than 30 CuM	Meat in some meals of the day	Health	0	I mostly don't at all
4	Between \$5000 and \$11000	201 kWh to 400 kWh	100 kWh to 150 kWh	10 CuM to 20 Cum	Meat in some meals of the day	Health	0	A few times within South East Asia
3	Between \$5000 and \$11000	Less than 200 kWh	Less than 50 kWh	10 CuM to 20 Cum	Meat in some meals of the day	Health	350	A few times within South East Asia
2	Between \$5000 and \$11000	Less than 200 kWh	50 kWh to 100 kWh	Less than 10 CuM	Meat in some meals of the day	Health	0	A few times within South East Asia
5	Between \$5000 and \$11000	201 kWh to 400 kWh	Less than 50 kWh	10 CuM to 20 Cum	Meat in some meals of the day	Health, Environment	0	A few times within South East Asia
3	Between \$5000 and \$11000	Greater than 650 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Meat is every meal of the day	personal choice	0	A few times within South East Asia
3	Between \$5000 and \$11000	201 kWh to 400 kWh	100 kWh to 150 kWh	10 CuM to 20 Cum	Vegetarian	Culture	0	A few times out of South East Asia
4	Between \$5000 and \$11000	401 kWh to 600 kWh	More than 150 kWh	More than 30 CuM	Vegetarian	Culture	0	A few times out of South East Asia
4	Between \$5000 and \$11000	201 kWh to 400 kWh	Less than 50 kWh	10 CuM to 20 Cum	Vegetarian	Culture	200	A few times within South East Asia
3	Between \$5000 and \$11000	Less than 200 kWh	Less than 50 kWh	Less than 10 CuM	Vegetarian	Health	200	I mostly don't at all
4	Between \$5000 and \$11000	401 kWh to 600 kWh	50 kWh to 100 kWh	10 CuM to 20 Cum	Meat is every meal of the day	No specific dietary choices in my family	150	Several flights outside South East Asia
4	Between \$5000 and \$11000	201 kWh to 400 kWh	More than 150 kWh	10 CuM to 20 Cum	Vegetarian	Culture	0	A few times within South East Asia
3	Between \$5000 and \$11000	Greater than 650 kWh	More than 150 kWh	More than 30 CuM	Meat in some meals of the day	Health	230	A few times within South East Asia
2	Between \$5000 and \$11000	201 kWh to 400 kWh	50 kWh to 100 kWh	10 CuM to 20 Cum	Vegetarian	Culture	150	A few times within South East Asia
2	Between \$5000 and \$11000	Less than 200 kWh	50 kWh to 100 kWh	10 CuM to 20 Cum	Vegetarian	Health, Trend, Culture	0	A few times within South East Asia
1	Less than \$5000	201 kWh to 400 kWh	Less than 50 kWh	Less than 10 CuM	Meat in some meals of the day	Health	0	A few times within South East Asia
5	Less than \$5000	201 kWh to 400 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Meat is every meal of the day	Health	0	I mostly don't at all
4	Less than \$5000	Less than 200 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Vegetarian	Health, Culture	100	A few times within South East Asia
6	Less than \$5000	Greater than 650 kWh	More than 150 kWh	More than 30 CuM	Vegetarian	Health, Religion	150	A few times within South East Asia
2	Less than \$5000	201 kWh to 400 kWh	Less than 50 kWh	Less than 10 CuM	Meat in some meals of the day	A balanced diet	0	I mostly don't at all
3	Less than \$5000	201 kWh to 400 kWh	Less than 50 kWh	10 CuM to 20 Cum	Vegetarian	Culture	0	I mostly don't at all
3	Less than \$5000	201 kWh to 400 kWh	50 kWh to 100 kWh	10 CuM to 20 Cum	Meat is every meal of the day	balanced diet	300	I mostly don't at all
3	Less than \$5000	201 kWh to 400 kWh	50 kWh to 100 kWh	10 CuM to 20 Cum	Meat is every meal of the day	Health	0	A few times within South East Asia
2	Less than \$5000	201 kWh to 400 kWh	Less than 50 kWh	Less than 10 CuM	Meat in some meals of the day	A balanced diet	0	I mostly don't at all
3	Less than \$5000	Greater than 650 kWh	100 kWh to 150 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health, Culture	0	A few times out of South East Asia
5	Less than \$5000	Less than 200 kWh	Less than 50 kWh	10 CuM to 20 Cum	Meat in some meals of the day	Health	0	I mostly don't at all
3	More than \$11000	201 kWh to 400 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health, Environment	300	Several flights outside South East Asia
5	More than \$11000	401 kWh to 600 kWh	Less than 50 kWh	10 CuM to 20 Cum	Meat in some meals of the day	Health, Culture	800	A few times within South East Asia
2	More than \$11000	201 kWh to 400 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health, Environment	400	A few times within South East Asia
3	More than \$11000	201 kWh to 400 kWh	More than 150 kWh	20 CuM to 30 CuM	Vegetarian	Culture	0	A few times within South East Asia
3	More than \$11000	401 kWh to 600 kWh	100 kWh to 150 kWh	More than 30 CuM	Meat in some meals of the day	Health, Culture, Environment	400	A few times within South East Asia

3	More than \$11000	201 kWh to 400 kWh	100 kWh to 150 kWh	More than 30 CuM	Vegetarian	Culture	1,000	Several flights outside South East Asia
2	More than \$11000	201 kWh to 400 kWh	More then 150 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Culture	100	A few times within South East Asia
3	More than \$11000	201 kWh to 400 kWh	More then 150 kWh	20 CuM to 30 CuM	Vegetarian	Culture	0	A few times within South East Asia
3	More than \$11000	401 kWh to 600 kWh	100 kWh to 150 kWh	20 CuM to 30 CuM	Vegetarian	Culture	300	A few times within South East Asia
1	More than \$11000	401 kWh to 600 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health, Culture	200	I mostly don't at all
3	More than \$11000	401 kWh to 600 kWh	100 kWh to 150 kWh	20 CuM to 30 CuM	Vegetarian	Culture	200	A few times within South East Asia
2	More than \$11000	201 kWh to 400 kWh	100 kWh to 150 kWh	20 CuM to 30 CuM	Vegetarian	Health, Culture	150	A few times within South East Asia
3	More than \$11000	201 kWh to 400 kWh	100 kWh to 150 kWh	More than 30 CuM	Vegetarian	Culture	1,000	Several flights outside South East Asia
3	More than \$11000	Less than 200 kWh	Less than 50 kWh	Less than 10 CuM	Vegetarian	Trend, Culture	1,000	A few times within South East Asia
2	More than \$11000	Less than 200 kWh	Less than 50 kWh	Less than 10 CuM	Meat in some meals of the day	Health	250	A few times within South East Asia
4	More than \$11000	401 kWh to 600 kWh	100 kWh to 150 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health	300	A few times within South East Asia
4	More than \$11000	201 kWh to 400 kWh	100 kWh to 150 kWh	10 CuM to 20 Cum	Vegetarian	Culture	0	A few times within South East Asia
3	More than \$11000	201 kWh to 400 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Whatever the maid cooks	120	Several flights outside South East Asia
4	More than \$11000	401 kWh to 600 kWh	100 kWh to 150 kWh	20 CuM to 30 CuM	Meat is every meal of the day	Culture	0	I mostly don't at all
4	More than \$11000	401 kWh to 600 kWh	100 kWh to 150 kWh	20 CuM to 30 CuM	Meat is every meal of the day	Culture	0	I mostly don't at all
4	More than \$11000	401 kWh to 600 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health	0	A few times out of South East Asia
4	More than \$11000	401 kWh to 600 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health	0	A few times within South East Asia
3	More than \$11000	401 kWh to 600 kWh	100 kWh to 150 kWh	20 CuM to 30 CuM	Vegetarian	Culture	200	A few times within South East Asia
2	More than \$11000	201 kWh to 400 kWh	50 kWh to 100 kWh	10 CuM to 20 Cum	Meat in some meals of the day	Culture	150	A few times within South East Asia
3	More than \$11000	Greater than 650 kWh	More then 150 kWh	More than 30 CuM	Vegetarian	Health, Culture, Environment	0	A few times within South East Asia
3	More than \$11000	Greater than 650 kWh	More then 150 kWh	More than 30 CuM	Vegetarian	Health, Culture, Environment	0	A few times within South East Asia
3	More than \$11000	401 kWh to 600 kWh	100 kWh to 150 kWh	20 CuM to 30 CuM	Vegetarian	Culture	200	A few times within South East Asia
3	More than \$11000	Less than 200 kWh	100 kWh to 150 kWh	More than 30 CuM	Vegetarian	Culture	0	Several flights outside South East Asia
2	More than \$11000	201 kWh to 400 kWh	50 kWh to 100 kWh	10 CuM to 20 Cum	Meat in some meals of the day	Liking	0	I mostly don't at all
2	More than \$11000	201 kWh to 400 kWh	100 kWh to 150 kWh	More than 30 CuM	Meat in some meals of the day	Culture	0	A few times within South East Asia
2	More than \$11000	201 kWh to 400 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health, Environment	400	A few times within South East Asia
4	More than \$11000	401 kWh to 600 kWh	More then 150 kWh	More than 30 CuM	Vegetarian	Health, I'm too fat	0	A few times within South East Asia
3	More than \$11000	401 kWh to 600 kWh	More then 150 kWh	20 CuM to 30 CuM	Vegetarian	Culture	0	A few times within South East Asia
5	More than \$11000	Greater than 650 kWh	More then 150 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Health, Culture	0	I mostly don't at all
3	More than \$11000	Less than 200 kWh	Less than 50 kWh	More than 30 CuM	Vegetarian	Culture	200	A few times within South East Asia
5	More than \$11000	Greater than 650 kWh	More then 150 kWh	More than 30 CuM	Vegetarian	Culture	0	Several flights outside South East Asia
4	More than \$11000	201 kWh to 400 kWh	100 kWh to 150 kWh	More than 30 CuM	Meat in some meals of the day	Trend, Culture	0	A few times within South East Asia
3	More than \$11000	401 kWh to 600 kWh	50 kWh to 100 kWh	20 CuM to 30 CuM	Meat in some meals of the day	Culture, Environment	0	A few times out of South East Asia
2	More than \$11000	201 kWh to 400 kWh	100 kWh to 150 kWh	20 CuM to 30 CuM	Vegetarian	Health, Culture	300	A few times within South East Asia
2	More than \$11000	401 kWh to 600 kWh	Less than 50 kWh	Less than 10 CuM	Meat is every meal of the day	Environment	0	A few times within South East Asia
3	More than \$11000	201 kWh to 400 kWh	50 kWh to 100 kWh	10 CuM to 20 Cum	Vegetarian	Culture	0	A few times within South East Asia
3	More than \$11000	201 kWh to 400 kWh	50 kWh to 100 kWh	10 CuM to 20 Cum	Vegetarian	Culture	0	A few times within South East Asia