

Assessment 2 – Analysis of Data

Name: Rhys Luckey

Student ID: 12345678

Swinburne Online

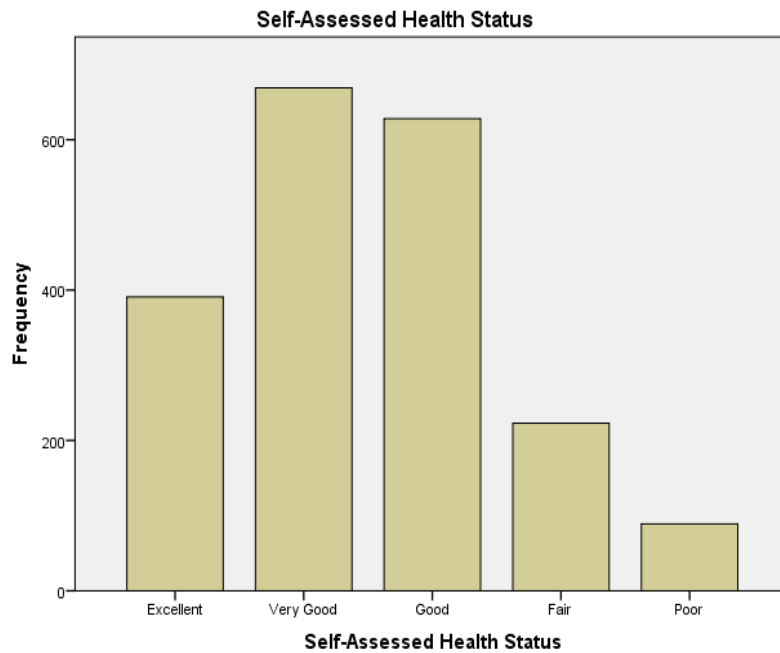
Assessment 2 – Analysis of data

Question 1 – Summary of a categorical variable

The diagram below shows a representation of self-assessment of health by the individual respondents themselves, it is positively skewed or skewed to the right. Most people as shown by the result of the analysis stated that their health was very good this is a sharp 35.9% of the respondents. This was followed closely by respondents who selected “Good” as their health status according to their self-assessment this was made of 29.2% of the total respondents. 19.1% of the respondents selected “Excellent” as their current state of health this is third highest. At fourth place came 11.9% of the population who believed that their health is not very good and also not worse of and they stated “Fair” to stand for their current health status. The last portion of the respondents is of those people who are convinced that their health status is not very good and so they selected “Poor” to stand for that, this is made of 4.0% of the total population.

Table.1

Self-Assessed Health Status					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Excellent	391	19.6	19.6	19.6
	Very Good	669	33.5	33.5	53.0
	Good	628	31.4	31.4	84.4
	Fair	223	11.2	11.2	95.6
	Poor	89	4.5	4.5	100.0
	Total	2000	100.0	100.0	

**Fig. 1**

Distribution of Self-Assessment Health Status.

Table 2 below shows the distribution of fruits and vegetables combined in a random sample of 2000 respondents. The distribution is positively skewed, with 23.6% of a total sample of 2000 people this is made of 476 people of the 2000 respondents combined six items of vegetables & fruits. 23.5% of the total population of 2000 participants choose 3 units of combination of both fruits and vegetables. In third place is 13.7% (274) there's a combination of 1 unit combination of fruits & vegetables. 9.7% came in at fourth place with 194 participants who mentioned having consumed 7 combination of fruits and vegetable. This was followed closely by the participants who consumed a combination of 2 fruits and vegetables per day this were 8.1% making a total of 162 people of the possible 2000. The next group is made of 5.3% of the possible 2000 participants in the study, this is 106 people of the possible 2000 participants who mentioned having 4 fruit & vegetable intake combined per day. 4.0% of the 2000 respondents was made of people who did not have any combinational of fruit & vegetable intake combined.

Table.2

Fruit & Vegetable Intake combined [per day]

	Frequency	Percent	Valid Percent	Cumulative Percent
0	80	4.0	4.0	4.0
1	274	13.7	13.7	17.7
2	162	8.1	8.1	25.8
3	469	23.5	23.5	49.3
4	106	5.3	5.3	54.6
5	472	23.6	23.6	78.2
Valid 6	66	3.3	3.3	81.5
7	194	9.7	9.7	91.2
8	57	2.9	2.9	94.0
9	69	3.5	3.5	97.5
10	22	1.1	1.1	98.6
11	29	1.5	1.5	100.0
Total	2000	100.0	100.0	

Fruit & Vegetable Intake combined [per day]

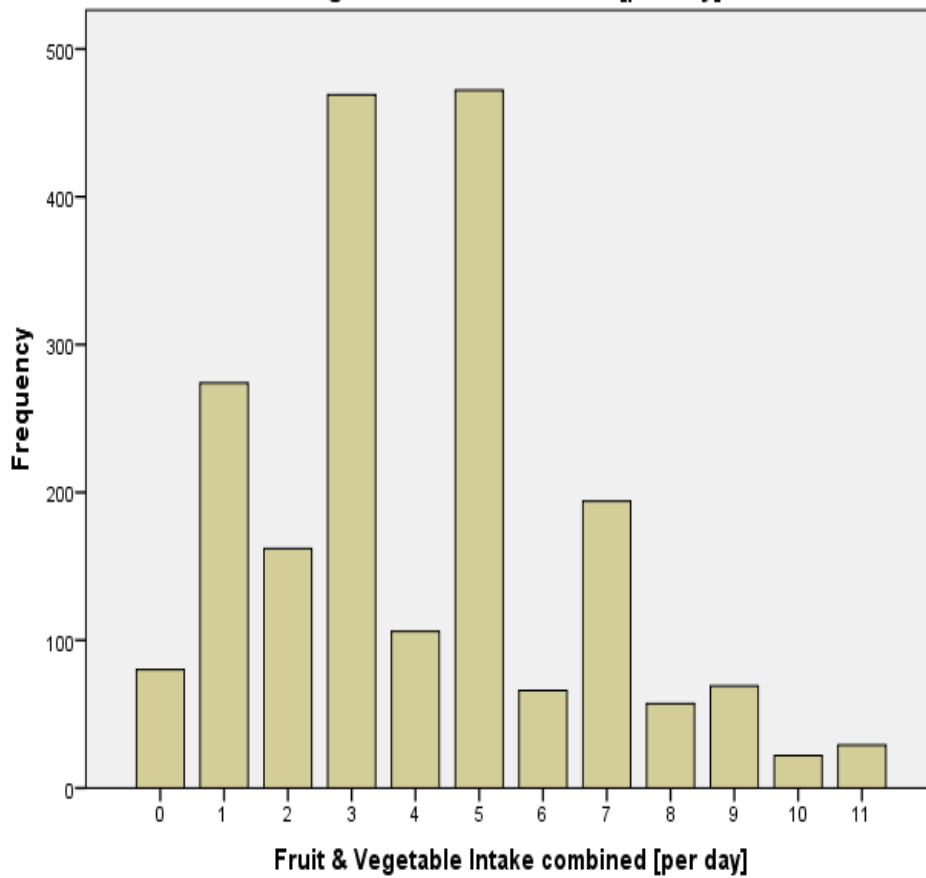


Fig.2 Distribution of fruit and vegetable intake consideration

The diagram2 below is supported by frequency table2, they both show distribution number of serves of fruits per day in the random sample of 2000-Australians, the distribution is positively skewed (skewed -to the right). As displayed on the bar-chart 30.8% of Australians took 2serves of fruits per day, this was followed closely by the Australians who took 1seve of fruit per day at 30.0%, 19.6% of Australians in a random sample of 2000 took zero or no fruit serves per day. In fourth place we have Australians who took3serves of fruits per day which stood at 13.2% of the total sample of 2000individuals. In fifth place we have 4.5% of 2000 people who took 4serves of fruits daily, in the last spot we have 2.0% of the total random sample of 2000 of Australians who take 5serves of fruits per day, and this consisted of 39people of the total sample of the possible 2000people.

Table 3.

Number of serves of Fruit per day				
	Frequency	Percent	Valid Percent	Cumulative Percent
0	392	19.6	19.6	19.6
1	600	30.0	30.0	49.6
2	616	30.8	30.8	80.4
Valid 3	263	13.2	13.2	93.6
4	90	4.5	4.5	98.1
5	39	2.0	2.0	100.0
Total	2000	100.0	100.0	

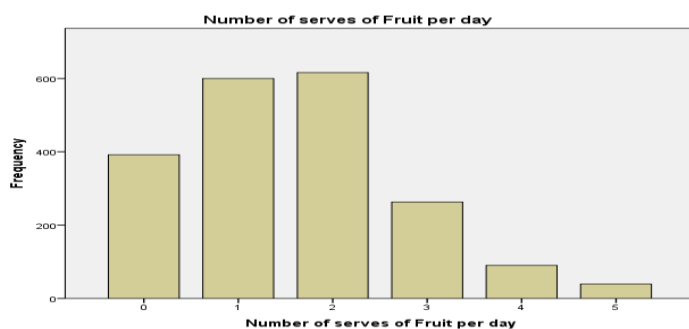


Fig.3 Distribution of number of serves of fruit per day.

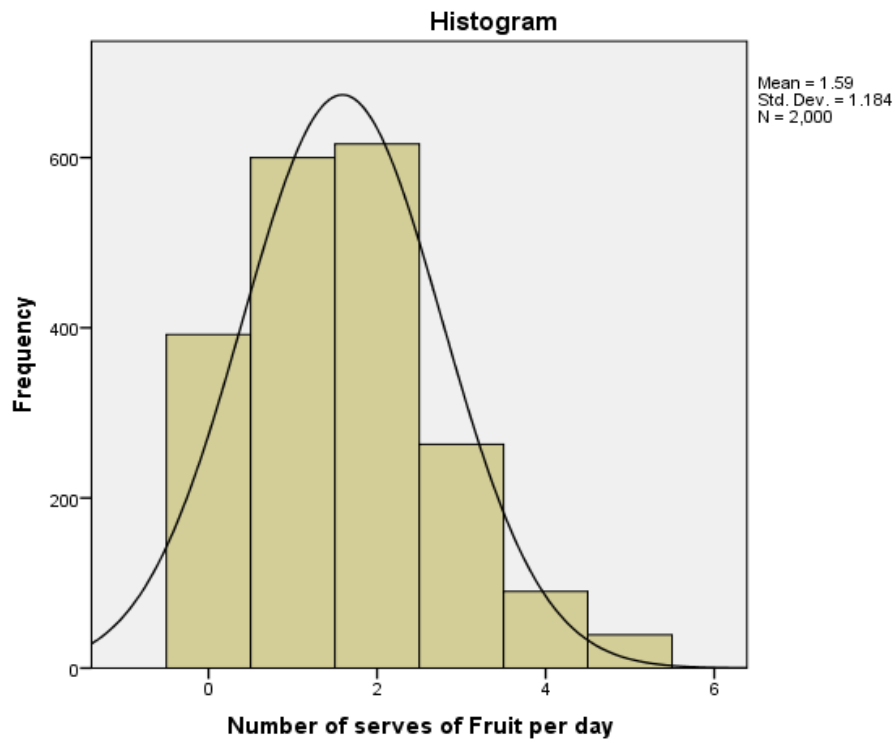


Fig.4

Figure above is a histogram showing the distribution of number of serves of fruits per day, most people opted to have two serves of fruits per day.

Table 4

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Body Mass Index	191.300	1694	.000	27.20338	26.9245	27.4823

Using a random sample of 2000 respondents in Australia, the average body mass index is 27.20units. This is equal to the estimated higher than 27 in the question, the one-sample t-test shows that difference in mean Body Mass Index is 27.02, t (191.30). The confidence interval is 95%, the lower interval is 26.9245 while the higher interval is 27.4823. This clearly shows that the Body Mass Index for Australians is increasing with time.

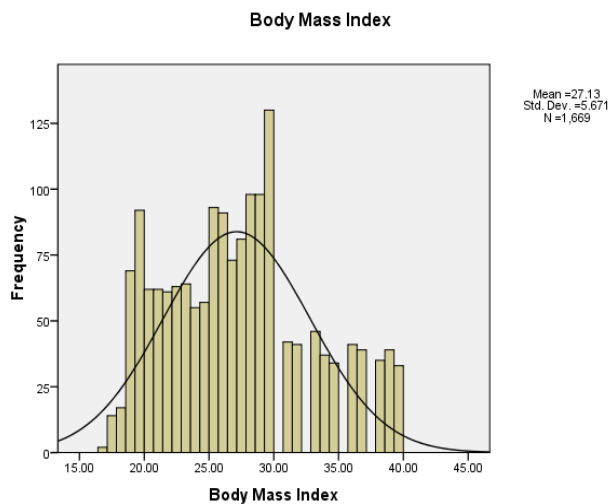


Fig.5 Distribution of Body Mass Index

The diagram below shows the distribution of number of fruits serves per day, there is positive skewness in the number of distribution of fruits per day. 32.6% of respondents said their have had 1fruit per day, this is followed closely by the people who take 2fruits per day which is 28.1%. The third group is of those people who took no fruits during the day this was composed of 20.5% of the total respondents. 13.2% of the respondents took 3fruits per day, while 3.8% of the respondents said they consume 4fruits per day. However, 1.9% of the respondents took 5fruits per day. The highest bar shows the highest percentage and the lowest bar on the graph shows the least percentage of the respondents which is made of only 38people who take 5fruits in a sample of 2000 respondents.

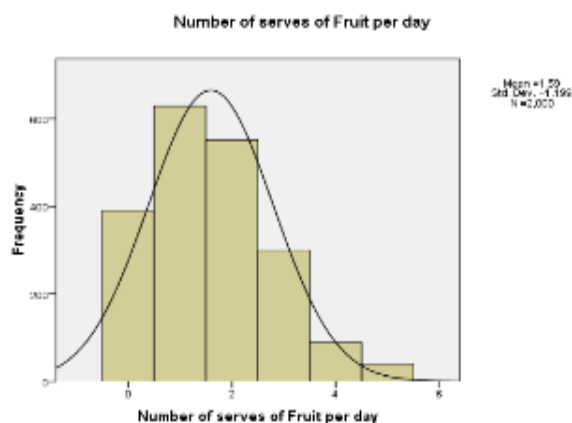


Fig.6 Distribution of number of fruits serves per day.

The diagram below shows the exercise levels positively distributed or which is skewed to the right in the sample consisting of 2000Austaralians. 35.4% of the respondents registered “Sedentary” this people spent much of their time seated or with minimum exercise levels. 32.1% registered low exercise levels, 20.7% comes third which registered “Moderate”. Finally, 11.9% was covered by people among the respondents who mentioned “High” exercise level.

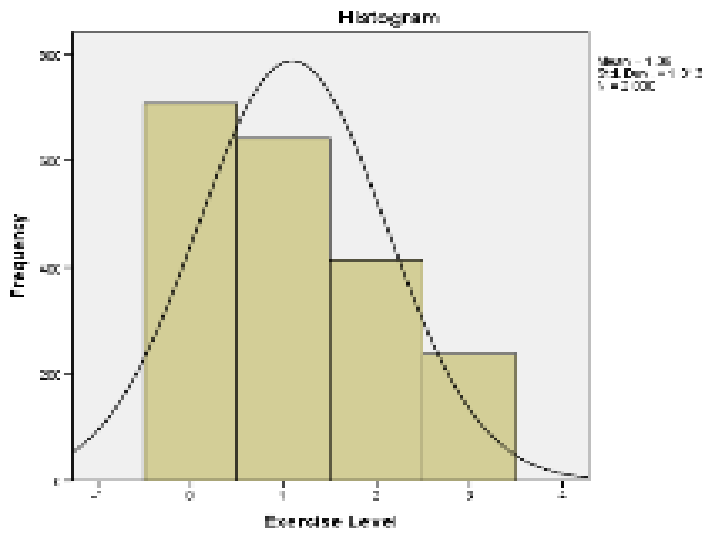


Fig.7

Table 5.

		Exercise Level			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sedentary	708	35.4	35.4	35.4
	Low	642	32.1	32.1	67.5
	Moderate	413	20.7	20.7	88.2
	High	237	11.9	11.9	100.0
	Total	2000	100.0	100.0	

Table.6

Statistics

Number of serves of Fruit per day

N	Valid	2000
	Missing	0
Mean		1.59
Std. Error of Mean		.026

Median		1.51 ^a
Mode		2
Std. Deviation		1.184
Variance		1.402
Skewness		.574
Std. Error of Skewness		.055
Kurtosis		.049
Std. Error of Kurtosis		.109
Range		5
Minimum		0
Maximum		5
Sum		3176
	25	.61 ^b
Percentiles	50	1.51
	75	2.46

a. Calculated from grouped data.

b. Percentiles are calculated from grouped data.

Table.5

The table above displays information about number of serves of fruits per day in a sample of 2000 Australians. The mean is 1.59, standard error of mean is .026, on the other hand the first percentile of 25% is .61, 50% is 1.51 and 75% stood at 2.46. Skewness was .574 and Kurtosis is .049. The range is rated at 5 and the Minimum and maximum are 0 and 5 respectively.

Question 3 – Binomial Test.

It is hypothesized that Australians live a sedentary life and that most Australians over 32% of the population lives a sedentary life. A was conducted show the exercise levels of Australians using the respondents as the representation of the larger population, the sample of 2000 Australians was used. The binomial test shows that most Australians reported reduced exercise levels and that is why the “sedentary” is having a high of 32% and growing. This is because exercise levels are low among Australians leading to increased number of people who suffering from obesity. At 95% confidence interval shows, 35.1% of Australians live “sedentary” lie,

while 32.6% indicated “Low”, further 19.9% indicated “Moderate” and finally 12.5% said “High”. As hypothesised, more than 32% of Australians live a sedentary life which increases their health risk and leaves them in obesity states. A 95% confidence interval indicates that between 32.6% and 35.1% of Australians live a sedentary life, such that they don’t really take time to exercise and work out. We therefore conclude that the hypothesis that more than 32% of Australians are sedentary is true since the percentage is more than 32% that is 35.1%-sedentary.

Table.7

Exercise Level				
	Frequency	Percent	Valid Percent	Cumulative Percent
Sedentary	702	35.1	35.1	35.1
Low	651	32.6	32.6	67.7
Valid Moderate	398	19.9	19.9	87.6
High	249	12.5	12.5	100.0
Total	2000	100.0	100.0	

Table. 8

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Exercise Level	2000	1.10	1.019	0	3

Question 4 – One Sample t-test

The one-sample t-test shows that the body mass index has a mean of 27.31 in a total population of 1669, the standard deviation of the BMI is 5.67136, while the standard error stood at .13382. Body Mass Index range has a mean of 2.88, risk of chronic diseases is 1.63 units on the one-sample t-test output below.

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Table 9 shows the one sample statistics below shows that the standard deviation for self-assessed health status is 1.055, 1.099 is the deviation for the number of serves of fruits per day. The number of serves of vegetables per day had a standard deviation of 1.385, and a mean of 2.47. Body Mass Index has a mean of 27.13, a standard deviation of 5.6713 and a standard error mean of .13882

Table.9

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
ID	2000	4304.13	2449.937	54.782
Age in Years	2000	46.29	18.196	.407
Gender	2000	1.51	.500	.011
Self-Assessed Health Status	2000	2.47	1.055	.024
Number of serves of Fruit per day	2000	1.59	1.199	.027
Number of serves of Vegetables per day	2000	2.47	1.385	.031
Exercise Level	2000	1.05	.997	.022
Body Mass Index	1669	27.1301	5.67136	.13882
Height [cm]	1727	1.6880E2	10.35846	.24926
Weight [kg]	1721	78.3085	18.36727	.44275
Waist Circumference [cm]	1677	92.6512	14.76517	.36056
On a diet?	1942	1.14	.350	.008
Fruit intake adequate [2 or more serves per day]	2000	1.51	.500	.011
Vegetable intake adequate [5 or more serves per day]	2000	1.91	.286	.006
Do you eat Fruit?	2000	1.80	.396	.009
Do you eat Vegetables?	2000	1.95	.213	.005

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BMI Range	1669	2.88	.811	.020
Risk of Chronic Disease	1677	1.63	.484	.012
Fruit & Vegetable Intake combined [per day]	2000	4.06	2.499	.056
Risk of Chronic Disease Level	1677	1.97	.880	.021
2000 from the first 8525 cases (SAMPLE)	2000	.23	.424	.009

Question 5 – Independent Samples t-test

The study worked on the hypotheses that Fruit & Vegetable intake combined (per day) was higher for female than it is for male participants in a random sample of 2000 Australians. The average fruit vegetables consumption of women on diet stood at 1.52, this shows that people who were on diet and consumed fruits regularly had better results than those who were not on diet and consumed fruits. Sig. was 0.117, t (1.738). As expected on the hypotheses people who consumed more fruits while on diet were better off.

Table.10

Group Statistics

	Fruit & Vegetable Intake combined [per day]	N	Mean	Std. Deviation	Std. Error Mean
Gender	0	85	1.52	.503	.055
	1	301	1.41	.493	.028

In the group statistics box above, the mean for male dummy (0) is 1.52 and the mean of 1.41 for female (1). The standard deviation for male is 0.503 and standard deviation for female is 0.493. The participants cum respondents (N) for 301 females and 85 male Australians.

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The table below shows an independent sample test, the Sig is 0.12units, Sig. 2 is 0.083. Sig.2 being less than 0.05 this shows a statistically significant between the mean number of fruit & vegetable intake combined (per day) difference between the mean differences. However, the mean for the male gender was greater than mean for female gender as in the group statistics table. Therefore, participants who are of male gender were seen to have more fruit & vegetable intake combined (per day) than the female participants

Table. 11

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	d.f	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Gender	Equal variances assumed	2.464	0.117	1.738	384	0.083	0.106	0.061	-0.014	0.225
	Equal variances not assumed			1.778	133.087	0.083	0.106	0.061	-0.016	0.227

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		1						
		9						