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ROLL NO: 16

TOPIC: KIWI

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INTRODUCTION

The kiwifruit, or Chinese gooseberry, originally grew wild in China. The cultivation of kiwi (*Actinidia deliciosa* and *Actinidia chinensis*) or Chinese gooseberry spread from China in the early twentieth century. Kiwis are a nutrient-dense food — they are rich in nutrients and low in calories. Kiwi has a reputation as a health food because of its high vitamin C content, but the fruit is also rich in other nutrients. These may help reduce blood pressure, boost wound healing, help maintain bowel health, and more.

In India, Kiwi is mostly grown in Jammu Kashmir, Himachal Pradesh, Sikkim, Meghalaya, Arunachal Pradesh, Uttar Pradesh and Kerala. Kiwi in Arunachal Pradesh, the largest producer of kiwis in India. It contributes 56.5% of the total 8.5 thousand tons of kiwis produced in the country. Kiwi fruit may be grown in warm and humid environments.

This study is aimed to analyse the current demand and supply of the Indian Kiwi with its features, speciality and other numerous characteristics side by side the factors that affect the demand and supply of the Indian Kiwi.

OBJECTIVES

- To analyse the pricing, features, utility and other characteristics of Kiwi.
- To analyse the demand for Indian Kiwi.
- To Perform an analysis on the kiwi's industry
- To study the income elasticity for kiwi

PROCESS

Due to the lack of secondary sources of data on Indian kiwi a questionnaire was made on google forms. It was distributed through the channels of Instagram and WhatsApp. This was designed to analyse the product features, availability, demand of kiwi. After receiving 82 responses the data was cleaned by

- 10 or more in number of kiwi is taken as 10 for ease in calculation
- Two responses of age less than 15 have been discarded

- Discarded response of no idea of price

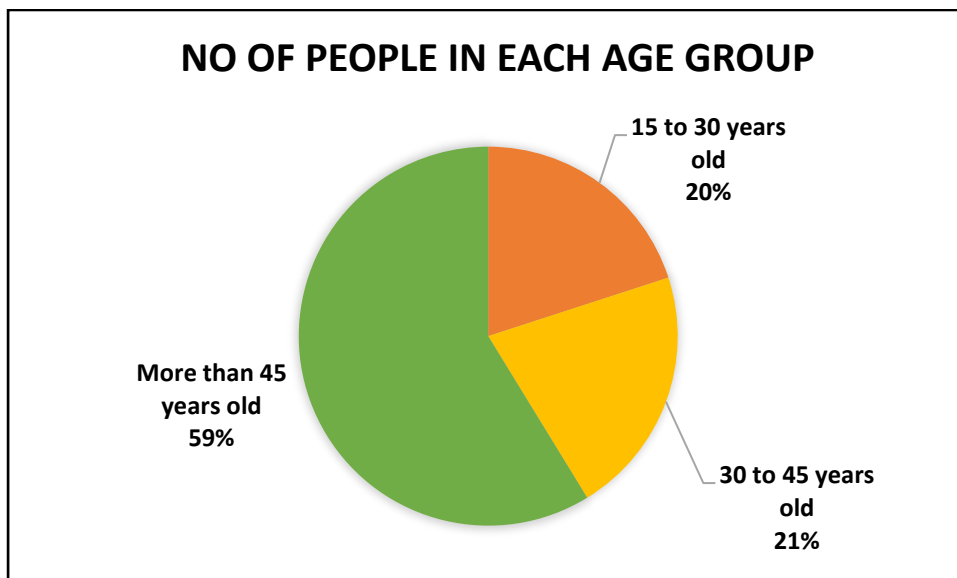
Limitations

- The total number of response were only 82 of which only 79 were usable. Also the assumption that the response given was accurate. Thus having a small sample doesn't give a very stable results.
- Lack of information on the market of Indian kiwi.

ANALYSIS OF KIWI

1) AGE GROUP

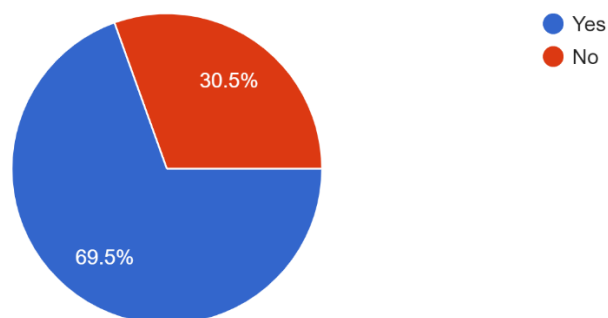
AGE GROUPS	
age group	no of people in each age group
15 to 30 years old	16
30 to 45 years old	17
More than 45 years old	47
Grand Total	80



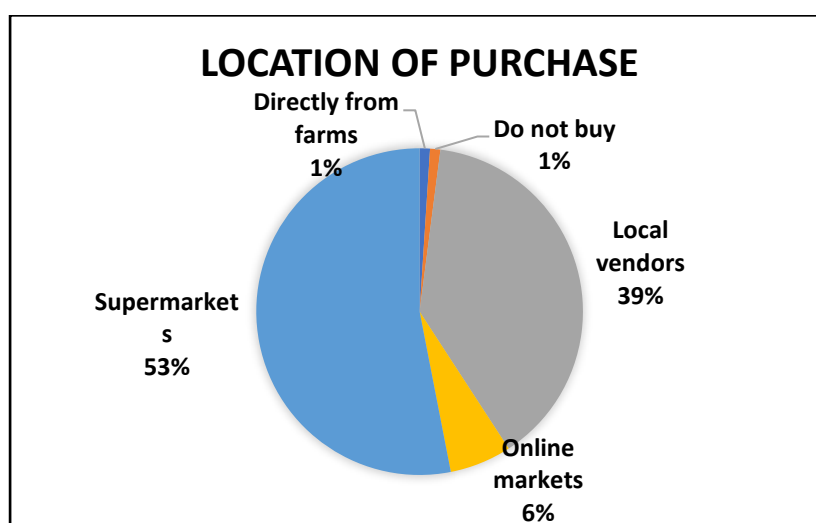
age group	total no of kiwi purchased in a month	average number of kiwi purchased by each person
15 to 30 years old	64	4
30 to 45 years old	46	2.705882353
More than 45 years old	218	4.638297872
Grand Total	328	4.1

The age group more than 45 years old constitutes 59% of the total sample. On an average one person buys 5 kiwis a month. 15- to 30-year-olds constitute 20% of the sample and on an average buy 4 kiwi a month. 30- to 45-year-olds constitute 21% of the sample and buy 3 kiwis on an average in a month.

2) AVAILABILITY AND PURCHASE LOCATION



Location of purchase	no of people
Directly from farms	1
Do not buy	1
Local vendors	38
Online markets	6
Supermarkets	52



Kiwi is easily available to approximately 70% of the consumers.

There were many locations of purchase were considered for the study. 53% of the people purchase kiwi from the supermarket. This could be due to the habits and familiarity of the customers with the supermarkets. Followed by 39% preferring local vendors to purchase from. As kiwi is not a fruit native to India local vendors might not always have the availability due to which it might be lesser preferred by the consumers. While a portion of 6% use the online platform to purchase kiwi. For using an online medium to purchase kiwi requires sophisticated systems like a mobile with an active internet and having a form of e-pay which might not be accessible to all. An other factor contributing would be trusting online stores to deliver quality products .Only a small portion of 1% order directly from a farm.

3) Reason for purchase

Kiwi provides a range of health benefits due to it's nutritional contents. Kiwis are a good source of vitamin C, antioxidants, and fiber. Antioxidants — including vitamin C, choline, lutein, and zeaxanthin — help remove free radicals from the body.

A 2011 [study](#) looked at the effects of kiwifruit on sleep quality in adults with sleep problems. The researchers found that eating kiwis improved sleep, according to self-reported measures. The scientists suggested that this benefit may stem from the antioxidant and [serotonin](#) contents of kiwis.

The different reasons for which people purchased kiwis and the attributes that were important to them while buying were also collected and analysed as follows.

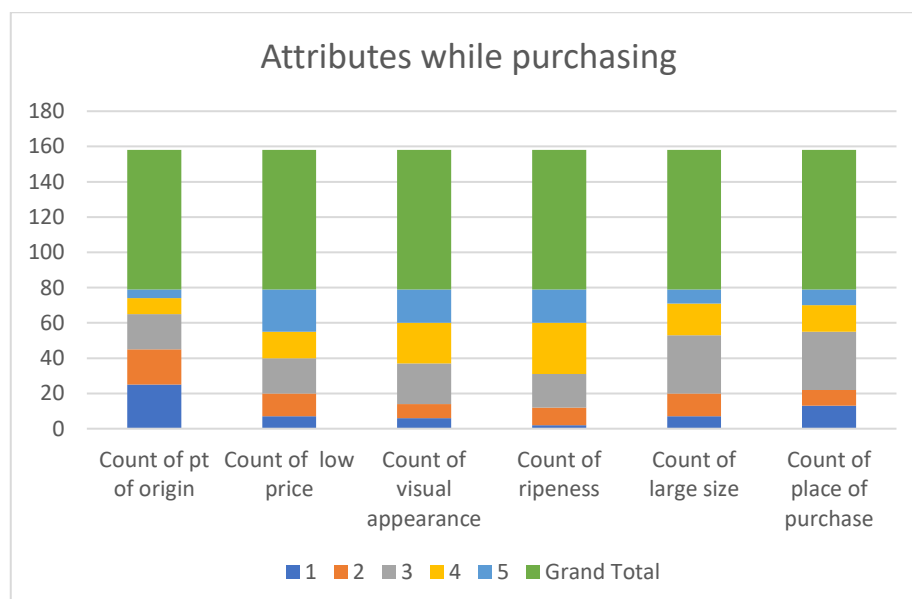
level of importance of the attribute	Count of point of origin	Count of low price	Count of visual appearance	Count of ripeness	Count of large size	Count of place of purchase
1	25	7	6	2	7	13
2	20	13	8	10	13	9
3	20	20	23	19	33	33
4	9	15	23	29	18	15
5	5	24	19	19	8	9

Only 14 of 79 people find it extremely important for the ripeness of the kiwi. Though 67 of 79 felt is of at least somewhat of an importance. So we can conclude that ripeness is a factor that has a major effect on the demand of a kiwi.

Only 9 on 79 people find the place of purchase of a kiwi to be important. This could be due to the fact that kiwi not being a fruit native to India doesn't give the consumers many choices to purchase from. From this we can say the place of purchase has no impact in the demand for a kiwi

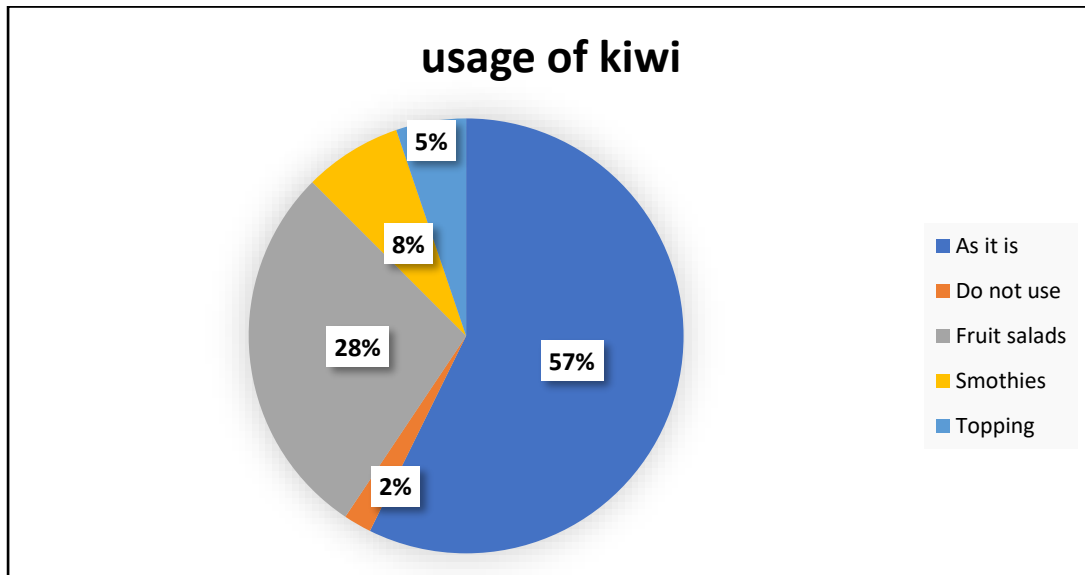
24 of 79 found that the price of the kiwi being an important factor. This might be due to the high competition between large supermarkets and local vendors and now a new competitor due COVID-19 the online market. These prices being highly competitive give the consumers a variety of options. So we can conclude that the the price is relatively important.

65 of 79 individuals the place of origin of the fruit has moderate to no importance. This can logically be understood as when an individual purchases fruits they look for the quality of the fruit rather than where it was grown. Therefore we can conclude that the place of origin has little to no impact on the demand.



4) Uses of kiwi

usage	Number of people
As it is	55
Do not use	2
Fruit salads	27
Smothies	7
Topping	5

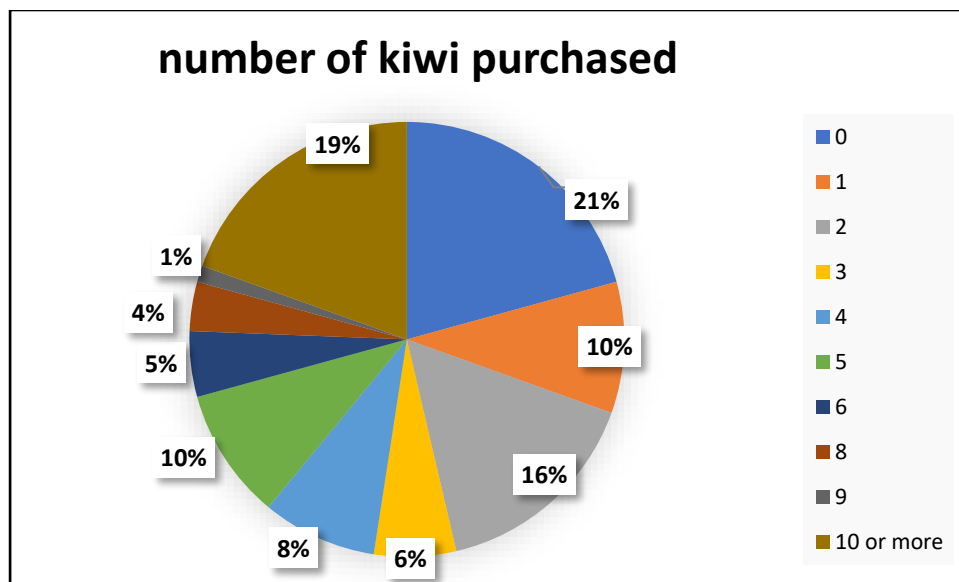


As kiwi has a sweet sour and a tangy taste it is a very versatile fruit. It can be eaten as it is, used in smoothies ad milkshakes, used as a topping etc.

Most of the people i.e., 55 prefer to consume kiwi as it is. This is one of the most common and easiest ways to use a kiwi. While 28% i.e., 27 people use it in fruit salads. This shows the versatile usage of this fruit.

5) DEMAND FOR KIWI

Number of kiwi	number of people
0	17
1	8
2	13
3	5
4	7
5	8
6	4
8	3
9	1
10 or more	16
Grand Total	82



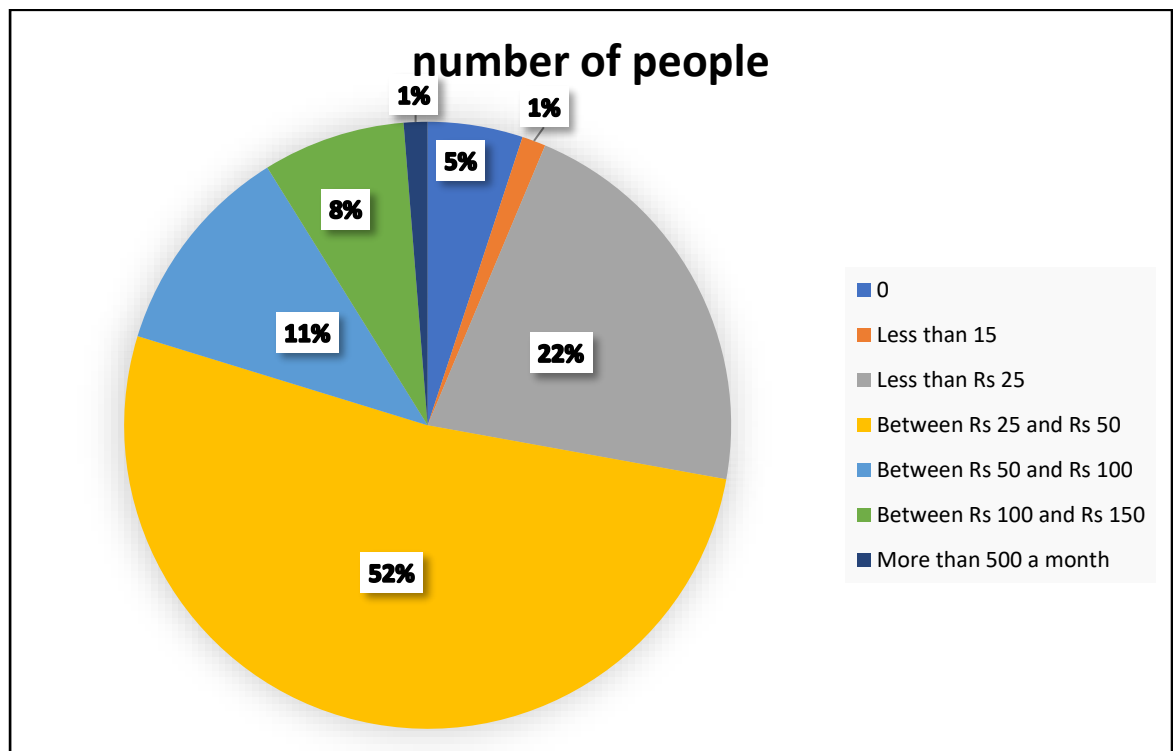
Considering the current sample we can say that the demand for kiwi is above average as around 40% of the consumers buy 5 kiwis or more a month . This is 50% of the kiwi consumers ($100\% - 21\% \approx 80\%$) . Though as an aggregate the majority is clearly taken by those who purchase 0 kiwi.

Since, majority of the people purchased kiwi from local vendors, the price that they pay may be an important factor here than that in e-commerce platforms owing to comfort of the buyers.

AMOUNT SPENT ON ONE KIWI

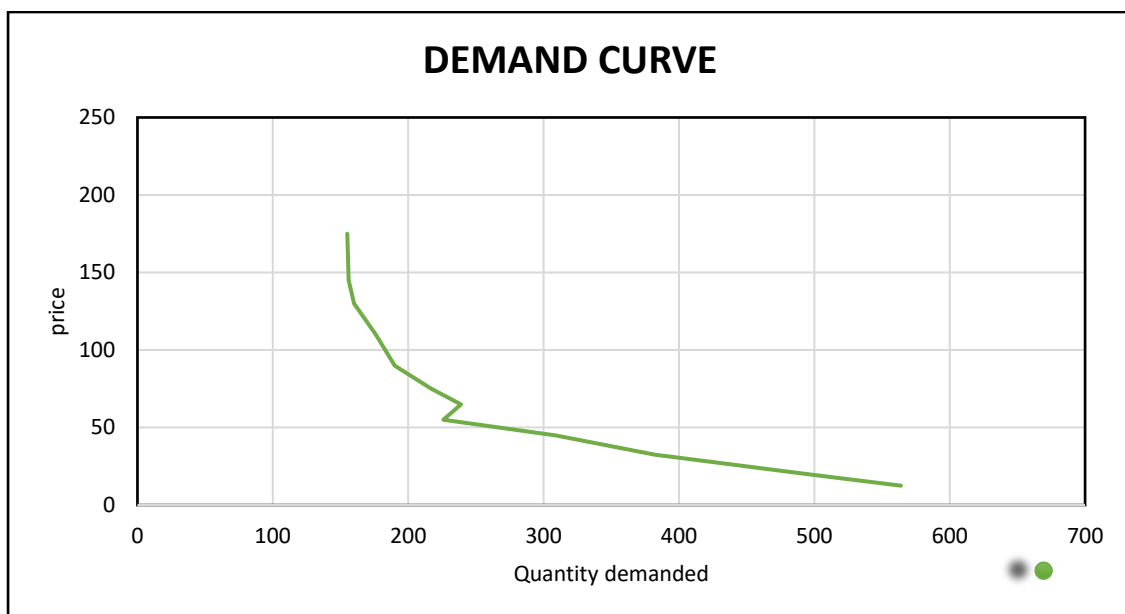
As we can see more than 50% of the consumers spend between 25 and 50 INR. This is followed by less than 25 which is less than half of 25 to 50 INR. In this group major it of the individuals prefer supermarkets as point of purchase.

Amount spent	number of people
0	4
Less than 15	1
Less than Rs 25	17
Between Rs 25 and Rs 50	41
Between Rs 50 and Rs 100	9
Between Rs 100 and Rs 150	6
More than 500 a month	1



DEMAND SCHEDULE OF KIWI

DEMAND SCHEDULE	
AGGREGATE MONTHLY DEMAND FOR KIWI	
price	total purchased
10	624
15	564
25	495
40	382
50	309
60	226
70	239
80	217
100	190
120	176
140	160
150	156
200	155



It can be seen that the demand curve is downward sloping with consumers demanding decreasing as the price increases. Thus, it proving the law of demand that demand is inversely proportional to the price of the product under the assumption of *ceteris paribus*.

MARKET ANALYSIS FOR KIWI

India is suitable to cultivate almost all the fruits because of its wide range of climatic conditions. India is not only abundant in various agricultural resources but its most important economic activity is agriculture. Agriculture has the highest employment rate in India as well.

As is not a native fruit to India, it still lacks the ease and flexibility to purchase other fruits like mangoes, oranges and bananas. This might be due to the price of a single kiwi being approx. 25 INR where ½ Kg bananas would be 25 INR. This makes it not reachable to everyone.

Kiwis are generally grown in plantations. Steep land can be contoured into terraces for kiwi plantations. Plants should receive as much sunlight as possible, therefore rows should be aligned north-south. Because January is the best month for kiwi plantation, pitting and manuring should be completed by December. As kiwi is grown on vines during Spring and Autumn, protection from cold is necessary, otherwise, it will damage kiwi vines. Wind machines and water sprinklers can be used to protect kiwi vines. Kiwi fruit may be grown in warm and humid environments. A deep yellow-brown loamy soil that is well-drained and fertile is ideal for kiwi farming. Nitrogen (200kg/ha), potassium (150kg/ha), and phosphorus (55 kg/ha) levels must be monitored on a regular basis once cropping begins. However, providing shelter from the wind is critical since wind can harm the kiwi plant, its little blossoms, and immature fruits.

Due to all these factors in India, Kiwi is mostly grown in Jammu Kashmir, Himachal Pradesh, Sikkim, Meghalaya, Arunachal Pradesh, Uttar Pradesh and Kerala. Arunachal Pradesh was the first state in India to get a certified crop licence for kiwi



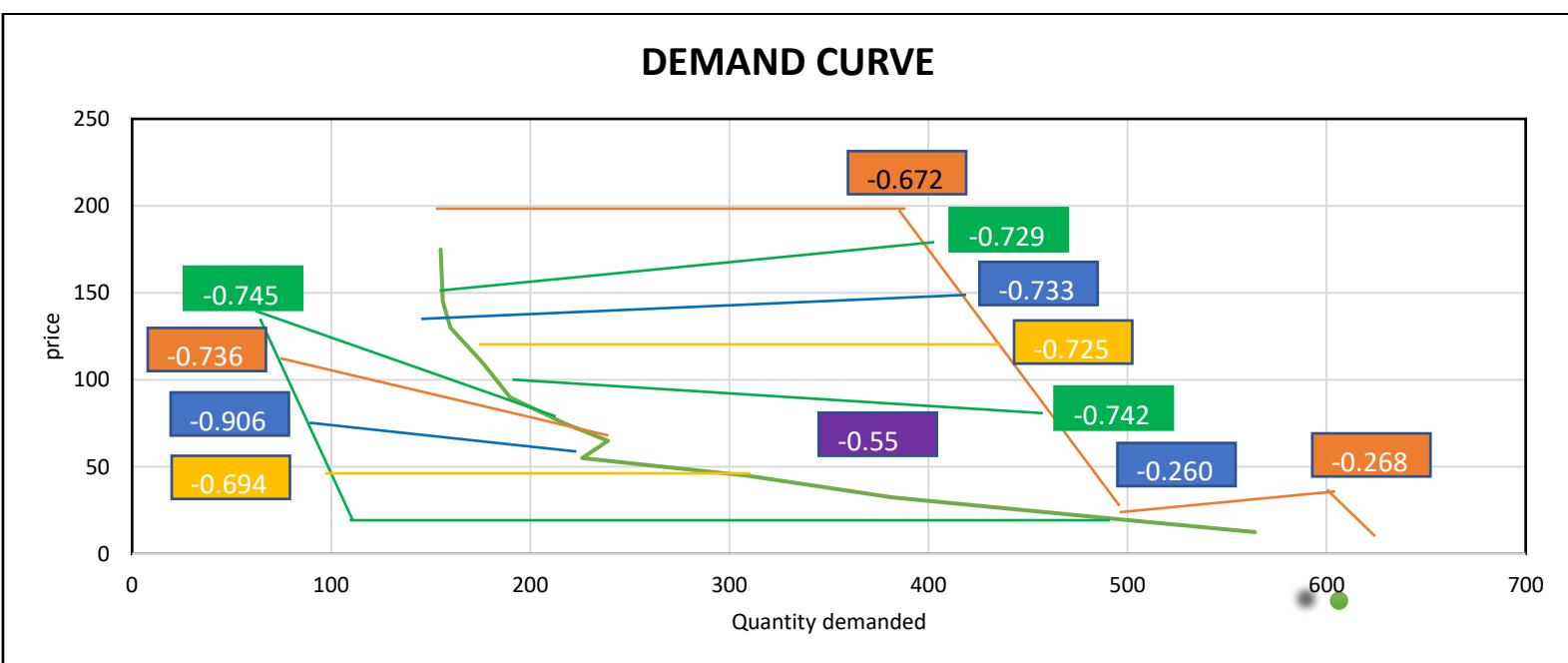
PRICE ELASTICITY OF KIWI

Since kiwi is not a fruit used on a daily basis as owing to the factors seen above , the demand might be highly sensitive to the price of a kiwi.

One of the important objectives of the study was to determine the price elasticity of demand for kiwi. Since, the demand schedule and demand curve were already constructed the price elasticity of demand was easily calculated.

The method used to calculate the price elasticity of demand was the average (midpoint) formula of arc elasticity

price		quantity		change in		Average		PED
from	to	from	to	price	quantity	price2	quantity3	
25	10	495	624	15	-129	17.5	559.5	-0.26899
25	15	495	564	10	-69	20	529.5	-0.26062
25	40	495	382	-15	113	32.5	438.5	-0.55834
25	50	495	309	-25	186	37.5	402	-0.69403
25	60	495	226	-35	269	42.5	360.5	-0.90608
25	70	495	239	-45	256	47.5	367	-0.7363
25	80	495	217	-55	278	52.5	356	-0.7454
25	100	495	190	-75	305	62.5	342.5	-0.74209
25	120	495	176	-95	319	72.5	335.5	-0.72563
25	140	495	160	-115	335	82.5	327.5	-0.73382
25	150	495	156	-125	339	87.5	325.5	-0.72903
25	200	495	155	-175	340	112.5	325	-0.67253

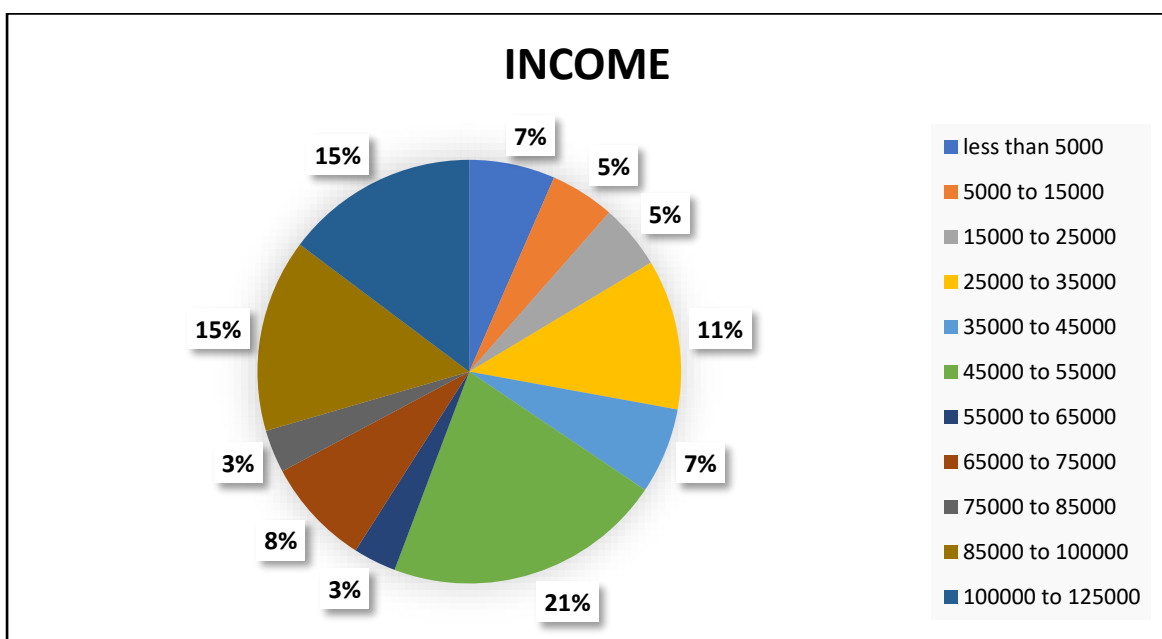


INCOME ANALYSIS

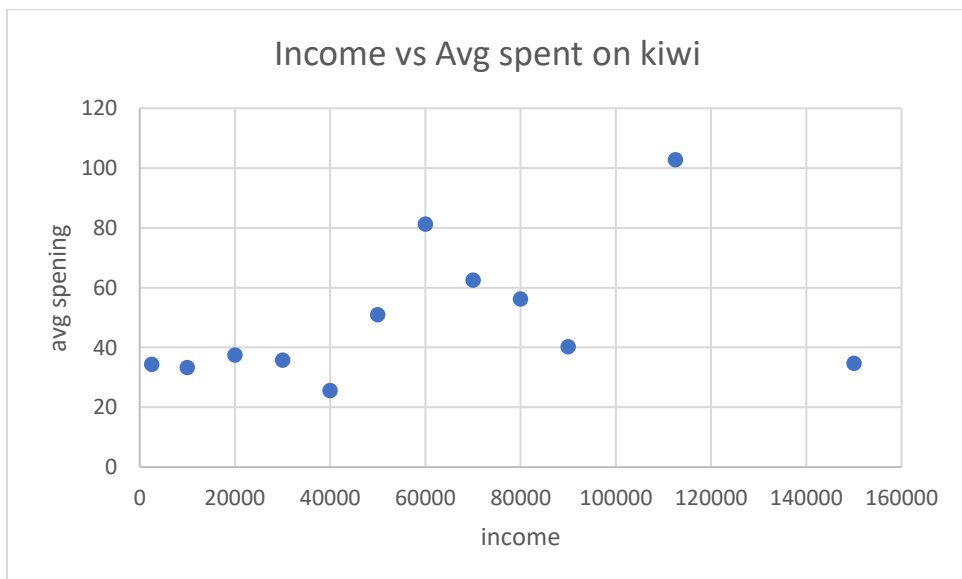
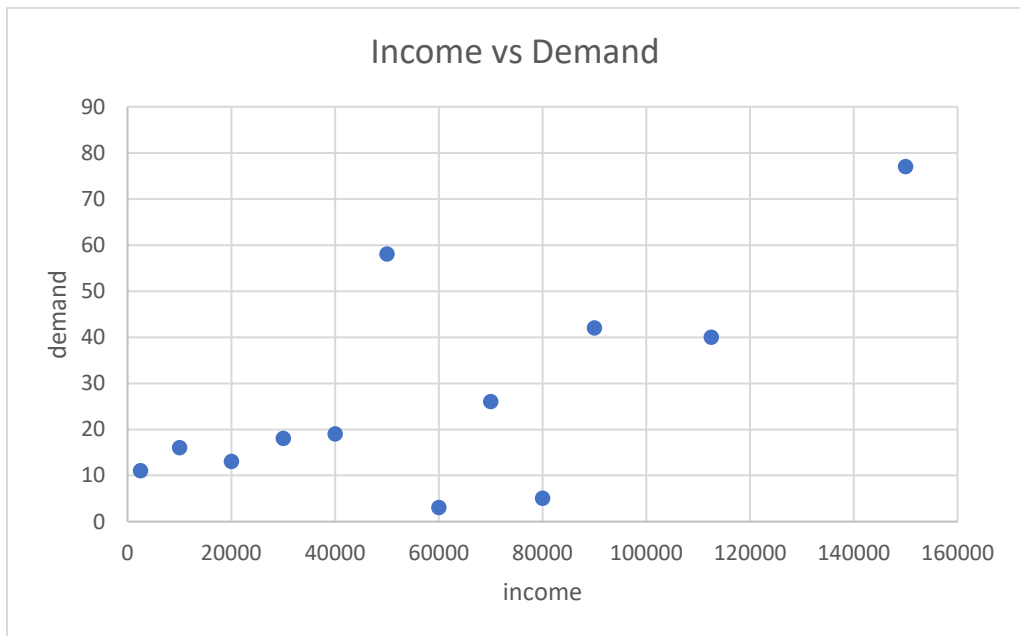
The questionnaire had asked consumers their average monthly income with a view to perform analysis between income and the demand for kiwi. This analysis consists of the number of kiwi purchased by an individual per month, average amount spent on buying one kiwi per month by an individual and average income spent on buying kiwi per month by an individual; in all cases the sample population was split on the basis of their average monthly income.

Monthly income	Number of people
less than 5000	4
5000 to 15000	3
15000 to 25000	3
25000 to 35000	7
35000 to 45000	4
45000 to 55000	13
55000 to 65000	2
65000 to 75000	5
75000 to 85000	2
85000 to 100000	9
100000 to 125000	9

The sample has an evenly distributed consumers in all income groups. Though the most was 45,000 to 55,000 .



income	nummber of kiwis total	number of kiwis average	avg spening on kiwi
less than 5000	11	2.75	34.375
15000 to 25000	13	4.333333333	37.5
25000 to 35000	18	2.571428571	35.71428571
35000 to 45000	19	4.75	25.625
45000 to 55000	58	4.461538462	50.96153846
5000 to 15000	16	5.333333333	33.33333333
55000 to 65000	3	1.5	81.25
65000 to 75000	26	5.2	62.5
75000 to 85000	5	2.5	56.25
85000 to 100000	42	4.666666667	40.27777778
100000 to 125000	40	4.444444444	102.7777778
more than 125000	77	4.277777778	34.72222222



It can be concluded that generally as the income increases, the number of kiwi purchased per month increases, the average amount spent on buying one avocado increase and the average income spent on buying kiwi per month also increases

CONCLUSION

The data when analysed helped understand features, availability, pricing, demand, supply, elasticity, market conditions and many other factors of kiwi.

The main reason as to why people purchase kiwi was found out to be as a fruit it self.

The availability of kiwi is above average in the market. The most common place of purchase was supermarkets followed by the local vendors.

It was found out that 52% people purchase kiwi in the price range of ₹25 to ₹50 which

The price elasticity of demand for kiwi was computed using the constructed demand curve. The elasticity varies along the demand curve. Majority of the price combinations indicated that the demand for kiwi is highly price elastic. The income analysis of the sample population concluded that as the income of the consumer increases, the number of kiwi purchased per month increases, the average amount spent on buying one avocado increases and also the average income spent on buying kiwi per month also increases.

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