Chapter Three: Data Representation and interpretation

Introduction

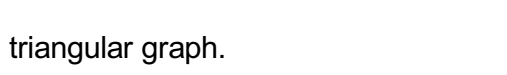
In this chapter I will look at the data that was collected in Reading, Pangbourne and the Tilehurst Triangle. I will use a variety of techniques to present the data I collected and will a nalyse the results carefully in order to prove right or wrong my hypotheses.

Section One: The Local Shopping Hierarchy

Before analysing my three centres I need to describe each location in detail. To do this I will use the results of the land -use mapping exercise, the environmental quality surveys and examples of annotated photographs and field sketches.

The triangular graph gives us a first impression of the types of shops the three centres have in them.

Figure 1
A triangular graph showing the percentage of high, middle and low order shopping centres in each settlement.



In Reading there is one low order shop, which is the lowest amount of the three, thirty two middle order shops, and sixty eight high order shops. This is because it is a high order shopping centre and therefore has more high order shops than low order shops. In Pangbourne there are nine low order shops, forty eight middle order shops and forty five high order shops. This is a middle order shopping centre and has more middle order shops than high or low order shops. The Tilehurst Triangle has eleven low order shops, three middle order shops and no high order shops. This is a low order shopping centre and has more low order shops than middle or high order sho ps. This is shown in the land use maps in figures 2, 3 and 4 on the next few pages. Figure 5 on the next page compares the shopping centre's shops in percentages. Reading has the highest percentage of high order shops, some middle order shops and one low order shop. Pangbourne has some high order shops, the highest percentage of middle order shops and a few low order shops. Tilehurst has no high order shops, a few middle order shops and the highest percentage of low order shops.

Figure 5

Shop Order	Reading %	Pangbourne %	Tilehurst %
High	67.3	44.1	0
Middle	31.7	47.1	22
Low	1	8.8	78

Environmental Quality Survey Results

The environment in Reading is very busy and well built up. It is quite clean and modern built, which is because it is only a few years old. It has the river Kennet running through the middle. In Pangbourne the environment is older and smaller because it is quite old and only a village. It is also clean and is built on a road. In Tilehurst there are not many shops. It is not as clean as t he other two and is built on quite a busy road.

Figures 6, 7 and 8 are environmental quality surveys for each of the centres. The total score for Reading is 6, Pangbourne is 4 and Tilehurst is 2. This shows that the higher the order the friendlier the env ironment gets. The results are presented in the bi-polar diagrams on the graph paper on the next two pages.

The annotated photos and field sketches below and on the next pages (figures 9-12) support the results of the environmental quality surveys.

Figure 9: Photo of Pangbourne (opposite Somerfields)

This photo shows that there are some middle order shops and around them it is quite clean, quiet and fairly safe.

Summary

The results so far show that Reading the high order shopping centre has more high order shops than the other two shopping centres and has a better environment. They also show that Pangbourne has more middle order shopping centres and a good environment. It shows that Tilehurst has the least shops most of which are low order and th at it has the worst environment of the three.

Section Two: The Hypotheses

Hypotheses One: People travel further to high order shopping centres than low order ones.

As you can see from the flow line graphs (Figures 13, 14 and 15 on the next few pages) and the questionnaire information in the table below (figures 16, 17 and 18), hypothesis one has been proved correct. Reading has a larger sphere of influence, as it is high order, than Pangbourne or Tilehurst and the answers to question 3 on the questionnaire show that the majority of people have travelled further to Reading than Tilehurst Triangle. An example of the questionnaire is attached to this section. This is further reinforced by the tax disc information in figure 19.

Figure 16

Reading	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Where have you come from today?	Tilehurst	Pangbourne	Woodley	Newbury	Tilehurst	Tilehurst	Caversham	Goring	Sonning	Henley	Caversham	Wallingford	Newbury	Caversham	Oxford	Woodley	Earley	Pangbourne	Purley	Tilehurst
How long did it take you to get here? (mins)	20	25	15	40	15	30	20	35	20	30	15	45	40	20	90	10	20	25	20	20

Figure 16 shows two questions from the questionnaire and the answers from the people asked at Reading. People that have travelled from Oxford to get to reading will not travel as far to get to Pangbourne or Tilehurst as there are shopping centres like them in Oxford as well. This helps prove that the hypothesis is true since the places from where the people have come are at a further distance from the shopping centre as the crow flies than those from Pangbourne or Tilehurst. An example would be that when travelling to reading people travel 15-90 minutes for example and when travelling to Tilehurst they take from 5-15 minutes. This is shown on the flow line maps in figures 12, 13 and 14.

Figure 17

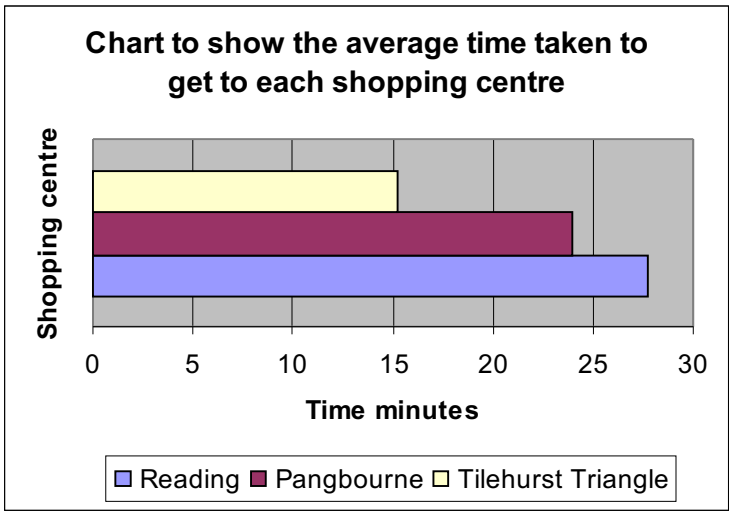
Pangbourne	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Where have you come from today?	Tilehurst	Pangbourne	Woodley	Newbury	Tilehurst	Tilehurst	Caversham	Goring	Sonning	Henley	Caversham	Wallingford	Newbury	Caversham	Tilehurst	Woodley	Earley	Pangbourne	Purley	Tilehurst
How long did it take you to get here? (mins)	20	25	15	40	15	20	20	35	20	30	15	45	40	20	25	10	20	25	20	20

Figure 17 shows the some questions from figure 16, but the answers are from people asked in Pangbourne. This further helps prove the hypothesis to be true. The total time taken get to Pangbourne is 680 minutes. This is higher than the total time taken to get to Reading. The Pangbourne results show that people are willing to travel for about 15-45 minutes to get to a middle order shopping centre. They will not travel for as long to get to Pangbourne than they would to get to reading but are prepared to travel for longer than they would to get to a low order shopping centre like Tilehurst. This may be because of the types of roads that you use to get to Reading will be motorway and A class roads where the speed limit is higher and perhaps a more direct route. Whereas the roads to Pangbourne are generally A and B class roads with a lower speed limit.

Figure 18

Tilehurst Triangle	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Where have you come from today?	Pangbourne	Calcot	Newbury	Woodcote	Lower Earley	Pangbourne	Bracknell	Tilehurst	Goring	Pangbourne	Henley	Tadley	Caversham	Woodley	Thatcham	Reading	Reading	Pangbourne	Pangbourne	Tilehurst
How long did it take you to get here? (mins)	10	5	25	30	20	10	25	<5	25	10	30	20	15	15	20	10	10	10	10	<5

Figure 18 shows the same questions as in figures 16 and 17 but the answers are from people who were asked in the Tilehurst Triangle. People travelling to Reading, in figure 16 s you can see the total time taken to get to the Tilehurst Triangle is 300 minutes which is much lower than the other shopping centres. Furthermore the places from where the people have travell ed from are in a much closer proximity than those of the higher order centres.



This chart shows the average time taken for each shopping centre. As you can see the largest time is for Reading and the smallest time is for Tilehurst.

The reason people travel further to high order centres is because there are less of them and they are more spread out. This is also because the sphere of influence is larger for higher order centres than low order centres. Also, the number and type of shops in each place will affect peoples shopping habits, for example, if there are lots of shops of the same order and type then there will be lots of competition and the prices will most probably be lower. Another thing that will affect peoples shopping habits would be if there are other attractions around the shops like a cinema in Reading for example. Attractions like this can make it more enjoyable for people to go shopping in that centre. The ease of transport to get to the centres can significantly persuade people to go for the easier route to a shopping centre and therefore affect their habits. This is shown on figures 13, 14 and 15. Furthermore there is a wider range of stores selling a variety of similar types of goods, for example, somebody looking to buy a television can go to a number of shops in Reading like Curry's to choose the exact model they require. Additionally the people may want to extend their shopping trip to include a leisure attraction like a trip to the cinema which cannot be found in the lower order centres.

Figure 19 - Car Tax Disc Record Sheet

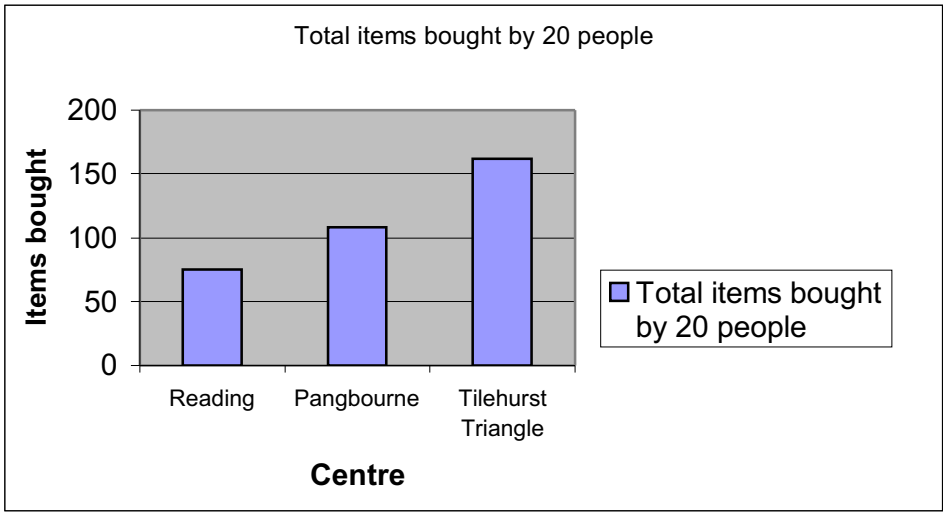
No.	Reading	Distance		Pangbourne	Distance		Tilehurst Triangle	Distance
1	Calcot	4km		Pangbourne	0km		Pangbourne	<10km
2	Pangbourne	9km		Mosely, Birmingham	>10km		Calcot	<10km
3	Basingstoke	18km		Fleet, Hants.	>10km		Newbury	>10km
4	Theale	8km		Cambridge	>10km		Woodcote	>10km
5	Wokingham	10km		Leighton Buzzard, Beds.	>10km		Lower Earley	<10km
6	Caversham	2km		Pangbourne	0km		Pangbourne	<10km
7	Reading	0km		Reading	>10km		Bracknell	>10km
8	Somerset	>50km		Theale	<10km		Tilehurst	<10km
9	Reading	0km		Pangbourne	0km		Goring	>10km
10	Newbury	25km		Pangbourne	0km		Pangbourne	<10km
11	Pangbourne	9km		Pangbourne	0km		Henley	>10km
12	Whitley	3km		Abingdon	>10km		Tadley	>10km
13	Wokingham	10km		Woodcote	>10km		Caversham	<10km
14	Reading	0km		Harold Hill, Romford	>10km		Woodley	<10km
15	Newbury	25km		Tilehurst	<10km		Thatcham	>10km
16	Southampton	>50km		Basingstoke	>10km		Reading	<10km
17	Tilehurst	5km		Reading	<10km		Reading	<10km
18	Bristol	>50km		Whitley	<10km		Pangbourne	<10km
19	Mortimer	10km		Pangbourne	0km		Pangbourne	<10km
20	Oxford	40km		Pangbourne	0km		Tilehurst	<10km

Figure 19 shows the location stated on the tax discs of cars selected from the first 20 we came across in Reading, Pangbourne and Tilehurst. This supports the hypothesis as being true because the total distance travelled to Reading is greater than 320km, for Pangbourne it is less than 120km and for Tilehurst it is less than 100km. However this is not particularly reliable since people can get their car tax anywhere in the country and not necessarily from their local origin.

Hypothesis Two: People buy more items at low order shops than high order

As you can see from Figure 20 below the total amount of items bought by 20 people is higher in the low order centre than in the high order centre.

Figure 20- Summary Graph



The graph above shows that the amount of items bought is higher at the low order centre and lower at the high order centre. This may be because more people shop on a regular basis for low order goods than higher ord er goods. This proves the hypothesis true. This information came from the questionnaire.

Figure 22

How many items will you buy today?	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
Reading	1	1	2	4	1	1	2	4	8	5	6	4	3	7	4	6	2	3	5	6	75
Pangbourne	5	10	8	5	13	4	3	8	4	2	8	6	9	10	9	5	8	2	3	3	125
Tilehurst triangle	6	9	10	9	7	6	4	1	2	8	5	3	11	3	9	10	11	8	30	15	167

This table shows that the amount of items bought increases the lower down the order you go. This supports the graph.
This is true because when you go to a low order shopping centre to get your weekly shopping you buy lots of items for your needs like bread and milk. The number and type of the shops around will influence the shopping habits of people. If the quality of the environment is good then this will attract shoppers. If it is bad however they may go elsewhere. The photo of Pangbourne shown earlier showed that Pangbourne had ok environmental results and therefore will not have much affect on the customers. As reading is more attractive and modern people are attracted more to go and shop there and further more they will want to spend more there and effectively buy more items. Also low order goods usually cost less than high order goods so you can afford to buy more. For example, if you have £50 to spend and you go to a high order shop to buy something, you could only probably buy one item like a small television, whereas if you went to a low order shop with the same £50 you could probably buy up to 40 items. The time spent in a low order centre is usually shorter than the time spent in a high order centre because when people shop in low order centres they know what they want and there is less variety of low order goods than high order ones so they spend less time choosing and spend more time collecting what they need.

Hypothesis 3: People spend more at high order shops than low order.

The questionnaire information on figures 21, 22 and 23 and figure 20 (in hypothesis 2) shows that hypothesis 3 has not been proved right or wrong . This is because although the individual products cost less at a low order centre the amount bought is much higher and therefore the amount spent relies on the amount and type of goods purchased. This hypothesis can be linked with hypothesis two as the percentage of items bought in low order shops is higher than the percentage of items bought in high order shops. However, as the items in high order shops are more expensive people may still buy more in high order shops.

Figure 22

Reading																				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
How many items will you buy today?	3	1	6	4	1	2	2	7	12	5	9	4	3	7	4	6	9	3	5	15
What will be the most expensive item you intend to buy	Clothes	CD	Books	Clothes	Stereo	Shoes	TV	Clothes	Gift	Jewellery	Stationary	Lunch	Clothes	Make - up	Clothes	Video	Stationary	Clothes	Clothes	Clothes

Figure 22 shows two questions from the questionnaire and the answers are from people who were asked in Reading. The total amount of items bought is 108 most of which are high or middle order goods.

Figure 23

Tilehurst triangle																				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
How many items will you buy today?	12	17	20	18	14	11	8	2	3	15	9	5	22	6	17	20	30	15	40	20
What will be the most expensive item you intend to buy	Stationary	Meat	Groceries	Groceries	Prescription	Cake	Stationary	Haircut	Lunch	Milk	Medication	Cigarettes	Groceries	Flowers	Petrol	Meat	Beer	Meat	Alcohol	Chocolates

Figure 23 shows the same questions as in figure 22 but the answers were from people who were asked in Pangbourne. The total amount of items bought is 210. This helps prove that the hypothesis is neither true of false

Figure 24

Tilehurst triangle																				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
How many items will you buy today?	12	17	20	18	14	11	8	2	3	15	9	5	22	6	17	20	30	15	40	20
What will be the most expensive item you intend to buy	Stationary	Meat	Groceries	Groceries	Prescription	Cake	Stationary	Haircut	Lunch	Milk	Medication	Cigarettes	Groceries	Flowers	Petrol	Meat	Beer	Meat	Alcohol	Chocolates

Figure 24 shows the same questions as in figures 22 and 23 but the answers

were from people who were asked in the Tilehurst Triangle. The total amount of items bought is 304. This helps prove that the hypothesis is neither true nor false because it is much higher than the total for Reading but most of the items bought are middle order and a few low order ones.

From my results I have already found out that the prices of the high order goods are significantly higher than lower order

The reason that this hypothesis has been proved neither right, nor wrong, is because some high order goods are very expensive and some are not. Also the quantity of low order goods bought is much higher than high order goods. This compensates for the price difference. This tells us that people spend more at high order shops than low order ones.