How and why is land use changing within the El Raval area of Barcelona?

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Introduction

The area of El Raval, a quarter of the medieval district of Barcelona is now going through big changes, which I wish to investigate throughout my study. Until not so long ago El Raval of Barcelona was one of the most dangerous parts of the city and one of the most densely populated areas of the world. Therefore levels of crime, violence and prostitution were also very high.

In Catalan, "raval" means suburb. In the late 1400s there were new walls built all around the city of Barcelona to enclose the Raval.
Until the 1800s el Raval was not as full of buildings and factories as it is now. Until then there were only a couple of small market gardens that supplied the city with food. The south was mostly inhabited by the poor people, because they were not allowed to be in the richer area, Barri Gotic.

By 1850, as the Industrial Revolution was also affecting Barcelona, el Raval was rapidly filling with cheap housing for the workers from the countryside and textile mills powered by coal. These building were several storeys high to save space, as the whole city of Barcelona was still tightly packed within its very big walls. These buildings were high rise slums – bad living conditions for everyone, as the toilets and water were shared in the courtyard of each block. Illnesses were rapidly expanding and death rates were high – mostly dieing in their late teens.

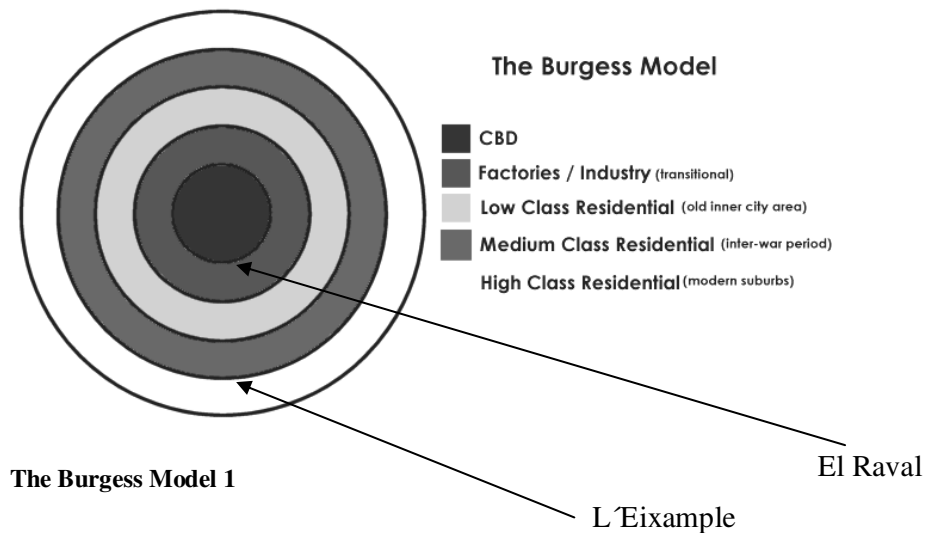**Barcelona- L`eixample, Barri Gótic and El Raval**

This image shows how dense the Raval area is in comparison to the surrounding, L'Eixample which was built later. It is clear from the image that people in the medieval Barcelona had and still have way less space to live in.

There still were older industries that were competing with the mill industry, such as brick making, slaughtering and tanning leather, and there were considered too dangerous or polluting to be placed in the Bari Gotic old city area where the richer people lived.

The area always was and still is a home for the poor people. It got a label of "Barrio Chino" (Chinatown) in the 1920's by a local journalist Francesc Madrid, who was inspired by a movie about vice in San Francisco's Chinatown and although el Raval has no Chinese connections, this new name got adopted very quickly. El Raval was always the underworld centre of Barcelona.

The ongoing urban reforms have changed a little part of the district, and there are yet many more changes to be done. The purpose if this is to change the area and make it a better place, as Barcelona is one of the important cities of the world.

In the Burgess land use model we see that the city tends to grow as it ages. Surrounding the Central Business District, where all the business centres, offices, shopping malls and no open space, we have an inner city zone, or the old factory zone, which contains also the oldest and highest concentration housing – turning into slums. The inhabitants are mostly poor social groups and first generation immigrants. That is where the Raval area is. It used to be the suburbs with cheap housing a couple of centuries ago.

The Burgess Model

CBD

Factories / Industry (transitional)

Low Class Residential (old inner city area)

Medium Class Residential (inter-war period)

High Class Residential (modern suburbs)

El Raval

The Burgess Model 1

L´Eixample

Some of the main changes were in 2 phases. The first one was the setting up of the Contemporary Art Museum, the Geography University and the

second phase was the building of a new 5 star hotel right in the centre of Rambla de Raval, and the new street that goes through the centre of el Raval. The government is also making some changes in the appearance of el Raval in general. For example, demolishing some of the slums and widening the streets. Most of the streets were built to be wide enough only for a horse carriage to pass through, and as the building are 5 or 6 storeys high, not much sunlight gets into the area, and that creates a perfect setting for drama.

The Generalitat de Catalunya, the local Catalonian government, has learned from the unsuccessful attempt to change the inner cities. They have seen how Margaret Thatcher unsuccessfully tried to invest into education and facilities with no positive response. The Barcelona government is therefore trying the opposite - changing the area by changing the people.

The plan of the government for museums, hotels and universities is to draw new people and new money into the Raval. In the Geography University for example, there were no cafeterias, so about 6000 students had to go out into the Raval and spend their money there and try and affect the local businesses. Also the Hotel is very cheap for a five star hotel, so many people come to the Raval and bring new money into the area.

The current situation of Raval is displayed on the cycle of poverty. Poor employment leads to poverty, which then leads to crime, poor housing, stress and strain. That then causes poor health leading onto inadequate education, because ill children cannot attend school daily and also poor employment again, because usually people do not work when they are in poor health. And so the cycle goes on and on again.
The aim of the generalitat de Catalunya is to break that cycle. They want to do it by bringing new money and jobs into the area.

The Poverty Cycle

In my study I wish to investigate how these changes were effective in changing the area.

Where is El Raval?

El Raval is in the region of Catalonia in Spain, which is situated in southwest Europe. It is in the medieval area of Barcelona, the capital city of Catalonia.
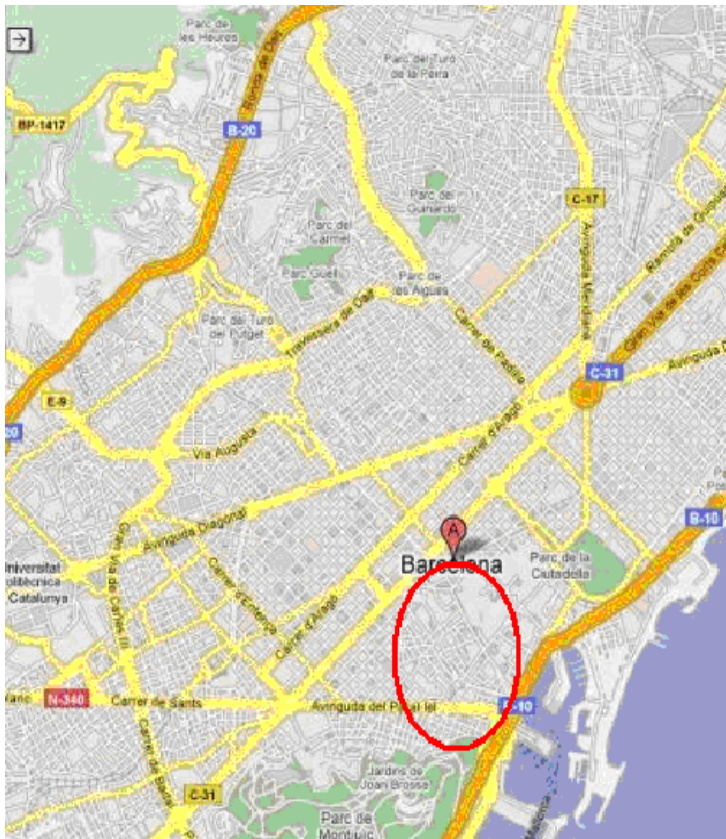

simplified map of Europe

enlarged map of Spain

enlarged map of Catalonia

enlarged
map of
Barcelona

enlarged map of El Raval

Aims of the Study

In this study my aim is to identify the changes in land use in the different parts of el Raval and analyze the differences.

To get the data I need to analyze my study, I will need to collect random samples from zones of the Raval in order for my data to be reliable and not biased.

I divided the Raval into four representative areas, so the differences in the social, economic and life quality are visible.

I also plan to compare present land use with historical records in, so I can identify land use changes over a long period of time.

I also want to see if the changes have helped El Raval to change to a better place. That is if the urban re-branding was successful so far.

Methodology

The method being used to identify the changes in the environmental, economic and social characteristics of el Raval is to take random samples from representative areas of the zone. The other method is to carry out a census, which takes a very long time and involves collecting all the data about every street in the zone, but as I only have a limited amount of time to explore the Raval and write this study I will rather take random sampling as an option.

I identified four representative areas based on a pilot study, each differing socially, economically and environmentally. I made sure that they were more or less the same size and that they were randomly chosen to avoid bias. They were the North East, North West, South East and South West.
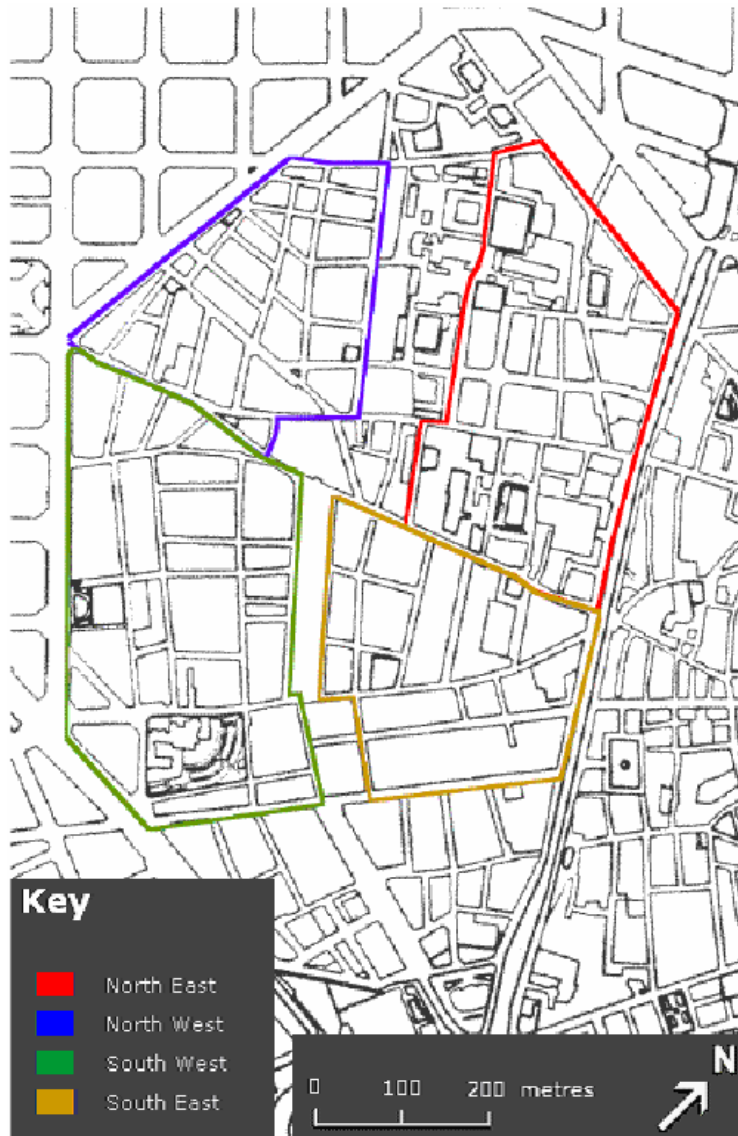
The representative areas of el Raval

The Northwest zone has traditionally been more residential then industrial, but census data reveals that the levels of deprivation are the lowest in the district.
The Northeast zone was the location most favoured by convents and monasteries during the medieval times. It had been the location in which recent redevelopment has taken place in order to renew the culture. A cultural axis has been built connecting the area with the Opera House located on the Rambla.
South west zone: has the majority of the steam powered factories located during the 19th century, when the Industrial Revolution was taking place. It still has a bit of the industrial atmosphere today.
The South east zone reveals urban decay at its worst in many streets. It was traditionally the red light district and the centre of the underworld.

But the problem is that the representative areas are still very big to collect data and we have a limited amount of time. And the areas need to be more stratified, so what I did is found a random sampling zone within each of those areas. To avoid any possible bias I put a numbered grid over each of the maps. The image below is the map of the northeast part of El Raval with a numbered grid.

The Grid overlaying map

I need to use random numbering in order to avoid bias. I get those either by using the random number button on my calculator (Ran#) or by using a random number generator. An example of a Random Number table is shown below.

Random Number Table

30	50	22	33	79
81	66	16	15	95
24	31	99	26	11
63	80	80	10	57
83	76	95	43	13
10	10	70	44	79
06	31	37	52	72
73	07	66	35	19
82	86	20	56	53
84	02	93	51	30
31	39	84	93	16
60	27	06	67	85
64	41	82	40	67
08	52	82	61	41
24	11	32	64	57
16	18	30	19	89

Then what I do is correlate these numbers with the grid overlay over the map and select my sampling zones. It is very important that the sampling zones are approximately the same size so our results are valid.
The map below shows my sampling zones.

Sampling Zones

What I plan to complete is the land use map and also an environmental and perception survey and a residential decay survey, which had all been prepared earlier. Before completing the papers though, I walked through all the streets and made myself familiar with them, because if I did not know the zone at all, I would have made very unreliable results show in the first part of the survey due to over estimating the bad qualities of the areas. Then finally I completed the worksheets and checked if my readings were accurate.

Index of Residential quality

In the residential decay survey I am going to categorize six qualities into 6 features.

	Much	Some	Little	None
Deterioration of walls	0	1	3	5
Part peeling	0	1	2	3
Broken glass in windows	0	1	3	7
Structural damage e.g. settling cracks	0	3	6	11
Rotting timber	0	2	4	8
Broken gutters, etc.	0	1	3	7

Score	Physical condition of buildings
33 - 41	Good/excellent
23 -32	Satisfactory
14 - 22	Generally unsatisfactory. May be bad in specific parts
5 -13	Action needed in very near future to improve structure
Below 5	Need to demolish or rebuild

FINAL TOTAL

The total score will be calculated by subtracting the negative score from the positive score. The higher the total score, the better quality of the area. Then I can compare the total scores of each sampling zones with each other, and that way conclude which area has the best qualities.
There are different score numbers available in the question paper relating to the quality, and if the score is highest for that one feature, then there is none of it. For example, if I chose the highest score for part peeling, I am showing clearly that there is none of it on the buildings I am walking by. And if my score is lowest, it means that there is much of it there. In all cases that lowest score is zero, whereas it differs as the quality of the building increases and that shows the change of land use to the better. The score increases as the land use changes throughout the whole area over time.

Environmental survey

The copy of the worksheet is shown below

Location:

Method: Record data for a 100 metre section **BOTH** sides of the street at the sampling location. As this is a subjective survey it should always be completed by the same person.

Feature	Score	Feature	Score
Landscape quality Trees and well-kept grassed spaces. 8 Few trees and/or unkept grassed spaces 4 No trees or grassed spaces. 0		**Noise** Normal residential standard - quiet 5 Above residential standard - with some noise 2 Main street standard - very noisy 0	
Derelict (waste) land None 10 Small area 4 Large area 0		**Air pollution** No offensive smells or obvious air pollution 10 Offensive smells and/or obvious air pollution 0	
Litter/vandalism No litter, no vandalism 8 Some litter or vandalism 4 Very untidy, much vandalism 0		**Access to Recreational Amenities** Nearby Park visible 4 Some street seating, but no visible Park 2 No street seating or visible Parks 0	
Industrial work shop premises All residential properties 10 Some work shops 5 Mainly industrial work shops 0		**Traffic flow** Normal residential traffic 6 Above normal residential traffic 3 Heavy vehicles and through traffic 0	

As we go through our sampling zone we mark each feature as needed and then we add up the score. The higher to amount of total points, the better the environmental quality of the area, and the lower the amounts of total points, the lower the quality of the area. The quality of the area is related to how the land use changes over time. If the quality is better then in some other areas, the land use there has changed.

This image shows one of my classmates at work. She was ticking the worksheet about the environmental quality. She has a whole lot of sheets to fill out, from which we will later extract data.

<u>Perception Survey</u>

 This section is based on my personal perceptions and opinions about the safety of the sampling zones. The zones are judged by looking at both positive and negative aspects of the area and it is better if its done by only one person to have only one point of view so the results are not affected. The copy of the worksheet I was given is shown below.

Location:
Method: Record data for a 100 metre section BOTH sides of the street at the sampling location.

POSITIVE QUALITIES	VERY STRONGLY FELT	STRONGLY FELT	FELT	NOT FELT
SCORE	3	2	1	0
Rich				
Safe				
Friendly/relaxed				
Improving				
Community atmosphere				
Attractive area				
TOTAL POSITIVE SCORES:				
NEGATIVE QUALITIES				
Poor				
Dangerous				
Declining				
Risk of crime				
Unattractive area				
Vandalised				
TOTAL NEGATIVE SCORES:				
OVERALL SCORE:_____ (Positive/Negative)				

The total score will be calculated by subtracting the score of the negative qualities from the score of the positive qualities. The higher the total score the better are my opinions and perceptions of the area. When I have the

scores from all four sampling zones, I can compare them and see which zone appears to be the safest and it also gives an idea about the economic state of the representative areas. We can also detect the land use changes within el Raval by looking at graphs we made with the collected data.

Index of Services and Amenities

This section shows us the amount and the quality of the service branches in El Raval. In my table they are divided into the type of service (bars and restaurants, banks, personal services, etc) and the quality. That is given by a number from 1 to 3. If the number is 1, then the service is there only for the locals and its not expensive and tourists would rather avoid them. If its marked with a 2, it tells us that the service is for both locals and tourists, and 3 is only for tourists, as locals would not be able to afford that. The more 3 shops are in the zone, the more gentrified the area is. We can see that the land use has changed by that.

A copy of the work sheet is shown below.

Weighting

1: Services used by traditional resident

2: Services used by tourists and traditional residents

3: Services most used by tourists or luxury items

Service	Weighting (w)	Number seen (n)	w x n
Closed Premises	n/a		n/a
Bars and restaurants	1		
	2		
	3		
Food and drink (shops)	1		
	2		
	3		
Banks	1		
	2		
	3		
Offices and professional services	1		
	2		
	3		
Services to the home e.g. Hairdresser, Dry Cleaner	1		
	2		

	3		
Services of poverty e.g. Electrical Repair	1		
	2		
	3		
Clothing and shoes	1		
	2		
	3		
Bookshops and Art Galleries	1		
	2		
	3		
SUBTOTAL			

OTHERS: please specify

Service	Weighting (w)	Number seen (n)	w x n
	1		
	2		
	3		
	1		
	2		
	3		
	1		
	2		
	3		
SUBTOTAL (from previous page)			
TOTAL			

Price of a certain product across El Raval.

Unlike other surveys, this one is not based going through the sampling zones, but through el Raval as a whole. We chose a transect line that is on an environmental gradient. To avoid bias, we chose to ask for the same product in all shops. In this study I will be asking for the price of a bottle of coca cola. The transect line is chosen to go from the Contemporary Art Museum and the Rambla de Raval. Both of these points are in different zones, so both will have differing social, economic and environmental qualities. The transect line is shown below.
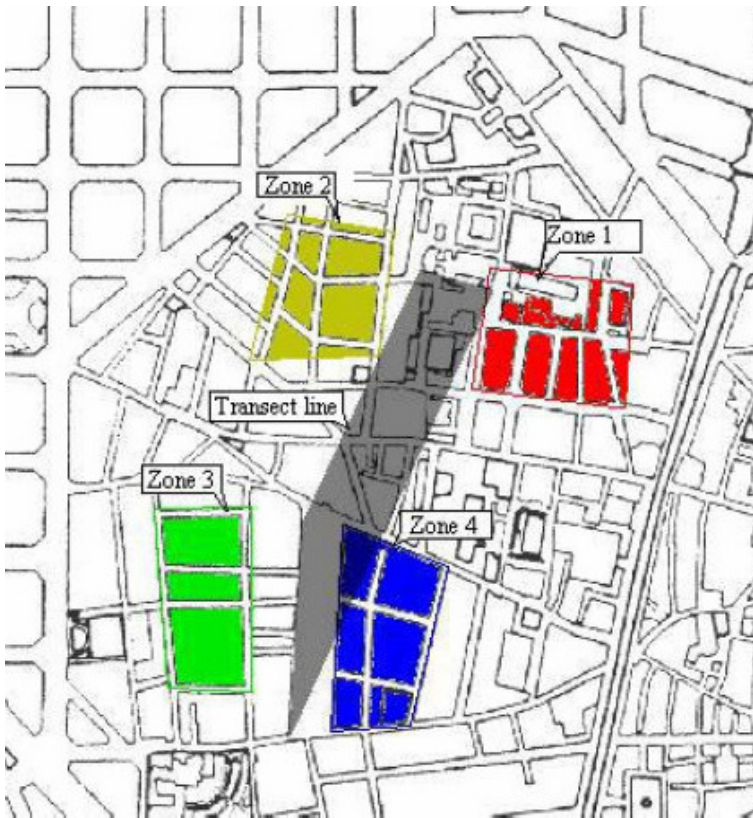
Transect line through the Raval

As we move further away from the CAM, we would expect that the price of the item (coca-cola) will decrease, because we move further away from the gentrified zone where people with more money are. From the results we could predict the economic changes. This is called hypothesis testing.

Problems associated with data collection

Common Sampling Problems

Sampling Sections or Quadrats
Problem 1: The size of the representative area is too large. we only have a limited amount of time and it is impossible to walk through and pick data from the whole of el Raval. We need smaller sampling zones.
Problem 2: As the layout of the Raval is differing in every street, it is hard to make equally sized sampling zones, usually sized 100 by 100 metres. We have to arrange the shape of the sampling zones.
Problem 3. We will not identify the environmental gradients nor transition zones across an area using quadrats. A transect line is better for this purpose.
Problem 4. It will take a long time to measure everything within a sample zone, so what we do is select a 100 metre street section, if it is necessary.

Factors affecting Sampling Reliability

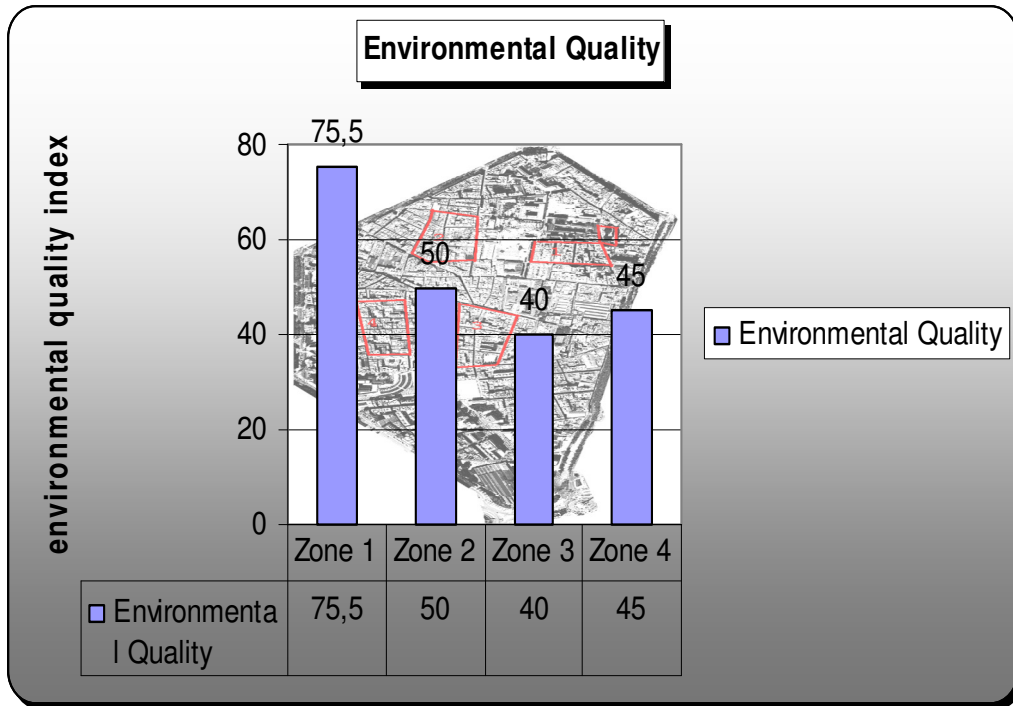| Factor	How reliability is affected
Time of Day	Many shops and other services are closed between 1.30pm and 5pm. Gentrified restaurants and cafes open often only at nighttime, from 8pm to 2am and may be shut during normal working hours, when we are doing the study. Therefore we do not get to see the real life in the Raval. Conducting a street questionnaire during a weekday morning is biased against working people and biased towards the retired and elderly. Perception surveys often have their most negative results when the researcher is tired or hungry.
Weather and time of year	The results are also affected by the mood of the person that is actually taking the samples. If the weather makes the person feel negatively, the perceptions are affected and opinions on safety are lowered as well.
Shock of the unexpected	If you have never been in the Raval, it might be a shock for you and you will end up giving worse results to the zones because of the expectation you have ha before. The solution for that is to walk the zones beforehand.
Keeping consistency in the same level	Its important for the results to be taken by one person, so the results wouldn't be biased. If more people work out one sheet, different tastes are visible on the results.
Access difficulties	Some areas may be dangerous, closed off or inaccessible for other reasons. Avoiding these zones will affect the reliability of your results.

Data Presentation

In my study I will use different types of graphs to show my data, because it might make the comparing of data easier.

The Bar charts are good for showing how the data changes as we go from one zone to the next.
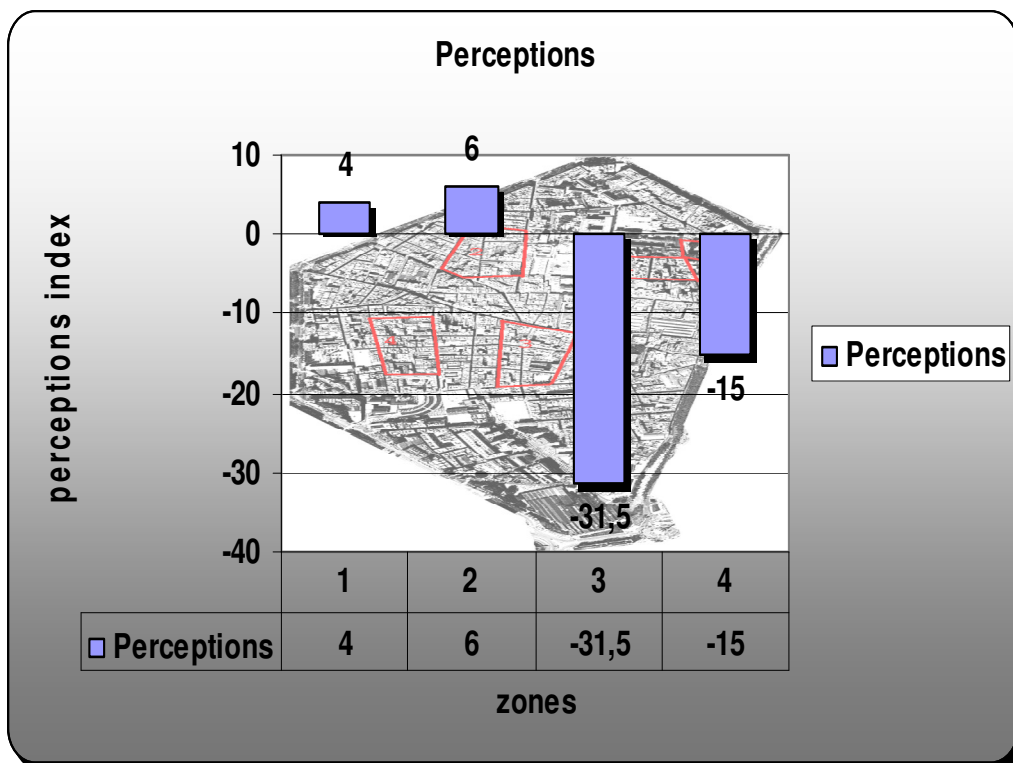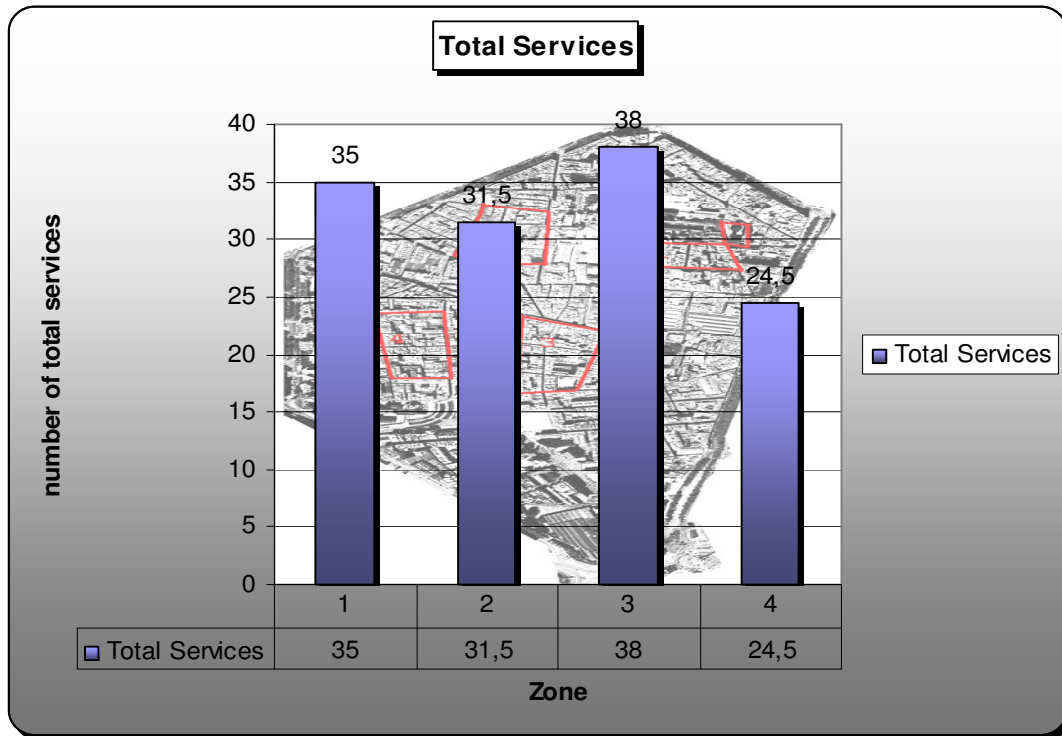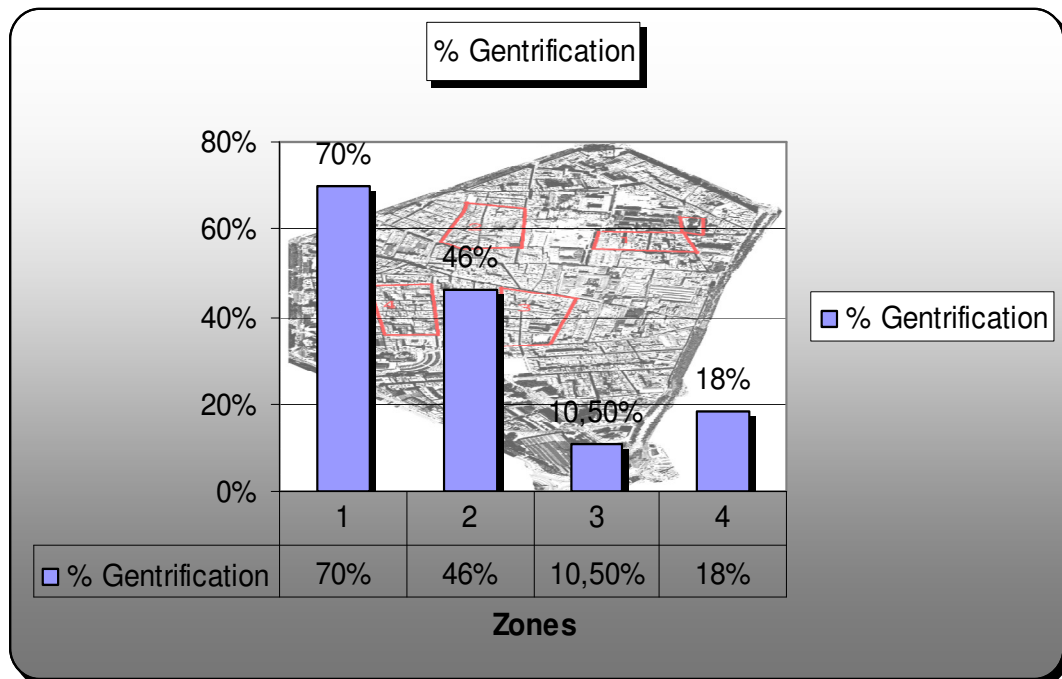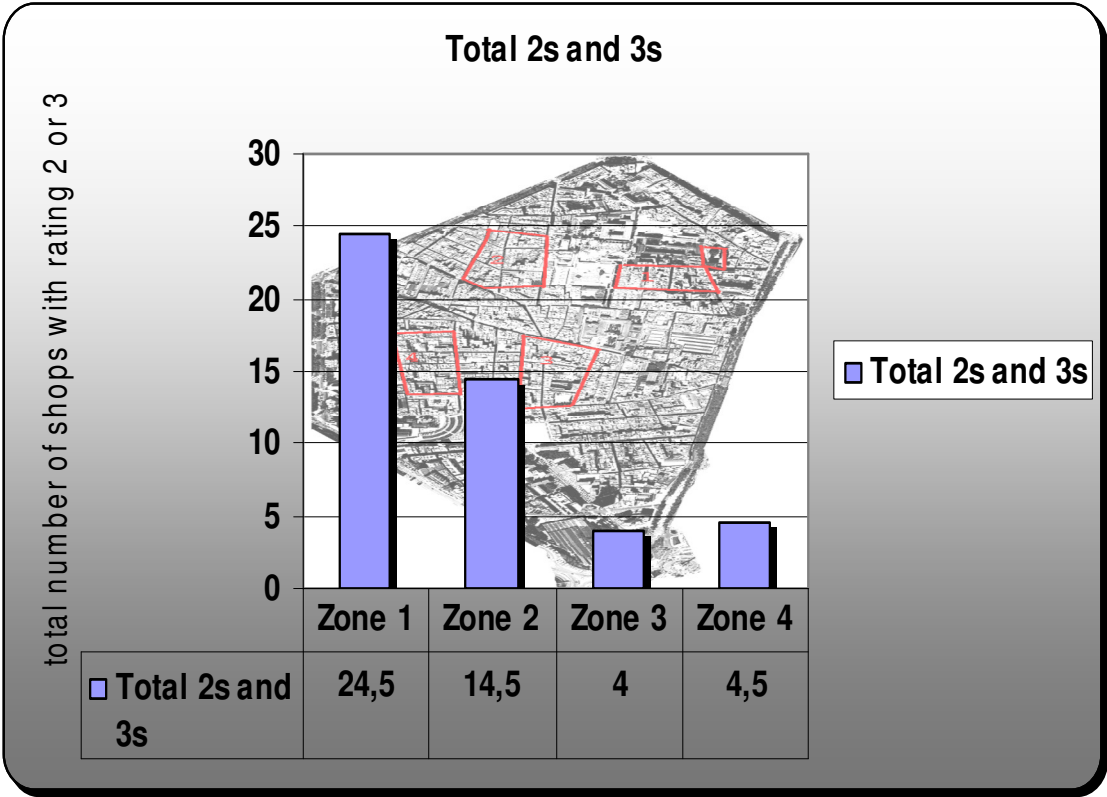
Graph 1

Residential Quality

	Zone 1	Zone 2	Zone 3	Zone 4
☐ Residential Quality	47,5	32	16,6	30

Graph2

Graph 3

Graph4

Total Services

	1	2	3	4
☐ Total Services	35	31,5	38	24,5

Zone

Graph 5

% Gentrification

	1	2	3	4
☐ % Gentrification	70%	46%	10,50%	18%

Zones

Graph 6

Total 2s and 3s

	Zone 1	Zone 2	Zone 3	Zone 4
▫ Total 2s and 3s	24,5	14,5	4	4,5

total number of shops with rating 2 or 3

▫ Total 2s and 3s
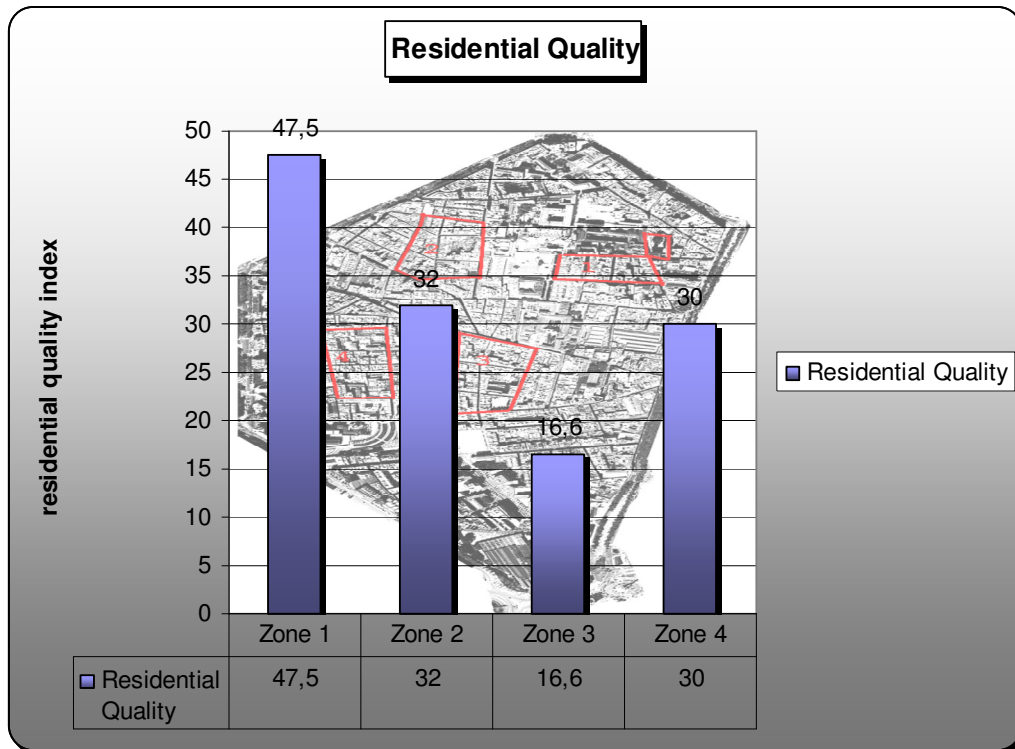
Radar Graphs are useful for showing a range of all different data values for different features (e.g. perceptions: rich, poor, dangerous, safe, etc) all on one diagram. The shapes of the diagrams for each different zone can be compared and the differences identified and explained.
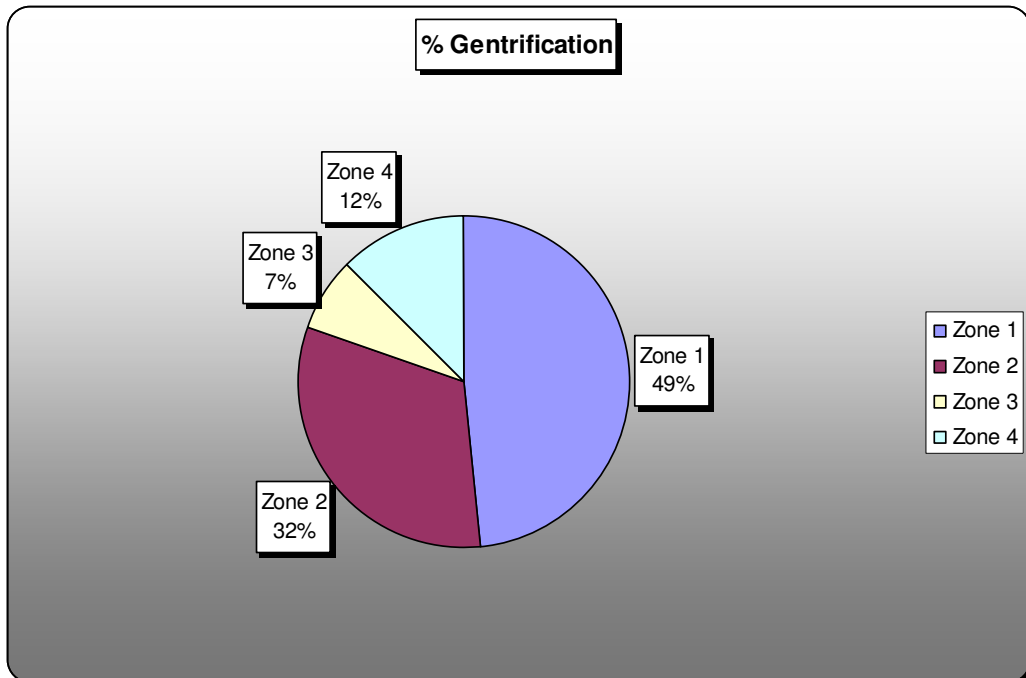
Graph 7
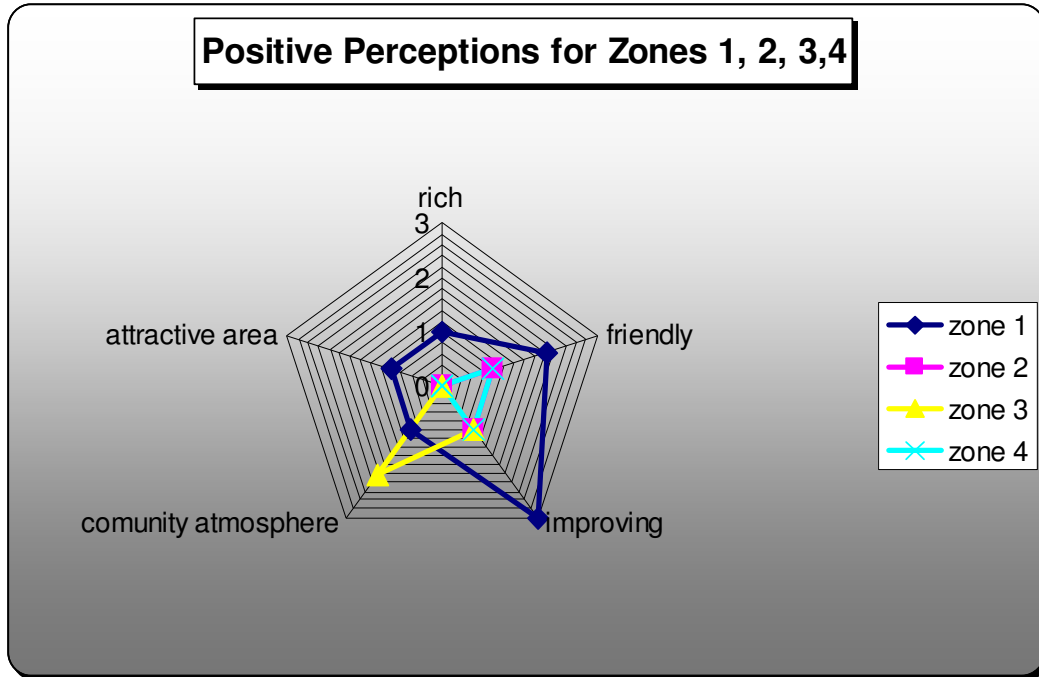
Graph 8
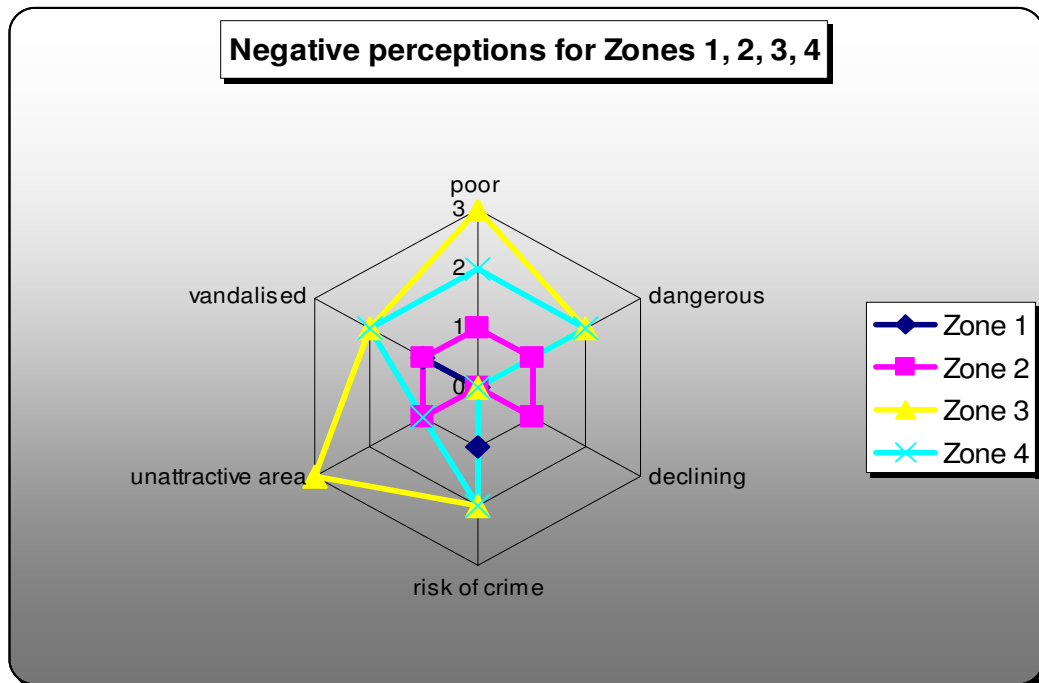
Pie charts show the proportions of multiple classes of data, and easiest to undertand because they are visuably simpler than other graphs.
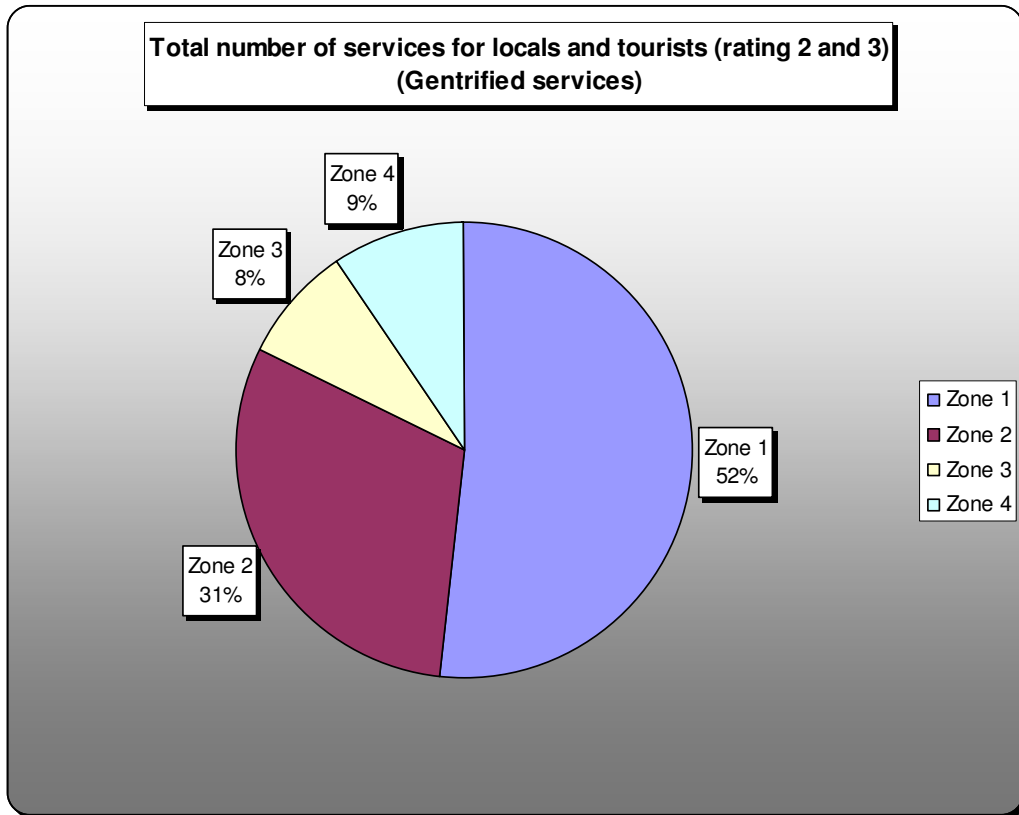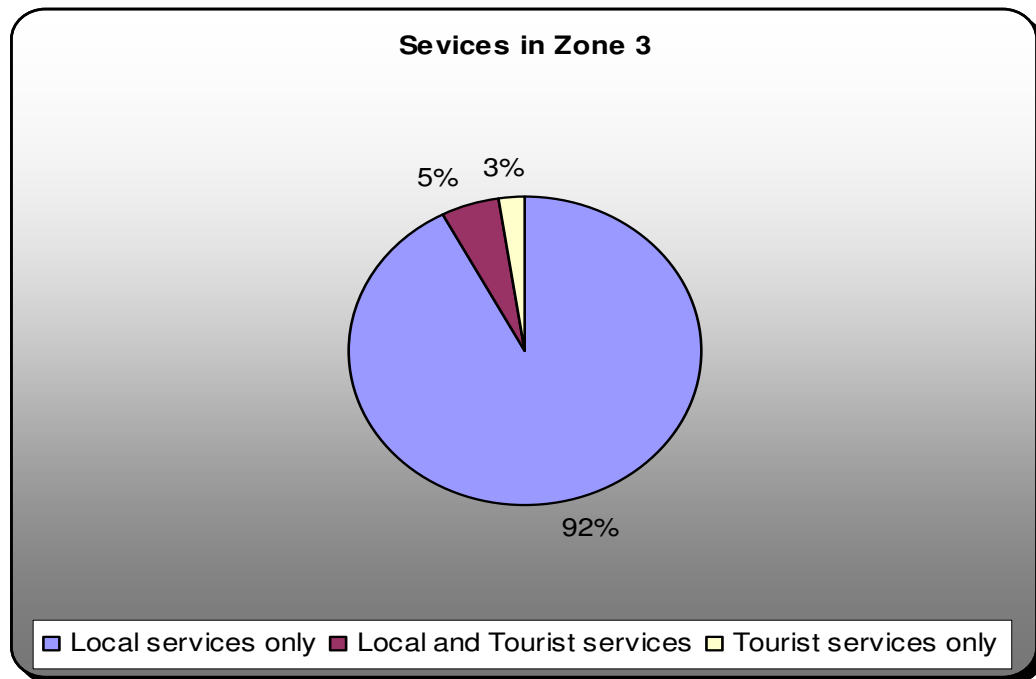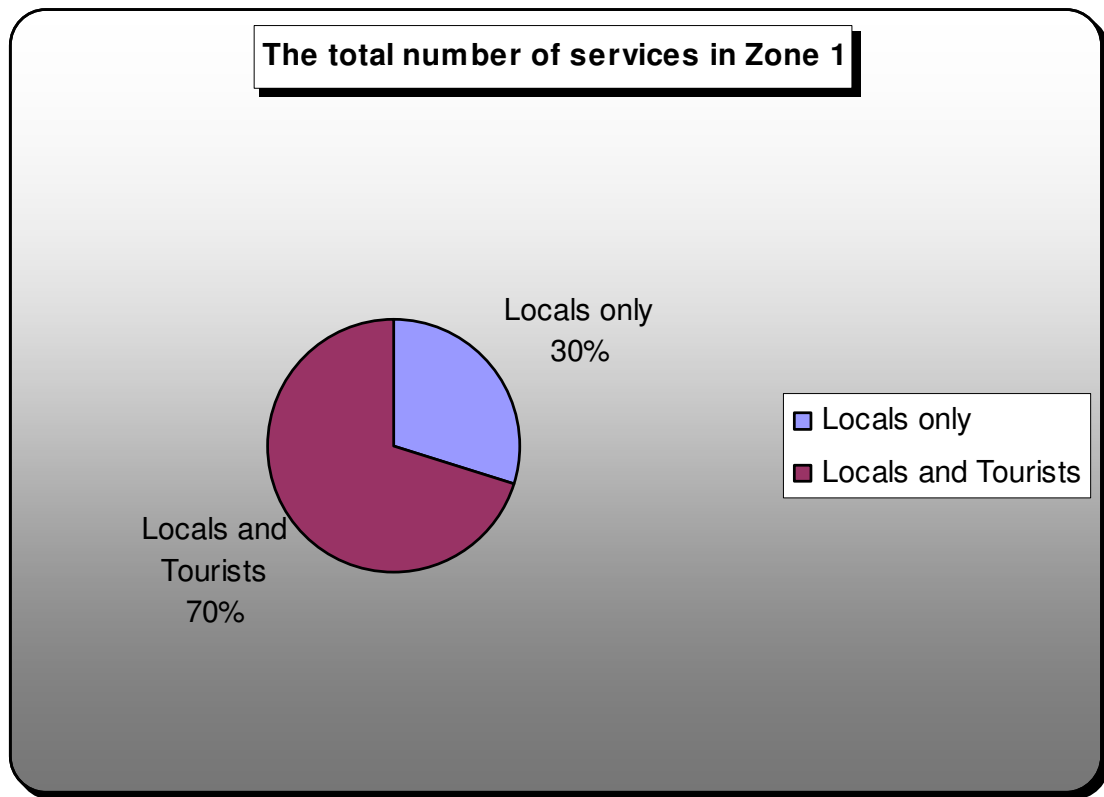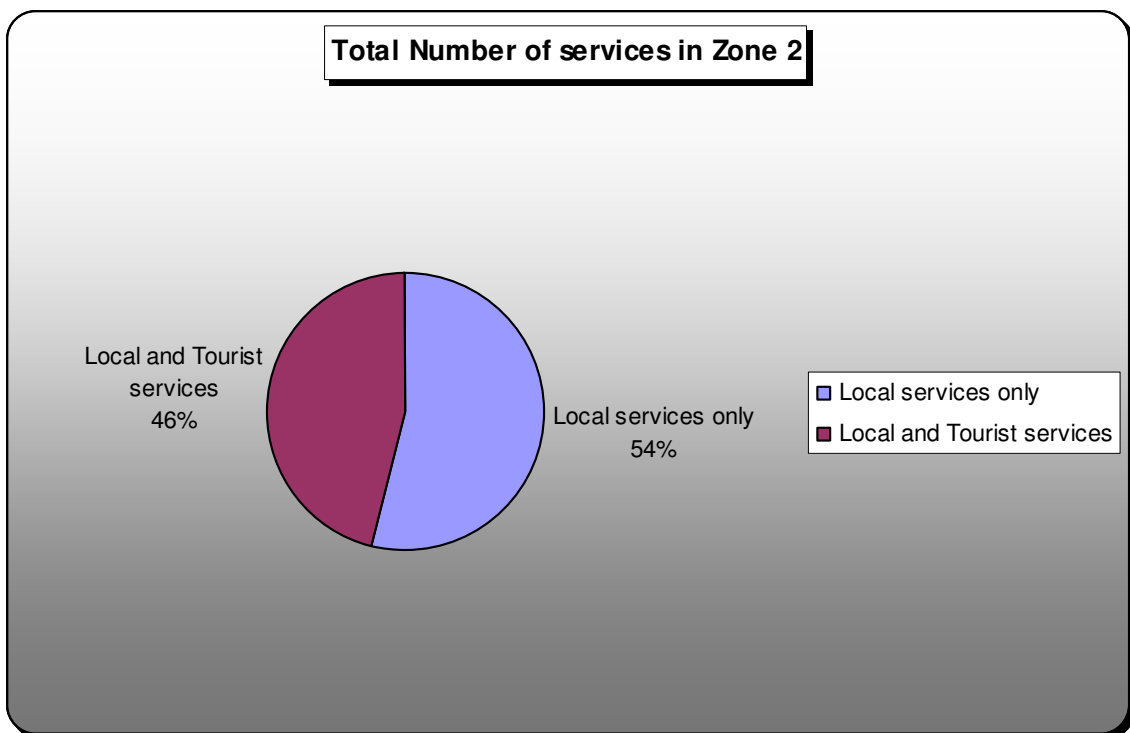
Graph 9

Total Services

Zone 4
19%

Zone 1
27%

Zone 3
30%

Zone 2
24%

Zone 1
Zone 2
Zone 3
Zone 4

Graph 10

% Gentrification

Zone 4
12%

Zone 3
7%

Zone 1
49%

Zone 2
32%

Zone 1
Zone 2
Zone 3
Zone 4

Graph 11

Total number of services for locals and tourists (rating 2 and 3)
(Gentrified services)

Zone 4
9%

Zone 3
8%

Zone 1
52%

Zone 2
31%

Zone 1
Zone 2
Zone 3
Zone 4

Graph12

Sevices in Zone 3

5%   3%

92%

Local services only   Local and Tourist services   Tourist services only

Graph 13

The total number of services in Zone 1

Locals only
30%

□ Locals only
■ Locals and Tourists

Locals and
Tourists
70%

Graph 14

Total Number of services in Zone 2

Local and Tourist
services
46%

Local services only
54%

□ Local services only
■ Local and Tourist services

Graph 15

Total number of services in Zone 4

18%

82%

☐ Local services only ■ Local and Tourist services

Analysis

Now I am going to analyse the social, environmental, economical and land use changes. All my data is set up into a table shown below.

	Zone 1	**Zone 2**	**Zone 3**	**Zone 4**
Residential Quality	47,5	32	16,6	30
Environmental Quality	75,5	50	40	45
Perceptions	4	6	-31,5	-15
Total Services	35	31,5	38	24,5
Total 2s and 3s	24,5	14,5	4	4,5
% Gentrification	70%	46%	10,50%	18%

A price of a convenience item – 0,5 litre Coca- Cola

Prices	Zone 1	Zone 2	Zone 4
	.45,.80,.50,.60,.50	1.10,.90,.50,.60,.48,.90	.56,.60,.50

Zone 3 was not the ideal place to ask for prices because it was too dangerous. So we only collected coke prices from zones 1, 2 and 4.

Photographs

This is the new Barceló Raval hotel, just in the middle of the Raval, right by Zone 3.

An old and now unused factory, built during the Industrial revolution.

The state of most of the walls in zone 3 and 4.

The expensive Air shop located in Zone 1 is a sign of gentrification going on. It is there for the tourists and wealthier locals, because the average residents will obviously not go shopping for "air."

Simply start gentrifying an area by adding a new verb to the language. (To *Ravalejar*, simply visit and take in the atmosphere of the Raval and have fun in the wide range of bars and clubs.http://geographyfieldwork.com/UrbanRebranding.htm)

An old chimney from a factory in Zone 4 that was taken down because its not needed anymore.

The Contemporary Art Museum. Opened to public in 1995. Zone one has changed alot since then.

The Mann-Whitney U Test

The meaning of this test is to give us an idea how reliable the results we collected are. We need the Mann-Whitney U test because obviously sampling is not a very accurate method of collecting data, because its only collected in one go and no further updates are made. It is quite different from census data, because the census is collected over a long time and so the data that occured by chance could be eliminated, whereas in sampled data that is not possible.

We did the test on the range of prices of a certain product that are supposed to vary within the Raval.

The hypothesis is that prices would normally be more expensive in Zone 1 because tourists go there and I expect that they could be able to afford a coca cola that is as expensive as in the rest of touristic Barcelona. But on the otherhand, I would also think that prices could be lower in Zone 1 than in Zone 2, because as there is a university and an Art Museum the shops would be competing for customers that go out for lunch into the area.

Prices	Zone 1	Zone 2
	.45,.80,.50,.60,.50	1.10,.90,.50,.60,.48

The first stage of this test is to get all the prices into rank order from lowest to highest. Call the prices from Zone 1 "A" and the ones from Zone 2 "B".

```
      A    B    A    A    B    A    B    A    B    B
     .45  .48  .50  .50  .50  .60  .60  .80  .90  1.10
```

The next thing I do is inspect each "A" sample in turn and count the number of "A"s which come before it. Add up the total to get a *U* value. Then I do the same thing, but with "B"s and I count the numbers of "A"s that come before it.

```
          A    B    A    A    B    A    B    A    B    B
         .45  .48  .50  .50  .50  .60  .60  .80  .90  1.10
   AU-    0        +1   +1        +2        +3             =7
   BU-         1             +3        +4        +5 +5  =18
```

Out of the 2 numbers we chose the lowest one. Then look up the probability value in the table which is shown below. The number we get

gives me the percentage probability that the difference between the two sets of data is not actually reliable, in other words could have occured by chance.

n^1 / u	1	2	3	4	5	6	7	8
0	11.1	2.2	0.6	0.2	0.1	0.0	0.0	0.0
1	22.2	4.4	1.2	0.4	0.2	0.1	0.0	0.0
2	33.3	8.9	2.4	0.8	0.3	0.1	0.1	0.0
3	44.4	13.3	4.2	1.4	0.5	0.2	0.1	0.1
4	55.6	20.0	6.7	2.4	0.9	0.4	0.2	0.1
5		26.7	9.7	3.6	1.5	0.6	0.3	0.1
6		35.6	13.9	5.5	2.3	1.0	0.5	0.2
7		44.4	18.8	7.7	3.3	1.5	0.7	0.3
8		55.6	24.8	10.7	4.7	2.1	1.0	0.5
9			31.5	14.1	6.4	3.0	1.4	0.7
10			38.7	18.4	8.5	4.1	2.0	1.0
11			46.1	23.0	11.1	5.4	2.7	1.4
12			53.9	28.5	14.2	7.1	3.6	1.9
13				34.1	17.7	9.1	4.7	2.5
14				40.4	21.7	11.4	6.0	3.2
15				46.7	26.2	14.1	7.6	4.1
16				53.3	31.1	17.2	9.5	5.2
17					36.2	20.7	11.6	6.5
18					41.6	24.5	14.0	8.0
19					47.2	28.6	16.8	9.7

On the left hand side I selected number 7, which was the smaller one out of our previous calculations. From the top I went down by number 5, which is the number of prices I had for each zone. If I trace them all the way to the point I get when they cross, I get the number 3.3, which signifies that the unreliability of my sample is 3.3%. In other words, my sampling is 96.4% accurate.

Links between different sets of data

There are some links noticable when I look at my table of resutls. I have chosen to select the results from the Gentrification percetages and the Environmental survey and tried to put them in a graph.
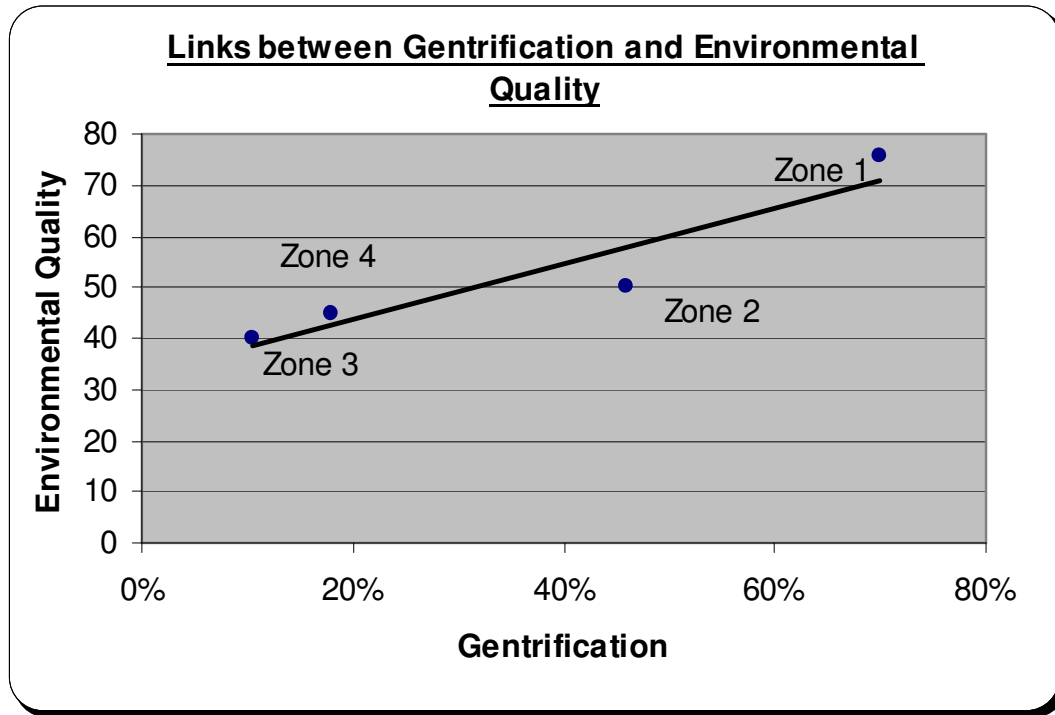
In this graph is is visible that the lower the gentrification, the lower the environmental Quality. There is a negative correlation between these two factors. It is quite logical that if there is a bad environment, ie no parks, alot of traffic or vandalism, not many new shops will be able to open up in that area because of the possible lack of customers. This can be also the other way around: if there are no shops to attract tourists or wealthier locals, the area becomes bad and hence the environmental quality decreases or does not have the chance to increase.

Summary of each individual zone
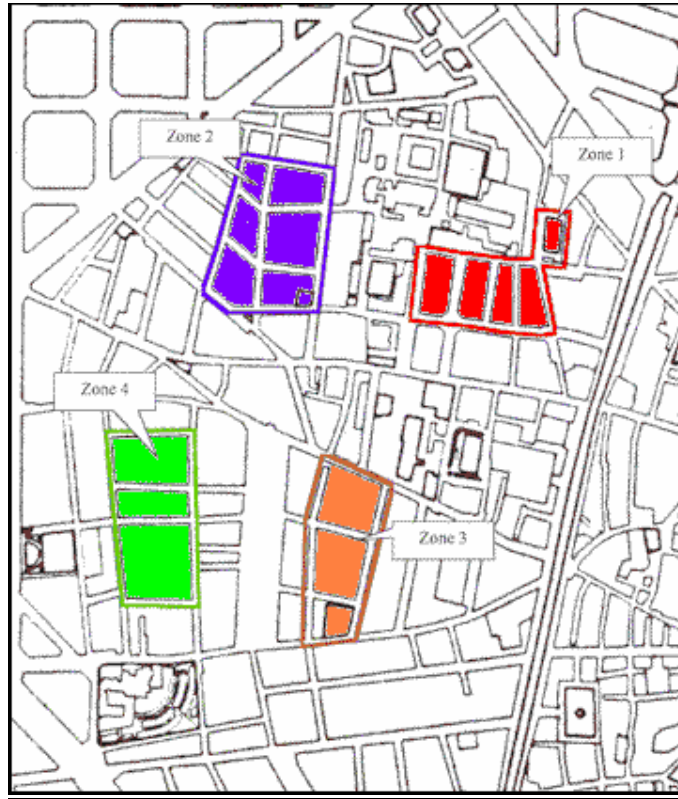
Viewing the changes within El Raval through this study is not completely certain, because I had only a limited amout of time and also because I do not have enough historic data to make accurate conclusions.

But as I know a bried history of each of the areas I think I can make some statements and give reasons for the changes in land use and the consequences.

The Barcelona Goverment carefully studied the history of each of the zones, and according to that they assigned specific changes to the areas.

Zone 1

Zone 1 is overall the best zone in the Raval. It has the highest residential quality, as shown on graph 1 (page 21) with almost no damage done to the buildings, no broken windows or gutters. The buildings are sturdy and of good quality. The Environmental quality is also highest for zone 1. The landscape quality is satisfactory, there is not much of waste land, no litter, noise and vandalism and no offensive smells or air pollution. The traffic flow is normal residential, so there are no heavy vehicles driving on the roads and the roads are not packed with cars.

The perceptions are good (graph3, pg 22), although the best one is in Zone 2. All the good things, i.e. wealth, safety and attactivness of the area are felt. It is strongly felt that the zone is friendly and relaxed, and it is very strongly felt that the zone is improving in perceptions and other qualities. In the negative qualities, the only two features that are felt is vandalism and risk of crime. Therefore this zone gets a positive perceptions index.
In the services and amenities data, it is obvious that zone 1 is best out of the four we have investigated(graph 5 and 6, page 23,24). It includes the highest amount of services that are usable by tourists and locals that are able to afford more luxurious things. Hence gentrification is highest here aswell, with 70% of the services gentrified.

Zone 2

Zone 2 is the second best in the Raval. The residential quality is second highest with little damage done to buildings, although there is some part peeling of walls and rotting timber, overall the buildings are in a good state. Again, the environmental quality (graph 2, page 22) in Zone 2 is second best. But there are not many grassed spaced with trees and no street seating and parks. There is normal residential traffic, some work shops, not much litter or vandalism and no offencive smells or obvious air pollution and noise.
The perceptions are second best aswell. Although wealth, safety and attractiveness of the area is not felt at all, the area seems a little bit friendly and relaxed and there are signs of improvement.
There is also the second highest number of gentrified services(graph 5 and 6, page 23,24), i.e. the ones that tourists and non local people would visit. The Gentrification is only 46%, but it is the second highest number after the gentrification of Zone 1.

Zone 3

Zone 3 is by far the worst zone to live in. The residential quality index is quite low. There is more deteoriation of walls, part peelings and broken glass in windows than in the previous zones. Also there is much more structural damage, which means crack settling and rotting timber.
The environmental survey is worst aswell. There are no parks and grassed spaces. You can find some workshops and a small area of waste land. But Zone 3 is very untidy and much vandalism and crime is present.

The perceptions overall are negative, the worst out of the 4 zones i went through. Poverty and unattractivness of the area are very strongly felt, and danger, risk of crime and vandalism are strongly felt. But the area is not declining, infact improvment is felt a little bit. The people are in a community spirit.

For the index of services and amenities it was too dangerous to walk through and tick the list with what types of shops there are, so i used secondary data and found that there are in total 38 shops or services, but only 3 of them are advisable to be used by tourists. On the graph of "Total 2s and 3s" it is visible that Zone 3 has therefore the least amount of gentrified services and needs alot of improvement.

Zone 4

Zone 4 is overall the second worst zone out of the four I have investigated. It is just slightly better than Zone 3 but worse than Zone 2.

In the part I have been through the deterioration of walls and structural damage to buildings, rotting timber and part peeling is high. There are some broken windows and gutters.

The environmental quality is second worst here aswell. Again, no parks or grassed spaces or wasteland. The streets are noisy and there is alot of pollution and offencive smells. Some litter and vandalism present.
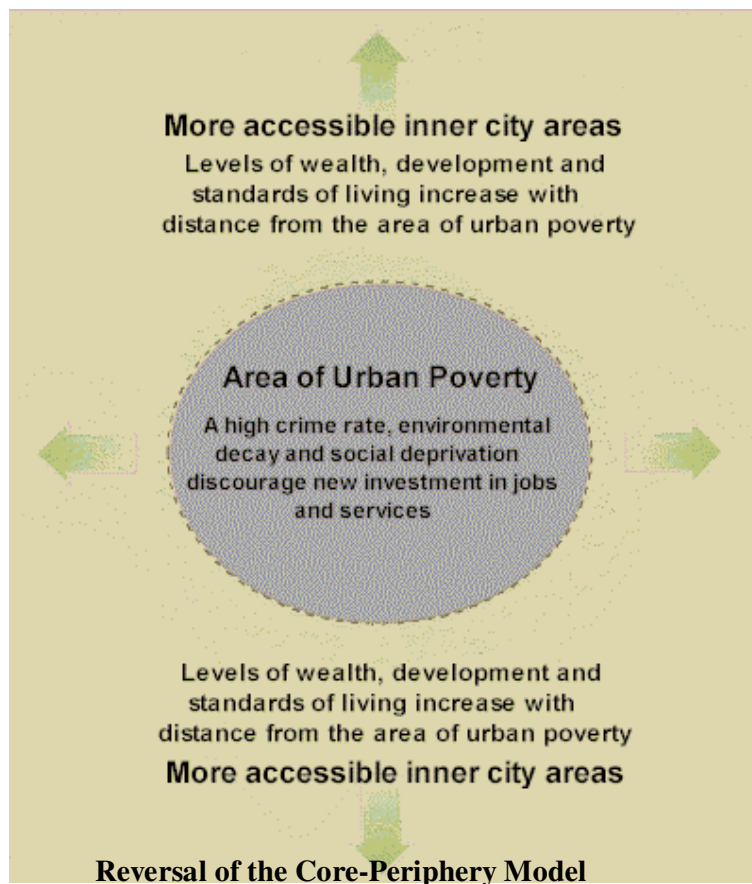
Perceptions are second worst, and in total they are negative. Almost none of the positve features are felt, only some imporvement and friendlyness of the zone. But the poverty and danger and risk of crime is high. Zone 4 has the lowest number of services, but not the lowest percentage of gentrification. It is still the second worst in that aspect, though.

Brief history of each the Zones to explain current issues and current issues

Zone 1 was always favoured for convents and monasteries. It was a place for the rich people to live, because of its good and peaceful environment. Hence also the qualities of buildings had a much higher standard than in the other 3 zones. The price was and is higher there as well. Now the situation is that the Generalitat de Catalunya has found it a good solution to break the cycle of poverty and start the cycle of affluence by investing most of the money into this Zone. The Contemporary Art Museum was built, and a new university was established in the areas of the old hospital. Many libraries, schools and cultural centres were changed from being monasteries and convents as well. The streets have been "open up" to let some light in, and they are not so narrow anymore. A public square was made infront of

the new cultural centre in order to help people mixing and communicating and hence create a more friendly atmosphere and loweiring the levesl of crime.This helps to attract tourists and local wealthier residents who bring money to the Zone to enjoy the historical value of the Area.

By introducing these new facilities, more money came into the area and the people and businesses there have been hugely benefited, and hence the gentrification level is higher than in other zones. This will atract more and more tourists and wealthier locals, bringin more money into the area, hence gentrifying the shops as the shops get more and more money, business will be better there, which will atract more shops again and will attract more people and more money. This is the multiplier effect. It is obvious that due to this effect many more jobs have been brought into the area directly or indirectly.

More accessible inner city areas
Levels of wealth, development and standards of living increase with distance from the area of urban poverty

Area of Urban Poverty

A high crime rate, environmental decay and social deprivation discourage new investment in jobs and services

Levels of wealth, development and standards of living increase with distance from the area of urban poverty
More accessible inner city areas

Reversal of the Core-Periphery Model

As the periphery of el Raval improves, soon the changes would move further into the centre, which is zone 3 and 4. It works the way that if the new jobs in the gentrified jobs and places attract people from that zone and other places outside like zone 3 and 4.

This graph shows the reversal of the core-periphery model. It shows the situation the government was facing with El Raval. The situation was that the core of el Raval was really the worst out of the whole area. The wealthier people lived in the periphery part of the old town, and the residents of the inner part were poor, had many illnesses and there was a high crime rate. The further we go away from the core, the wealthier and more educated the people get.

The point of gentrification is to try and disrupt this model and bring money into the area in the way I explained above.

Process of Urban Filtering Model
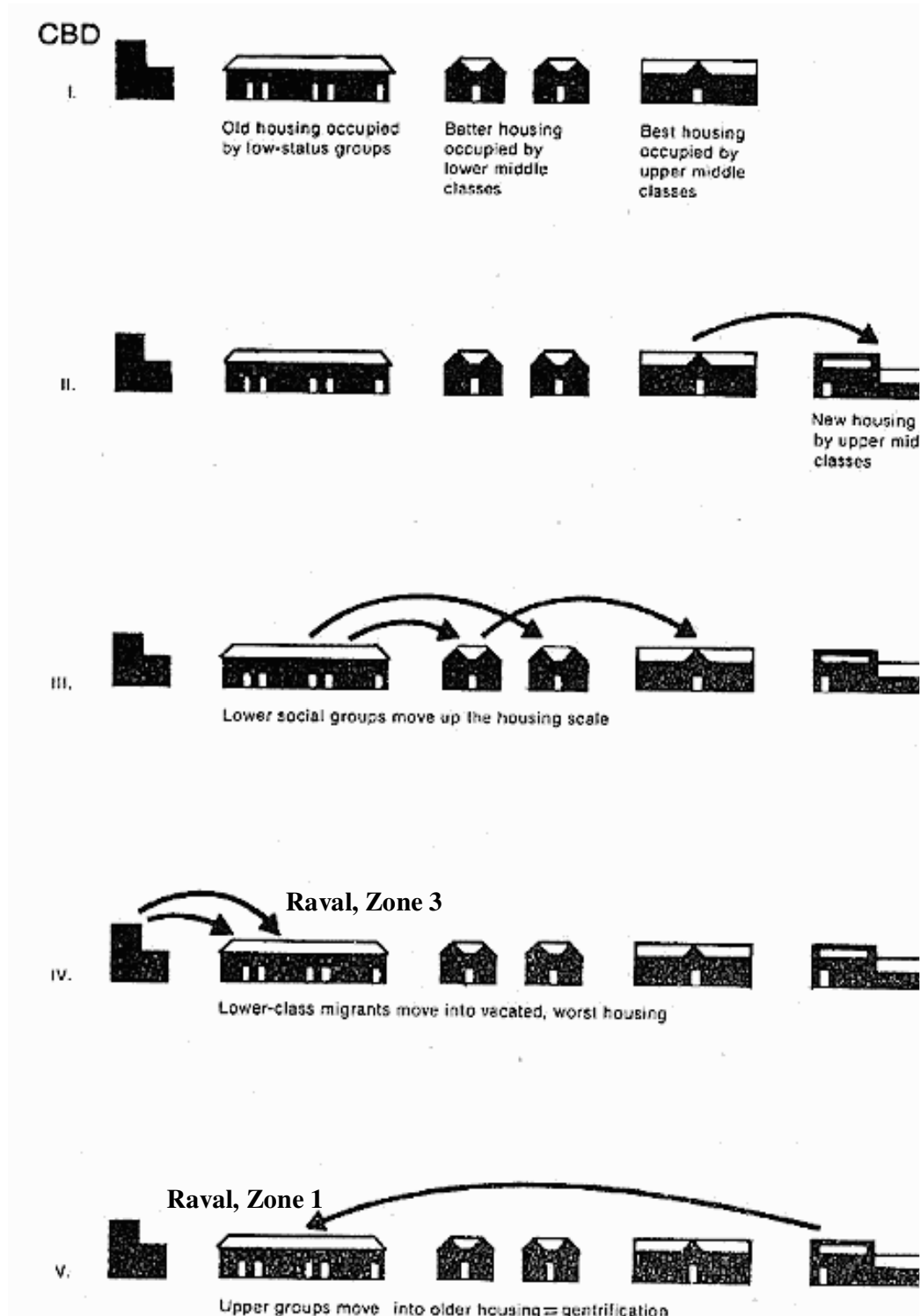
The diagram above shows the process of urban filtering. Over time, the housing in the centre becomes desirable and is being upgraded and gentrified. Then the wealthier move into the core of the city, as the young

and poorer people move out into the next zone, which in this case is L´Eixample or Barri Gótic (labelled in image 1, page 2). The area of el Raval is attractive because of its location, being very close to the central business district it can provide a lot of entertainment, night life, shops, bars and restaurants, and of course, offices and other things that make it cool to live there.

This zone also has the most key gentrification indicators, which are there to attract wealthier locals and also tourists. There is the Air Shop, which sells objects filled with air, useless, but for stylish decoration for homes. Then there is the Camper hotel, the Food Ball and an Ambassador Hotel.

Zone 2 was the most densely populated area in the Raval, and in the world. The number of people living in 1 km² reached up to 68 000. The reason for that is that all the people moved to the cheaper area in north Raval in order to stay away from the port where there was a lot of prostitution, crime and violence. Also when the Industrial Revlution occured in the 18 hundreds and all the factories were built in zone 4, people wanted to find a cheap living that was close enough to the factories so they can go to work by foot and not waste money on transport. Also, it was better to live there because there was not as much crime, prostitution and violence as there was in zone 3. So basically most of El Raval´s population was packed up in the northwest. It is the second best zone in perceptions, and in residential quality, etc., so the Catalan Government invested into the area as well, by supporting pedestrianisation and street beautification. The residential buildings have been improved and new pneumatic under-street waste disposal has been built. But the Key gentrification indicator of zone 2 is the Indian Museum.

Zone 3 was infamous for its bad reputation. It is located near the old port, so therefore it was the "red light district" available for the sea men that arrived to Barcelona through the port once in a long time. The Zone was full of prostitution, crime, violence, drug dealing, etc. That is why it was so unpopular for average tourists or wealthier local citizens. Therefore, the land values are relatively cheap, and so poor immigrants may come and live here, not because they want to, but because they cannot afford it anywhere else in Barcelona. Due to that, there is a mixture of different nationalities, cultures, religions and lifestyles. This can be seen in the fact that the most immigrant services are in zone 3. Also the only mosque out of those four zones is found in zone 3.

The local government still finds it hard to invest money into that zone because it is too gone to be repaired in the next few years. Yet the

government has planned and built the Barceló Raval Hotel, just next to the Rambla de Raval to attract tourists. The plan is also to mix private and public housing, so a wider range of people with wider ranges of money come into the zone.

Zone 4 was the place where all the farm land was, and when the Industrial Revolution came, all the factories and workshops moved there. This explains the highest percentage of workshops out of the four zones. The factories and warehouses are also harder to convert into tourist attractions or other suitable facilities for the wealthier locals. That means that the income of money from tourists and wealthier local residents will be smaller than in Zone 1, where it is much easier because the old convents and monasteries are now attractive to tourists. The land value was cheapest, meaning many of the poor immigrants wanted to live there. Therefore its residential quality is low, because all the housing is maintained by poor unskilled manual workers.

Values and attitudes as a result of land use change

Winners	Losers
Tourists- They come and see the trendy area, have a good time in bars, restaurants Barcelona overall and spend some money in the streets of Zone 1. Some people might end up buying a flat close to the city centre. **Locals-** The pick-pockets and thieves have many opportunities to "make" money. The beggars in the streets may be felt sorry for by the tourists who wouldn't hesitate to give a few Euros to an old legless lady sitting against a wall with an old picture of her family with 15 members, or a	**Locals-** The tourists that come buy their second homes or flats make the value of the land rise so high that the locals cannot afford to live there anymore. In general Franco´s time, the flats were contracted in a way that the person living in it cannot be thrown out and should be able to pay the same price that was give at the beginning of the rent. That was some 30 years ago, and land value was so cheap those days that still today people pay about 30 per month for their rent, including electricity. There are "speculators" these days that try to get the old original residents out of their

child that appears to be all alone.

The City Council – The Barcelona City council will have a good image in Spain and abroad if they show effort in "Rebranding" the city, it gives Barcelona a trendy and glamorous look, hence more tourists would come in and put money into the local system.

homes by shocking them, for example letting a pack of rats into a home of an old lady. She will get a big shock, and probably die. That will make the flat free so the place can be sold or rented for a much higher price than before. Other "methods" are used, for example cutting the energy supply, so the residents freeze to death in their homes. That is why in the eyes of the locals the tourist is the terrorist. Nobody except profitable businesses feels that tourism brings benefits into the area.

Tourists- When they walk through the Raval it is quite possible that they get robbed. Hence they lose money and other possessions, which make them losers.

<u>Conclusion</u>

El Raval is changing because of the changes made by the scheme is the local government, which has managed to change the social, environmental and financial situation of the area. These changes are starting to attract businesses, and other higher socio-economic groups into the area which increases the income to the people and the whole land value, which means that the area is richer. The higher land values could have driven the poorer residents who might have made it uncomfortable for tourists until now away. In general the Raval is changing, although some zones might be evolving in a different way.

The changes in Zone 1 are occurring rapidly due to cultural facilities like the CAM or the Catalan National Library or Universities. Thanks to the location of Zone 1, on the periphery of the Raval, and close to Barcelona´s Central Business district, the integration of different types of people and lifestyles can occur. Money will flow faster into the Zone because tourists will come and spend their money in the shops while they are exploring the area around Las Ramblas, which is very close to it.

Zone 2 is changing as well, not as fast as Zone 1 and not as slow as Zone 4, as seen in the set of results. The benefits from being situated near Zone 1 with the cultural buildings can be that money will somehow get there as well and so the area will become more gentrified in the future.

Zone 3 is not improving very well, because its right in the middle of El Raval. Its situation is so bad that the local government has decided to wait some 10 years or so and then start trying to do something with it. But lately some slums have been taken down to make new social spaces and modern buildings such as the new Barceló Raval Hotel and Private housing, which is hoped to help the poor and wealthy people mix and so gentrification would occur.

In the results we see that Zone 4 has improved slower than Zone 2, and since it's the farthest away from the educational buildings in Zone 1 or the CBD of Barcelona, we cannot expect for gentrification to happen there so quickly. However since it is close to the hotel in zone 3 it should be possible that money will be brought into the area as well, which then attracts other businesses, which will bring more money and so on. In all four zones we can expect the multiplier effect to start taking place sooner or later, but no money will be lost, it will only be gained to the area.

Evaluation

In my study there were some things which limited me to get all the data and some things which I would change next time if I did this again. I would try and remove some limitations which might have affected my results. For example, we did not have a chance to look inside in some of the homes, or we only had a limited amount of time to get our sample data. If we had access to a census, or we carried out one, the results might have been a little bit different. Also, I would like to know the further impact that tourists would have in the area.

Another thing which limited me and my group while collecting results was the time of day, year and so on. We were in El Raval from the morning to early afternoon, and its quite possible that some shops and services have been closed, and also, a type of people which might give Zone 3 its characteristic might not have been out yet, as the Underworld starts to function at night.

While collecting prices, the shopkeepers could have made up the prices depending on what the "customer" looked like and also because they knew we only went to ask, how much a coca cola costs. Apparently there were some groups in the same area and shops doing the same thing, which might have provoked the shopkeepers into lying about prices.