"The Quality of the Urban Environment in Makati Degrades With Distance from the Central Business District"

British School Manila

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Introduction

"The Quality of the Urban Environment in Makati Degrades With Distance from the Central Business District"

We asked this question because it's part of our GCSE course to investigate settlement trends in Developing countries. Our aim is to conclude if the Sao Paulo model (see diagram 1) fits our case study, therefore concluding both LEDC cities have the similar settlement patterns.

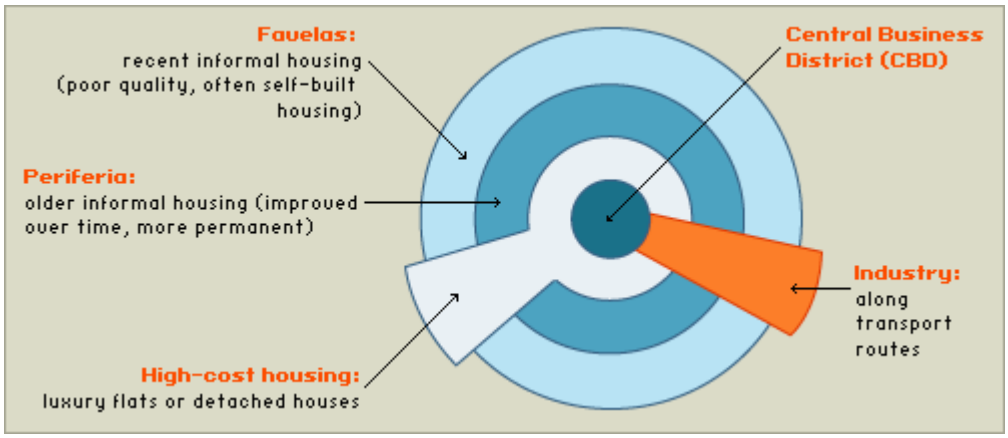
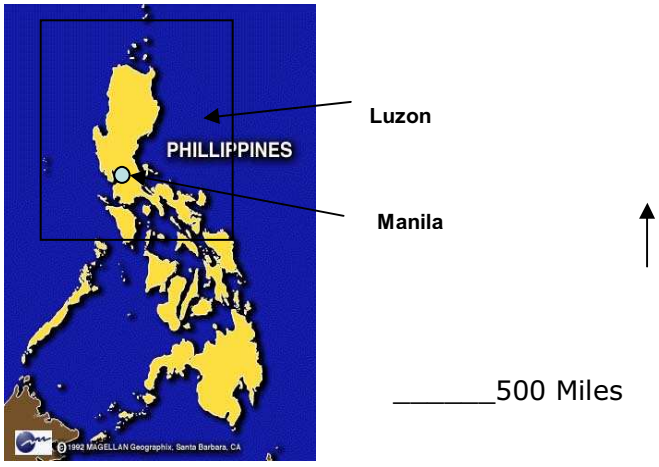
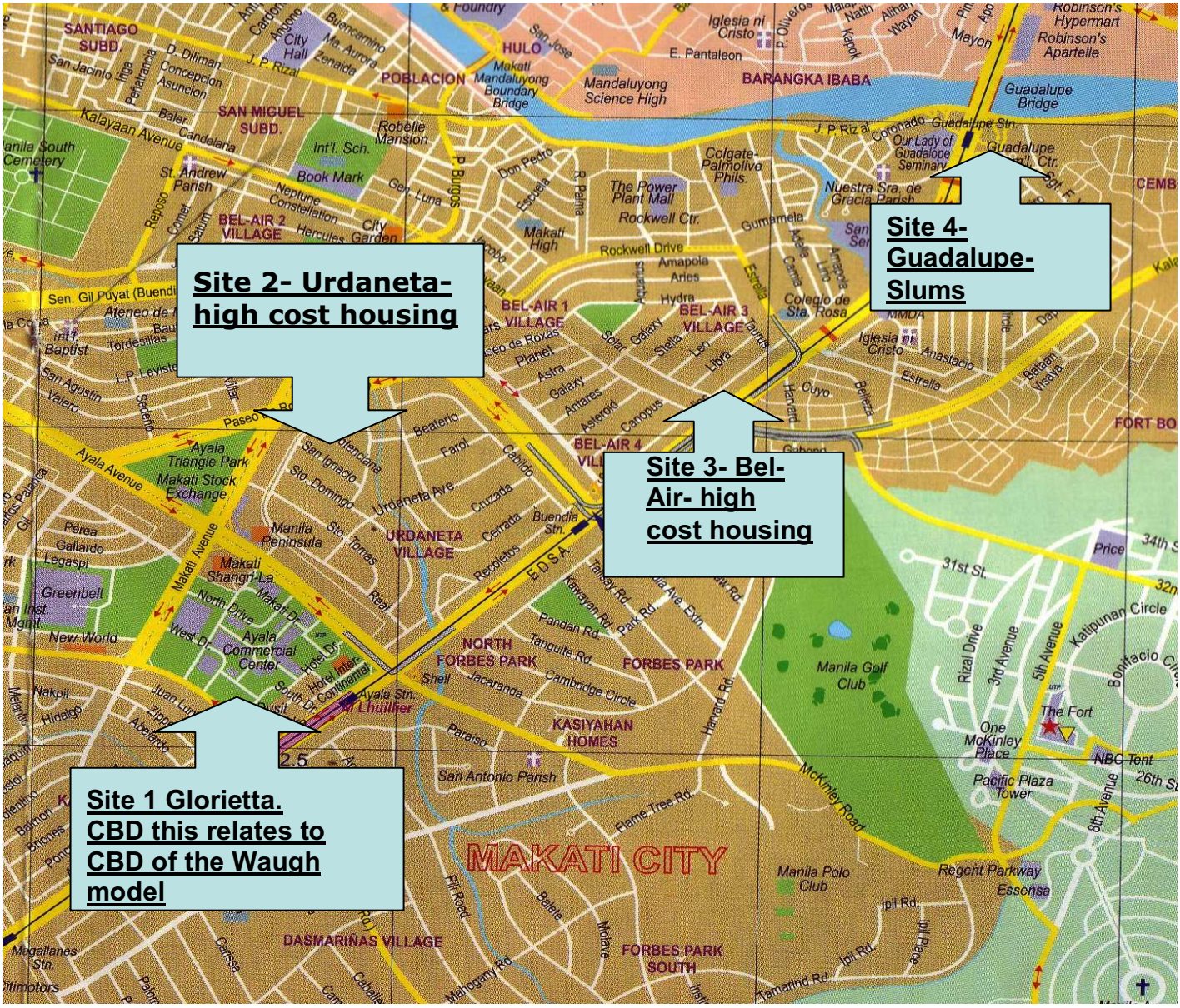


Diagram 1

Description of the location

Our sites are all based within Makati City a district of Metro Manila, Philippines (see map 1). Metro Manila is a very large city ranking in the top 25 biggest cities in the world. Makati city is the main CBD. Historically Intramuros was the CBD owing to its location; when the Spanish was trading with the Philippines, they used the port regularly a place where trade was very abundant. However, after world war two that whole area was destroyed by bombs from the Japanese army, the amount of dead discouraged any further business. Another reason the CBD moved location is the amount of land space. As Intramuros was the central hub for business land prices were high, new businesses were forced to open farther away to a more suitable site.





Site selection:

- ~ sites were all accessible
- ~ along a transect from the CBD to the slums. The chosen transect was along EDSA a main transport artery going from the CBD into the slum area.
- ~ Four sites were equi-distance apart as far as safety would allow (parts of Metro Manila are dangerous to the public).
- ~ Glorietta is a mall, which provides many services: cinemas, restaurants, shops, department stores, retail outlets etc. Around Glorietta, there are many office buildings, headquarters of transnational and local companies. This is very similar to the structure of the CBD. At site, one I expect to find a high pedestrian count, as the CBD is the central hub for jobs.
- ~ Urdaneta and Bel-Air are high-class villages for residential housing. I expect to find a low housing density as most houses have gardens and are of a substantial size. In the two sites, I expect the sound levels to be very low; villages tend to be quiet places, the houses are gates. Furthermore, the point of paying a high price for land is for the quiet and peaceful environment.
- ~ At Guadalupe, I expect to find a low environmental quality. Site four is where the lower classes of society reside. Therefore, I expect to find a high housing density, as most houses will be small and cramped. As the houses will be small and are built on land, which have not been paid for I believe there will be a large amount of rubbish.

Hypothesis- To be able to answer my aim I created several hypothesis

-The number of public vehicles will increase with distance from the CBD

In the CBD most public transport will have restrictions to ease congestion of the traffic. As you get farther away from the CBD, public vehicles have more freedom. As most workers at the CBD live in the considerable distance away, they will use public transport as they leave their jobs. Therefore, increasing public transport vehicles with distance from the CBD.

-The number of private vehicles will not change with distance from the CBD

Throughout the City private vehicles are normality. People use private cars to get to and from work mostly used by both upper and middle class citizens. Therefore with everyone using private cars the amount should not change with distance from the CBD.

-The sound levels will decrease with distance from the CBD

Villages tend to be quiet places. Villages in the Philippines have restrictions on who are allowed to enter- only residents and workers. Public roads has very little restrictions therefore, any type of vehicles are allowed to use the roads. Also along public roads, there are vendors and traffic attendants, which contribute to the sound levels. Another attribute is along public places building owners can easily upgrade or remodel their building leading to noisy construction.

-The housing will density decrease with distance from the CBD

A number of businesses located in the CBD as well as the number of malls. Within high land value areas, apartments are very common as they take up little land space- consistent with the theory land prices is more expensive nearer to the CBD. Therefore, with distance more people have gardens

-The number of older pedestrians will increase with distance from the CBD.

Elderly people tend to avoid dirty places. In the CBD where the environment has a high quality and there are many stores where products are available is more appealing to the elderly. In the CBD, there are many malls, which provide appealing services: department stores, restaurants, stores, cinemas etc. Comparing to the slums where most members of society would avoid being around because of such reasons as the environmental quality is low, there is a high crime rate, nothing appealing- there are no offered services, high amount of trash etc.

-The amount of pedestrians will decrease with distance from the CBD

The CBD is the central hub of people. In the CBD, there are malls which provides services appealing to the public e.g. cinemas, restaurants, department stores, shops, etc. Therefore, most people would be drawn to the CBD meaning we would expect to see the most people in the CBD. As you move away from the CBD the services offered are limited, therefore there would be no need for pedestrians to visit those places.

-**The amount of litter will increase with distance from the CBD**

Transnational companies have their headquarters in the CBD. The Philippine government will try to make the best impression to draw more transnational companies. Therefore, a percentage of the taxes will be used on cleaning facilities including: garbage cans, street cleaners, janitors etc. The means to clean areas in the CBD will be provided by the government if not by the actual owners of the buildings. With distance from the CBD, fewer foreigners will venture to those places. In the slums, generally lower classes, squatters, reside there. As the residents are considerably poor, no one tends to care about the environment. The residents would rather generally large amounts of rubbish.

-The amount of traffic will decrease with distance from the CBD

People in the CBD can afford cars. In the slums, not many can afford to buy a car, maintain a car and pay for gasoline. Therefore, I do not expect to find that much traffic simply because there are no cars the workers in the slums would walk or use public transport to commute. In the CBD most workers are paid a reasonable price especially those working in top positions in companies; higher paid members of society can afford to buy cars.

-**The quality of the urban environment will degrade with distance from the CBD**

Buildings in the CBD are looked after by either the owners of the business, building or the government. As the businesses in the building want to make a good impression they repair any damaged parts. In the slums, people can't afford or impression of their buildings is not their priority. Therefore, there should be a lower quality in the urban environment with distance from the CBD.

Methodology

This section will explain all the methods, which we used to gather our information during our fieldtrip. We repeated all methods at each of the four sites; we visited Glorietta, Urdaneta, Bel-Air and Guadalupe.

Sampling techniques

We used sampling techniques during our field trip. We sampled because we need data to quantify but too much data can be expensive, time-consuming and impractical. We used three sapling techniques: Random where something is chosen by chance. The advantage of random sampling is it can be used with large numbers. You may not always get the actual representative, is the disadvantage. Systematic sampling is when values are selected in some regular way e.g. comparing a part of a street every 10meters. The advantage of using systematic sampling is you can collect data on a large area. All points do not have an equal chance of selection, is the disadvantage of systematic. The final sampling technique is stratified sampling. Stratified sampling is when you divide the information into groups. Advantages of this technique are it is easy to test. A disadvantage of stratified sampling is there is a bias of division into subgroups.

Method	-Equipment	Sampling Techniques	How?
Survey	-Questionnaires	Random	Surveying Random people at the site
Environmental Quality Survey	-Bi-polar analysis	Stratified	Personal Opinion using a scale
Traffic Count	-Watch, -Recording Sheet	Stratified	Tallied traffic for 5 min
Pedestrian Count	-Watch, -Recording Sheet	Stratified	Tallied Pedestrians for 5 min
Index of Decay	-Recording sheet, -Matrix	Stratified	Personal Opinion. Gave a number added it up. Minus from 60
Field Sketch	-Paper, -Pencil	Random	Drew the area which we were surveying
Housing Density	-Recording sheet, -Pace 100m	Systematic	Counted the amount of houses per 100 m

Survey

A prepared questionnaire was taken into the field. At each site, pedestrians were picked at random and asked questions using both open and closed questions. Using open questions it gathers a qualitative data, using closed questions it gather quantitative data. Interviewees were randomly picked to get a broader idea of the society's opinion. Problems encountered; people did not feel the need to convey their personal opinion. Interviewees did not answer the questions truthfully. We assume that because there were slight differences in answers. The change in answers suggests either that it was true that different age group and sexes think differently or, people did not answer truthfully.

Environmental Quality Survey
A survey answered using our own opinion. At each site, the surroundings were observed and we answered using a scale ranging from negative three to positive three. Using an example, negative three means very noisy positive three means very quiet. This is the bi-polar analysis; using a scale allows us to easily spot changes in the surroundings of each site. There are problems with this method, as we observe each site the amount of noise, litter and the safety of pedestrians vary throughout the day. To accurately use the scale this method should be used at each site during similar periods of the day e.g. lunch break.

Traffic Count
At each site, cars were counted for five minutes, as they passed through a designated area. Tally the vehicles by class: private cars, taxi, motor bikes, van and jeepney. Tallying a direct type of transport vehicle enable the ability to perceive changes in the quality of transport vehicles at each site. The amount of vehicles in an area changes throughout the day in order to get an accurate result at each site the test should be done at similar times of the day furthermore, in excessive amount tallying cars by class can prove to be different.

Pedestrians Count
At each site, we counted the amount of pedestrians for five minutes that passes through an allocated area. Difference in physical appearance in age was tallied: young, mid-life and elderly. In counting a direct age group, we are able to distinguish if the area affects the amount of people as well as the age group. The problem with counting pedestrians is the amount of people in an area changes throughout the day, to accurately denote contrasts between sites is impossible. To get the results accurate the method should be done at the same period. Another problem is judging the age group, when many pedestrians are present, it is difficult to judge their age as well as count everyone.

Index of Decay
A matrix completed with a personal opinion. A prepared criteria is given, using your opinion observe the designated criteria and get the number indicated by: none, little, some, much. Take the numbers and subtract from sixty. Using a criterion and matrix means for each site you are grading it exactly the same, taking the numbers away from sixty gives a number which can be related to each other; the lower the number the greater the decay, this is stratified sampling. The problem with this method is the amount of time consumed. At each site, the method would be repeated five times for five different buildings using eight variables, over time it seems almost tedious.

Field Sketches
This is a bias method where we choose the most attractive place to draw a sketch. Drawing the place including annotations and notes on different aspects of the building/scene. This is done visually to contrast different aspects of building sites. One problem with this method, which is random, is for non-artist it was difficult to convey different building characteristics.

Housing Density
At every site, count the amount of dwellings per hundred meters. Pace hundred meters and count the number of residential housing. This is done to find the contrast of the amount of housing per hundred meters at each site, this is stratified sampling. Furthermore, to see the change for housing at each site. A problem with this method is that over a hundred-meter period there might by two and a half houses no two or three houses will fit exactly. Another problem is the issue of resident buildings; we have to estimate the amount of units per floor.

Data Presentation / Analysis

Environmental Quality Survey

Unsafe for people	-3	-2	-1	0	1	2	3	Safe for people
Noisy	-3	-2	-1	0	1	2	3	Quiet
Litter	-3	-2	-1	0	1	2	3	No litter
Undesirable	-3	-2	-1	0	1	2	3	Desirable
Cramped	-3	-2	-1	0	1	2	3	Spacious

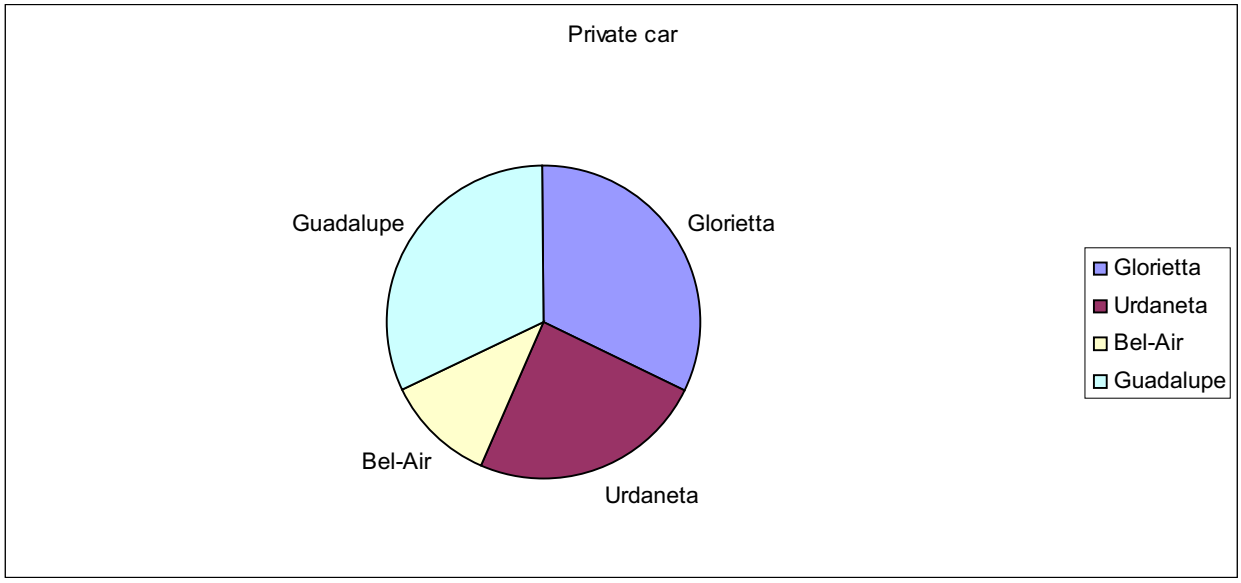
Site 1: Glorietta ☐

Site 2: Urdaneta ☐

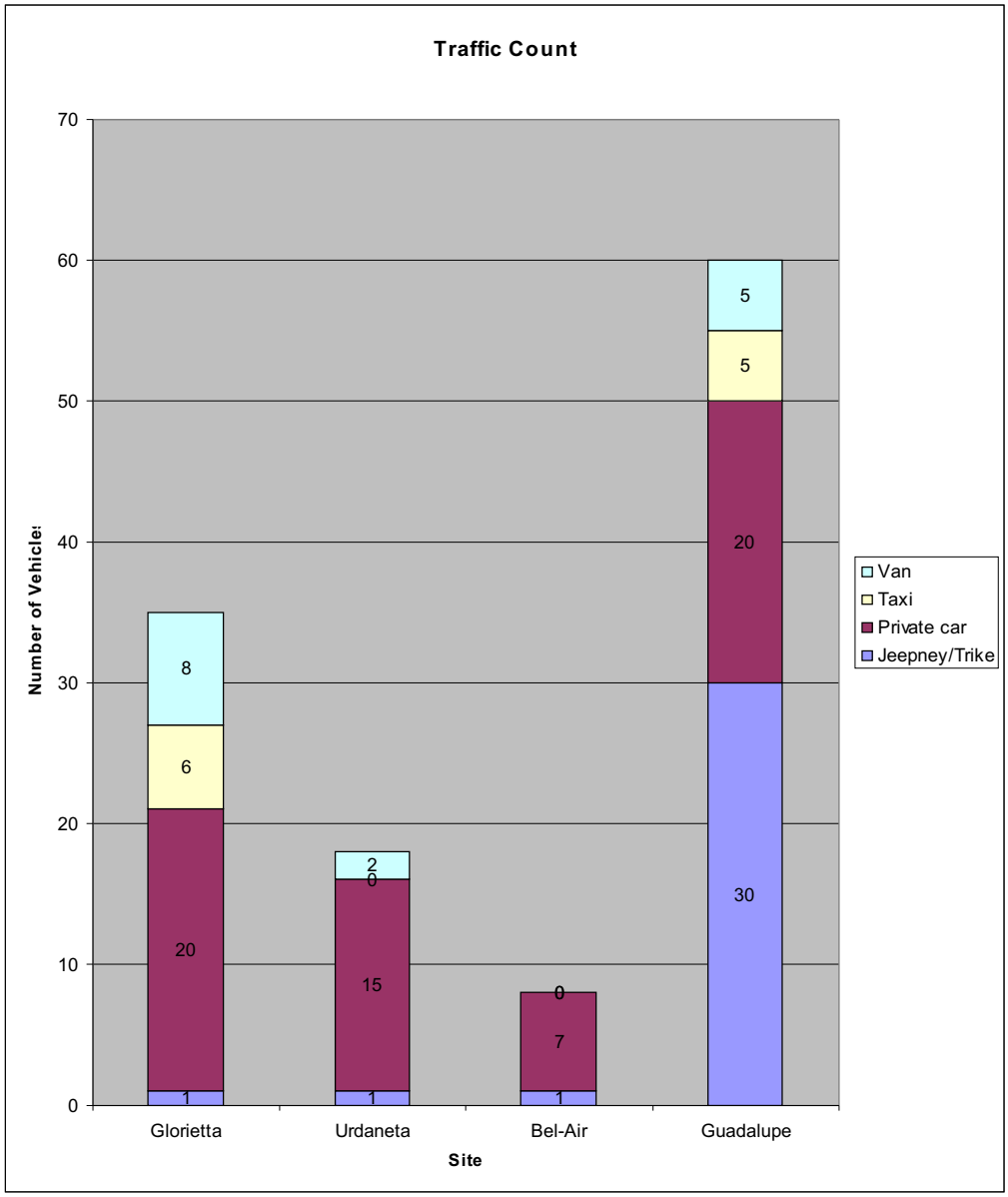
Site 3: Bel Air ☐

Site 4: Guadalupe ☐

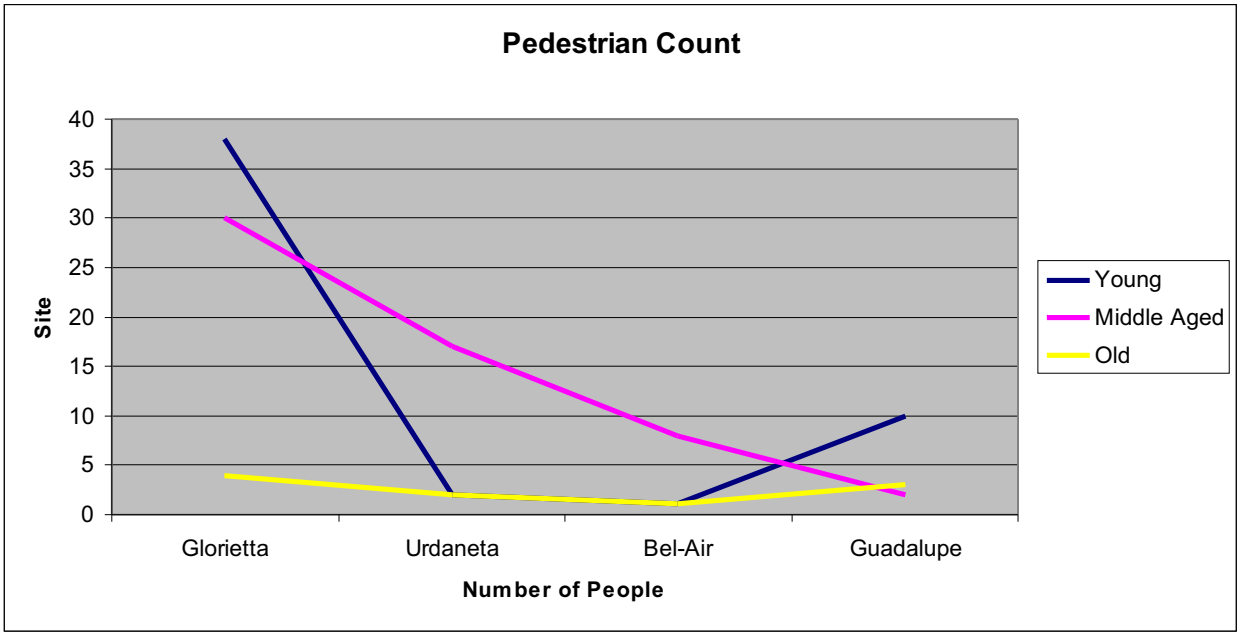
My Environmental Quality Survey personal opinionated results are shown in a complex form of data presentation. I used this complex form of data presentation because you can easily see the difference and compare between the four sites. I.e. the left hand side is negative and the right is positive. This graph clearly shows that the quality within the villages and Glorietta was very different from the quality of the environment at Guadalupe. The most positive site was Glorietta scoring a perfect positive three. However, I believe that if we visited the site at a different time our results would be different. During the afternoons and at night that area becomes extremely congested with vehicles creating a lot of noise and little space. Therefore, at different time, the scores of site Glorietta would be extremely different; the environment changes according to the period. The most negative was Guadalupe. At site Guadalupe, it was the worst because there was a great amount of litter, noise from public transportation, an undesirable smell and extremely cramped living conditions with an estimated 100 house per 100 meters.



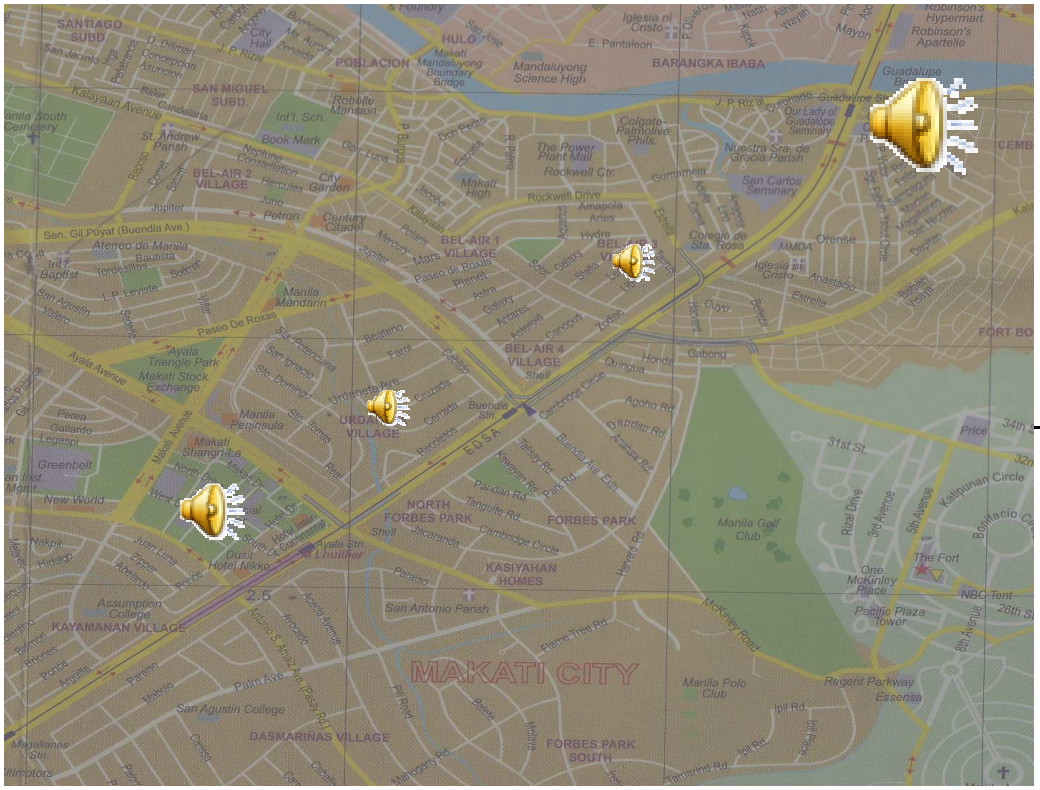
The results of the traffic count specifically the private cars are shown using a pie chart. I used a pie chart because you can see the data and compare it knowing the amount of area reflects on how many vehicles were counted. The chart clearly shows that the amount of cars at each site were relatively the same. However, Bel-Air's private cars were not as great in numbers compared to the other three sites. This was probably because we did our survey along a small road next to the park; most cars were passing along the major village roads. Another reason is in contrast Glorietta, which we did the count during a time where most people were going to work; we did the traffic count at Bel-Air during mid-day where most people would be at work. This proves my hypothesis that 'the number of private vehicles will not change with distance from the CBD'



The results of the traffic count at each site are shown in a stacked bar graph. Using a stacked bar graph, you can easily see and compare results from each site. The graph clearly shows that the amount of Jeepney and Trike is thirty times more at site 4. The result shows that the quality of the environment can affect the quality to transportation. I believe there is such a great contrast for several reasons. Firstly, traffic restrictions near the CBD to ease the congestion will limit the movement of the public vehicles therefore drivers would prefer to be farther away to divert the possibility of getting a fine. Another reason might be there would be no point if the drivers were in the CBD, passengers might not be willing to pay an extra amount to walk a few hundred meters. This result neither proves nor disproves my hypothesis 'the amount of public vehicles will increase with distance from the CBD' because the amount of public vehicles decreased then increased with distance from the CBD



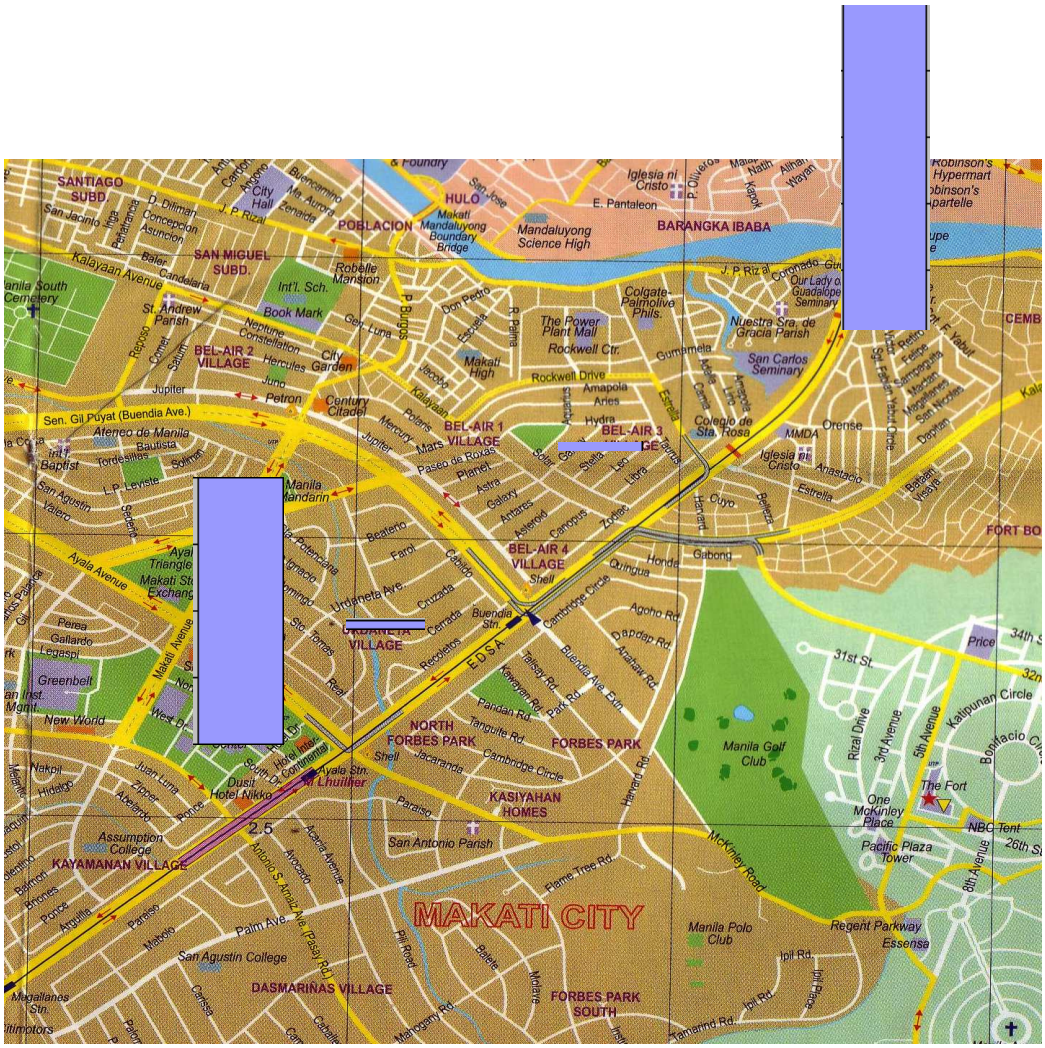
The result of the pedestrian count is shown in the form of a line graph. I used a line graph because you can easily see decreasing or increasing amounts. The graph shows that the amounts of old pedestrians are very few. This is most probably because the older members of society try to avoid public places. In addition, the amount of middle aged and young people decrease through the four sites. The most likely reason is we preformed the count in the morning where most people would be on the way to work or school. Through out the day the numbers decreased primarily because of that reason. However, at site four, Guadalupe the amount of young pedestrians increased, we carried out the in the afternoon where most students would be on the home.



Sound Level at Each Site According to Personal Opnion

The sound level is in a form of a pictogram and on a map. I used this data presentation type because you can easily compare the amount of sound to the distance away from the CBD. This shows that the amount of sound in a public place such as a mall or intersection is much greater that the noise in the villages. There is minimal sound in villages because it is a private environment. Outside the village at site Guadalupe and Glorietta, a lot of sound was a result of noisy cars, traffic enforcement and construction work. In a village these aspects have, limited accessibility owing too only residents are allowed to enter, leaving the amount of vehicles lower than the public places. Furthermore, villages have rules such as “no blowing of horns” a main source of noise pollution. The results did not prove or disprove my hypothesis “the level of sound will decrease with distance from the CBD” owing too, the sound levels both increased and decreased

Housing Density



The housing density is in the form of a bar graph and on a map. I used this form of data presentation because you can compare the amount of housing with the distance to the CBD very easily. It clearly shows that in the village there are a small number of dwellings in contrast to the other areas. One reason for the great number of houses in Glorietta is the location. Glorietta is a mall therefore, land prices are high. An apartment was built to utilize space. However, at site Guadalupe there is a high dwelling per hundred meters because of the poverty. Poor people cannot afford real homes; the dwellings we saw were constructed out of scrap materials e.g. corrugated iron, bricks, pieces of wood etc. As there is, many homeless, sites where there is no land fee is very popular meaning many people tend to set up their homes at that site. The great amount of poor people mean the amount of space that a house takes is very small resulting in a hundred houses per hundred meters. My results did not prove or disprove my hypothesis "the housing density will decrease with distance from the CBD" because the housing density both increased and increased

Conclusion

Mini-conclusions

By doing the investigation, I have discovered with distance from the CBD:

- ***The housing density will decrease.*** This conclusion can be disregarded. At site one there was a high housing density because of high-rise condominiums. Site two and three have a low housing density, as expected, because they are detached houses with wealthy owners (mostly with gardens). Site four had the highest owing to the amount of small houses (slums). Housing density decreases until you reach the slum area where it increases this is due to the cheaper land prices.
- ***The amount of pedestrians will decrease.*** This hypothesis is correct. The line graph shows the decreasing rate of pedestrians. However, the result could be wrong because we did collect the data at different times. During the day, most people would be either at work or at school.
- ***The area becomes less developed***. As buildings and roads become more damaged and are in need or repair this can be seen in the index of decay and bi-polar analysis. There was an obvious decline especially between site 3 and 4 as we made our way in to the slum area.
- ***The number of public vehicles will increase****:* I can disregard this conclusion. Even though ultimately the amount of public vehicles did increase, at sites 2 and 3 this was only very slightly. This was due to them being gated villages.
- ***The amount of private vehicles will stay the same***: I can accept this hypothesis simply because my result supported it. Through all the sites, the amount of private vehicles was similar.
- ***The sound levels will decrease***: I can disregard this hypothesis because even though site 2 and 3 the sound did decrease ultimately the sound level increased.
- ***The amount of litter will increase:*** I can disregard this hypothesis because though the final count of litter was the greatest. At sites 2 and 3 the street was clear of litter; this was probably due to the high prices of houses.
- ***The amount of traffic will decrease***: This hypothesis is incorrect. The amount of traffic did decrease when we entered the gated village because only resident's cars could enter. At site four Guadalupe, I assumed that there would be no car's because the residents around Guadalupe had very little income. My mistake was that Guadalupe was a major intersection to reach the CBD. There were many vehicles including private and public.
- ***The quality of the urban environment will degrade***: I can accept this hypothesis. Sites 1 – 3 had a high level of environment, but at site 4 the environment quality was very low showing a high amount of noise, litter etc.

The development of Sao Paulo (LEDC model) and Makati are very similar. Both has a central business district as well as high cost housing branching out from the CBD, with slums near the outskirts. Furthermore, along major transport routes there were developed industry.

We can accept this case because the quality of the urban environment did degrade with distance from the CBD. Evidence supporting this: index of decay and bi-polar analysis and our own personal surveys.

Evaluation

Reliability of Methods

Problems in collecting data;

- Our research team had problems entering the villages. The villages we intended to visit had high security because of private residential housing.
- Security reasons means some of the sites we would have liked to enter e.g. the actual slums, were not possible to visit.
- We had a tight time window therefore, we had to conduct all of the methods at all sites all on one day. The problem with this is since time was pressuring us we were forced to rush in collecting some of the data. If I were to do this again I would visit each site at the same time during a weekday

How I would improve each field work technique:

- Environmental Quality Survey: The environmental quality survey was based on our own personal opinion. The accuracy of the results was dependent on my own opinion. If I were to repeat this investigation, I would set up different criteria e.g. taking the average from the group.
- Questionnaire: The questionnaire was in English. The people we encountered had a hard time understanding the questions therefore; they might not have answered the questions accurately. If I were to repeat this investigation, I would translate the whole questionnaire to Tagalong so the chances of the locals of understanding the question would increase.
- Traffic Count: We counted the amount of cars passing a certain area e.g. pedestrian crossing. A problem with this technique is the time of day. We counted at each site at different times of the day. As in the morning and afternoon, most people would be traveling to and from work / school; it is unfair to count at site two and 3. If I repeated the investigation, I would collect data over a four day time period- visiting each site at the same times on weekdays.
- Pedestrian Count: The same problem occurred with the pedestrian count owing to the time of the day. The pedestrians we counted during the morning and afternoon were on their way to work or school. If I were to repeat the investigation, I would do the same as the traffic count- collect the data on a four-day time scale. I would change the categories separating the pedestrians to a much simpler scale. It was difficult sorting a large amount of pedestrians and estimating their age.
- Index of Decay: We obtained our results using a matrix and our own opinion. Our own opinion might vary because of previous accounts of the area. Repeating this investigation we might have a third party assess the site.
- Field Sketch: I am happy with my field sketches as they show a good representation of the sites and are fully annotated to remind me of what I observed.
- Housing Density: The results achieved were an estimate. For this method, we estimated the distance (100meters) and the amount of housing. Another problem was in the slums it was hard to distinguish housing. If I were to repeat the investigation, I would measure the area accurately using a trundle wheel. Furthermore, I would try to ask to locals for help if it was hard to distinguish housing.
- Secondary Evidence: I would like to collect more secondary evidence such as house prices, crime statistics. I looked for these thoroughly however due to Makati being within a LEDC they either hadn't been collected or weren't published. I asked both the local police and the equivalent of estate agents.

Validity of Conclusions

Reason why some conclusions might be wrong and improvements that could be made to increase the validity:

- We collected data at four sites. There are many limitations with few sites. To improve collection of data and to ensure validity of results by visiting a larger number of sites is an option.
- With a small research team, opinionated parts of the survey could be biased. Having a larger survey and more members in each group would increase the accuracy of the results.
- We collected data at all four sites on the same day. We concluded that the time of day affects the results. To increase accuracy we should have visited each site at the same time on a weekday, to increase validity.
- The conclusions I have drawn are from one transect across Makati. It is a very broad assumption to make that Makati fits the model just from one transect. I would like to carry the transect over into other areas of Makati.