

# Research question case study examples

[Sociology](#), [Shopping](#)



## **Introduction**

This paper provides information on geographical aspects, with focus on the urban environment of Frankfurt, Germany with an intention of investigating and analyzing financial and commercial patterns based on size and function of three retail centers. The analysis will involve application of Reilly's retail theory and Christaller's model of central places (Morris, 1968). An understanding of urban environmental issues in cities such as Frankfurt provides a spring board upon which spatial planning can be tailored to meet the social, economic and recreational needs of people.

How do retail patterns vary in different urban areas of Frankfurt am Main, Germany?

### Field Objectives

Christaller's model through central place theory seeks to explain the size, number and location of people in various urban systems. The model further indicates that settlements function as central places. Reilly Theory suggests that the larger a city is the larger its trade area would be and consequently it would draw from a larger hinterland around the city. Reilly law of retail gravitation follows the following formula

Reilly calls the boundary between two trading locations breaking points and play an important role in determining size and population threshold of different locations.

## **Hypothesis:**

H1: smaller centers are perceived to provide convenience of services and goods as well as fewer types of functions; larger centers are perceived to

have greater supply and variety of comparison products and comparison goods.

H2: sphere of influence as well as the commercial and financial activities within a city increase in analogy with the city's population.

**H3: there is positive correlation between distance travelled to reach the central place and time spent.**

H4: there is positive correlation between distance travelled by customers and amount of money spend

Introduction

Frankfurt am Main generally identified as Frankfurt is the biggest city in the German state of Hessen. Frankfurt is the fifth largest city found in Germany with a population of about 704, 449 in 2012 and with its urban area having an estimated population of 2, 300, 000 in the year 2010. Frankfurt is both the transport and financial centre of Germany. Additionally, this city is the biggest economic centre in the bigger part of Europe. It is listed as an alpha world city since it is an international centre for commerce, culture, transport, tourism, finance and education.

Figure. 1 Shows a map of Germany, where A represents Frankfurt

## **Location**

Frankfurt is located on the south-east of a mountain range called Tanus. The city covers both sides of the main river. Frankfurt is not only the economic capital of Germany but also the largest city in Hesse, a federated state that is located in South-West Germany. The city boasts of one of the world's largest forests within a city. This is the Frankfurt City Forest. It is found in the Eastern part of the city. The city area is 248. 31 km<sup>2</sup> (95. 87 sq mi). In the

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east-west direction, it extends over 23.4 km (14.54 mi). On the other hand, it covers 23.3 km (14.48 mi) in north-south-direction. Frankfurt's city center is found on the northern side of the Main river. It is located in Altstadt, a city district but also a major historical center. It is bordered by the Innenstadt district. Furthermore, the geographical center of the city is found in the city district of Bockenheim. The geographical center is located near the Frankfurt West Station.

Frankfurt forms an integral region of the Frankfurt Rhine-Main Metropolitan Region. It is the most densely populated region in Germany. The region has a total population that is approximately 5.6 million people. Apart from Frankfurt, there are also a host of other important cities in the region. One of these cities is Wiesbaden, which is the capital of Hesse. Mainz is a city that is nearly as economically important as Frankfurt. It is the capital of Rhineland-Palatinate, Rüsselsheim, Darmstadt, Bad Homburg vor der Höhe, Hanau, Offenbach am Main and Aschaffenburg.

The following locations are found in the urban city of Frankfurt, which is the central hub of financial activities as well as commerce in the state of Hessen. These three central places are not situated very far from each other. They are all part of the central inner city within only an estimated 5 km radius.

- Zeil

Zeil is the central shopping street in Frankfurt and is considered to be its most crowded street. It is normally populated with large crowds of people throughout the day. However, this culminates during the evening hours and during weekends. This is because at this time, majority of the people who live in and around the city are out shopping after work. Zeil is known for

having large departmental stores that sell almost any commodity that the customers need (Morris 77). For this reason, the street has established a culture of recording the highest sales on any given day in Frankfurt. This culture has also caused a lot of businesses to be established along the street. Generally speaking, it is the most active street in the whole of Frankfurt.

Business transactions on Zeil street take place for twenty four hours each day. The night is almost as active as the day. However, during the night, restaurants, bars and night clubs dominate the street life as opposed to daytime when retail purchasing and banking carry the day. The street has got green trees that not only add to the beauty of the city but also provide a cool shade during daytime.

Figure 2: Picture showing Zeil shopping street in Frankfurt

- Friedberger straÙe

The picture below shows Friedberger straÙe on a rainy day. It depicts the serenity and quietness of this street. Fewer activities go take place on this street compared to the other two streets. It majorly harbors wholesale stores and go-downs.

Figure 3: Friedberger straÙe on a rainy day

- Leipziger StraÙe

Leipziger StraÙe is the longest shopping street in Frankfurt. The street is considered to be less crowded compared to Zeil. It is also relatively quiet compared to Zeil. The street is famous for high class restaurants, retail stores and ample parking space. The ample parking space can be attributed to the long length of the street. It is a street that is normally associated with

high profile persons in the city. It is also the cleanest and most beautiful street in the city.

Figure 4: Leipziger Straße

## **Methodology**

Pedestrian count

- Zeil: 186
- Friedberger Landstraße: 76
- Leipziger Straße: 93

## **Customer questionnaires**

Parking space count

Parking space plays an important role in defining the threshold population and capacity within the chosen locations. At zeil, there were no actual parking spaces on the street but instead two huge underground parking facilities. Those facilities are attracting people, as they At the other two locations there were spots on the side of the road. The number of parking spots at each location is presented below:

- Zeil: 1976
- Friedburger Landstraße: 85
- Leipziger Straße: 27

## **Observation**

The method of observation was also deployed in the field study. There are a number of factors and activities that were observed. First, the population of people streaming in the three streets was observed with a view to determining the most crowded streets. The number of business stalls on

each street was also observed and counted. This was done with the aim of establishing the longest street (Morris 119). In addition to that, the kind of business activities undertaken by the people on the streets was also observed. This was done so as to establish the dominant business activity on the streets.

Furthermore, the hours of operation for the businesses were also observed. This observation was key in establishing the working or business hours of the executives and businessmen on the three streets. Lastly, parking space on each street was also observed. The reason for doing this was to establish the effect of the availability of parking space on the businesses that are set up on the streets.

## **Hypothesis 1**

Figure 5: Pie chart representation of hypothesis 1

The Zeil area gives the hypothesis validity based on comparison of goods and convenience. From the diagram, 75% of the Zeil location mainly comprises of the comparison of goods stores with goods and services considered to be convenient being at 20 %. This therefore indicates the Zeil offer more comparison goods compared to convenience in their services and goods. The fact that percentage of comparison goods and services is high validates this hypothesis. MyZeil covering larger part of Zeil have retail stores covered with more comparison goods as compared to convenience.

## **The picture shows the different stores and services in the Zeil.**

Figure 6: Graphical representation of comparison and convenience goods and services

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Leipziger Straße and Friedberger Landstraße are smaller as compared to Zeil with the two providing more retail stores for convenience services and goods. This therefore indicates that hypothesis one is true in urban location of Frankfurt. Christaller's theory proves the point that locations bigger in size have increased functions in both goods and services. Further, it can be proven that there is increase in comparison good with increased function from lowest location to that considered to be largest.

## **Hypothesis 2**

Focusing on the three locations; Fiedberger Landstraße, Zeil and Leipziger Straße, it is more likely that Zeil has a stronger sphere of influence due to its size. Fiedberger Landstraße and Leipziger Straße will have relatively close sphere of influence.

## **Drawing parking lot**

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Figure 7: Graphical representation of information on Parking Space for the three shopping streets

## **Drawing pedestrian count**

Figure 8: Graphical representation of Pedestrian count

Figure 9: Hinterland of all three retail centre, 0. 485km<sup>2</sup>

Some anomalies were reported as it normally happens in any given research. For instance, in Zeil the area had tourist across the globe whereby clients came from cities more than 300 Km. this therefore had slight anomalies in the sphere of influence. To balance these anomalies, these outliers were done away with to allow the sphere of influence to be more precise. Using



the Reilly's equation, to find the breaking points in these three locations, it was found out that Zeil had the largest sphere of influence and population threshold. The result excluded tourists who had traveled to shop in these locations.

This hypothesis tries to establish the nature of businesses that are set up in the three streets mentioned above. The hypothesis is of much significance in the following ways. First, the nature of businesses set up on a street can give substantial information on the distribution of retail patterns in different urban areas in Frankfurt, Germany. Through the identification of the type and nature of businesses that are conducted on the three streets, it is possible to come up with a subtle conclusion that can be used to plausibly make an accurate estimation of the retail patterns in the city (Morris 125).

Secondly, the hypothesis is important because it is capable of providing a cogent explanation for the type of businesses that are continually entering the market and their growth rate. The table below shows the percentage of each of these sectors in the three streets.

## **Type of Business Activities on the three Streets**

### Hypothesis 3

This hypothesis tries to establish whether there is a positive correlation between the distance travelled to reach the retail centre and time spent shopping in this centre. To determine the plausibility of this hypothesis, there was need to use the Spearman Rank coefficient. From the data obtained, it is quite clear that most convenience shoppers spend less than an hour in the locations. This translates to the fact that most shoppers who frequent the retail shops came to the centers to obtain there necessary

supplies within the shortest time possible. In addition, those individuals who spent less than an hour in the chosen retail location came from areas near the selected locations. On the contrary, individuals who shop for more than an hour are customers purchasing comparison goods whereby they spend a lot of time in decision making. These customers are perceived to come from locations that are far. The data obtained shows that there is a positive correlation between distance travelled and time spent. The table below succinctly portrays this relationship as indicated in hypothesis 3:

### **Relationship between Distance travelled and Time spent**

#### Hypothesis 4

Similar to hypothesis number three, Spearman rank was used to find the correlation between money spent and distance travelled. The data collected indicated that there is a weak correlation between these two factors. It was concluded that these events are more random thus creating negligible correlation between money spent and distance travelled. The table below shows the reality of this relationship in relation to the substantive hypothesis 4:

### **Relationship between Distance Travelled and Money Spent**

#### Conclusion

Although the hypothesis can be termed to be true, it is important to note that there were few anomalies. Hypothesis four was not true. The correlation was not significant and it just showed minimum positive correlation. It is quite evident that the two events appear to occur by chance.

## Evaluation

In the second field trip, it was difficult to get the people to answer the questionnaire as people were rushing against time in this particular time.

During the rush hour, most shoppers rushed to do their shopping hoping there are effectively serviced and head to other important business.

Based on the pedestrian count, we did not effectively strategized on the places to conduct the count. Due to this we were faced with some overlapping with the obtained result. This may therefore translate that the obtained data was not precise. Further, some individuals questioned about their travel, they indicated they were there for visiting and had arrived about ten minutes earlier. This definitely had a negative impact since factors brought the numbers of interviewers down.

Zeil being the largest commercial and financial centre of Frankfurt, there is an airport nearby. We therefore encountered tourists whose data collected from them was not effective. It was difficult to determine time spent and distance traveled correlation from the tourists. Finally, based on weather, the second field trip day was snowing thus hindering most of the customers visiting the shopping locations. It is quite evident that we have more shoppers during summer as compared to winter period creating variation in the data collected.

So as to improve on results as well as to ensure there are minimal inconsistencies in the data collected, there is need to also perform a field trip so as to have comparison in the analysis. Further, repeated field trips should be conducted as to have accurate and precise data so as to get a clear picture of what is happening in Frankfurt (Kroeger 125). It must be reiterated

that the distances in the appendices were calculated using the straight line mode, which means that the distances do not account for any geographical landmarks, mountains or any transport routes. Also, as the people in the original questionnaires did not give us their address, the distances that are presented in the data tables in appendix A and B only give a general idea of the sphere of influence. It would be convenient to change the research question so that it includes a broader perspective in order to ensure that adequate information is collected to help in making concrete inferences on urban geography in Germany

The current structure of the methods of collecting data may lead to the collection of inaccurate information. For instance, the types of businesses in the streets have been categorized into four sectors only. This may leave out other businesses that do not fall in any of the sectors. More questions also need to be added to the questionnaire so as to collect a lot of helpful information. From the information offered concerning pedestrian count and parking lot, Zeil is seen to be the largest street in the city and serves a huge population of people. This has an implication that expansion of the commercial and financial services in Frankfurt could be attributed to the level of activities and huge number of clients served by the Zeil shopping street.