The public transport, specially the tube, is a true solution for mobility problems today in big cities. The tube can be very useful, although building it requires very important inversions. Then, it must be really advantageous knowing, as accurate as possible, how will the service area of a new tube station be. That means, knowing what portion of the territory will be served and how many people will walk to the new station. In addition, knowing the service area of already built tube stations can be also useful. This way it is possible to know which urban sections are well served and which are bad served. That could be a criterion to decide where to build new tube stations, and even to know how many people will use them if they are built.

This study tries to find a way of modelling people arrivals in tube stations. The method of reaching that purpose is based on studying how long can the walking distance to the station be, triing also to find if that distance may change and because of what factors it changes. The walking distance can be defined as the distance that most of people walk to reach the tube station, so there is no more people, or too few people at least, who arrives in the station coming from a further place.

There is a model based upon some suppositions, which is defined in this study for getting, as accurate as possible, the walking distance of a tube station. There have been also done some interviews (260 in total) to tube users arriving in tube stations, at four stations previously selected. The users have been asked for the place they were coming from to reach the station by foot. The statistics of that interviews have been used to validate the model already defined, and even to calculate a numeric model for walking distances. The defined model predicts a walking distance which changes in each portion of territory around the station. The distance depends on the inclination of the streets where the user who goes to the station has to walk. There is also a tint, which has been added to that variation of the distance depending on the slope: it consists in the possibility for some tube users (who live between two stations) of reaching a station at the going trip, and going out from another station at the return trip, because maybe they always try to get descending slopes in their walking courses. That tint has brought to the model the distinction between entering service areas and going out service areas.

The model based upon that hypotesis has been calibrated, and it has been defined as a criterion for drawing the service area of a tube station. Then, in this study, there has also been taken this criterion to line 3 of Barcelona tube, and service areas of the stations of that line have been drawn. By analyzing the drawn service areas and comparing them to the service area obtained with another criterion, which is more common and simple, it seems that some urban sections which are usually called well served are not really well served. A result of this bad served sections can be observed in transport ways distribution. There have been done a comparison between some urban sections the model says they are well served and some other sections the model says they are bad served. The result from the comparison seems to be that, in bad served sections, the tube trips / car trips ratio is lower than in well served sections (which means that, in bad served sections, many people takes the car instead of the tube). Finally, it has been possible to validate the defined model using some field data which, although they are not copious, they are enough to take some conclusions.