

Maximizing the attendance by thought distributing public funds to performing arts venues

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Keywords

Cultural economics, willingness to travel, distance decay, performing arts.

Summary

Several researches have been conducted on travel willingness of the audience to the performing arts. Most studies are based on surveys filled in by consumers. The outcome mostly is an average distance for all performances within a certain genre like theatre, dance and concerts. In this study we worked the other way around. We studied databases of several theatres. Theatres with different programming and different areas to serve. The willingness to travel in this research differs from 15 till 145 kilometres for 75% of the audience. We found for the various genres a strong distance decay of the audience. Distance appears to be an important variable to explain the demand for performing arts. As a result of the research it can be stated that if it is an objective of cultural policy to maximise the total number of visitors to the performing arts in many cases it is preferable to have performances in various places than presenting them in fewer places. This is apart from extra transportation- and marketing costs for touring productions and probable concessions to quality if performances are presented in various places by local performing companies.

Introduction

The Netherlands makes a distinction between the exploitation of theatres and concert halls on the one side and the production of performances on the other side. The government provides subsidies for companies that perform across the country, whereas local governments provide subsidy for the venues. Traditionally, most of the Dutch performing companies travel across the country to perform in large and medium sized cities. This is different from countries where theatres are producing companies that perform in the same venue throughout the year. The traveling in the Netherlands has to do with the fact that the Netherlands has never been a centralised country in which the capital or the largest cities were the only centres of the arts. Moreover, the short distances between cities in the Netherlands make traveling for performing companies easy. Besides traveling several companies perform throughout the year in the same venue. For optimizing the effects of subsidies the desired geographical spread of cultural institutions can be examined. When focusing on the best quality of performing arts it can be

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advisable to spend a large part of the subsidy to a national institution located on one place, for instance a national opera company. People from all over the place are expected to travel to that particular place. Another situation occurs when an objective of cultural policy is maximising the number of theatre visitors. Is it in that case preferable to spend subsidy to central located or touring and local performing companies spread over the country? The answer depends largely on the willingness to travel of the audience.

Previous research

Traditional variables in demand functions for theatre tickets are price, price substitution goods, price additional services, income, time, quality and utility (Withers, 1977; Luksetic & Lange, 1995; Globerman, 1977; Felton, 1989; Throsby, 1979). With regard to utility Bockstael (1987) stated that time costs and travel time are constraints for maximizing utility. Verhoeff (1993) pointed at differences in attractiveness of performances (utility) and differences in costs (travel costs, opportunity costs) given all other exogenous variables like income, available time, cultural knowledge and social recognition when attending a performance. He found a large variability in the distances from home addresses to the visited theatres. Seaman (2006) mentions that higher costs of traveling can have negative effects on performing arts consumption. Also other research on the willingness to travel (Tobler, 1970; Eldridge and Jones, 1991) shows that the demand for goods and services decline exponentially as distance increases. Boter, Rouwendal and Wedel (2005) found a different decay of willingness to travel to various museums. They found a linearity between the utility of a museum and the disutility of traveling. They compared travel time of various segments of visitors using a museum card. McKercher (2008) stated that a decrease of the willingness to travel can be observed when the “gravitational” pull of a proximate place is higher than that of a more distant location. Performing arts organizations who present performances of high quality tend to be concentrated in urban areas. Waterman, Schechter and Contractor (1991) point that high quality of performing arts require a large local population to generate enough artistic talent and audience. Willis, Snowball, Wymer and Grisolfá (2012) relate the willingness to travel to the consumer surplus. The consumer surplus is equal to the inverse of the travel cost coefficient they found. Forrest, Grimes and Woods (2000) take consumer surplus as the difference between the distance a person is willing to travel and the distance a person actually has to travel. They combined zip code data with information on the socio-economic profiles of zip codes and found that for a regional theatre socio-demographic variables and composition of the population have a relatively larger influence on average attendance than distance to the theatre. In their research 44% of the consumer surplus comes from residents in areas around 12-20 kilometres of the theatre. Most of these areas lie within neighbouring municipalities. Zuzanek and Lee (1985) found that on short distance from a theatre in a middle sized city (in this study London) social status is a more important proxy than distance to explain the demand for theatre. With regard to travel behaviour Lu (1998) identified socio-demographic and time variables which are allocated to activity types like

household sustaining, recreation and social activities. Waterman et al. (1991) recognise the importance of social pressure as reason to attend performing arts while income, distance and age can be constraints to attend. In addition, various dimensions of psychological distances like social, temporal and spatial distances play a role in explaining travel behaviour (Lieberman, 2007). How about the journey itself, is it to enjoy or a mean to get somewhere? The willingness to travel in the opinion of Forrest et al. (2000) partially depends of the reason of traveling. They refer to the zonal travel cost model which reflects to the difference in reason to travel. Daily traveling to your work is another experience than traveling to a wood or an incidental journey to a theatre. The consumer surplus of traveling to countryside attractions is higher than traveling to a theatre. De Rooij (2013) conducted research on loyalty. He segmented coincidentals, incidental spectators, interested participants, core audience and friends. Coincidentals and incidental spectators in general live relatively further away from a theatre than interested participants and core audience. Coincidentals and incidental spectators are more artist or performance than venue oriented. They may visit several theatres and follow their favourite artists. Interested participants and core audience are more venue oriented. They visit their favourite theatre for the program and the service but also because of the simple fact that they live nearby. For enhancing the scope of a theatre in order to attract visitors from a longer distance, in the opinion of De Rooij (2013) it's preferable to invest in high quality performances instead of investing in loyalty. Waterman et al. (1991) found that media attention can extend the geographical scope of a theatrical production. Media influence the demand for tickets in the performing arts and the choice between attending live arts or watching tv and listening to recorded music. The choice between live participation and the use of various media is influenced by quality, distance, geographical location and physical and financial constraints. Waterman et al. (1991) also found that consumption of arts via the media appears more attractive for non-urban citizens. Forrest et al. (2000) provide an econometric evidence of a negative relation between distance and willingness to travel but a positive relation between the price of a ticket and the distance the audience is willing to travel. We are wondering if there's a causality between price and willingness to travel. It could be that a higher attractiveness of performances result in higher prices and in a higher willingness to travel. The founder of research on economical, geographical travel behaviour Walter Christaller (1933) perceived that every product and every service – which also includes a theatre performance – has its own scope, its own attraction area. This is the distance the consumer is willing to travel. He found that variables in determining the quantity of sold goods by a supplier are the nature of the good, the size of the population and the distance to the next supplier. Christaller inspired us for the method of research to segment the performing arts in different kinds of genres and in different levels of exclusiveness. We may conclude that besides traditional variables as income, ticket price, additional costs, price substitutes and utility including quality and taste, specific variables related to the performing arts explain the demand for performing arts. Here we can think of publicity, media attention, socio-economic and demographic aspects. These variables explain the demand for tickets on an aggregate level. On a micro level of a

specific theatre we can think of variables like exclusiveness and attractiveness of the program, the size of the local population, travel costs, travel time and the appearance of substitutes and competing theatres. With regard to substitution Gapinsky (1986) found that substitution of performing arts are not just the traditional examples like restaurants or cinemas but that lively arts substitute for other lively arts. This means substitutes within the program of a theatre or among theatres.

Research

The focus of this research is the influence of distance on the demand for the performing arts. For scrutinizing the willingness to travel research can be focused on travel distance, mean of traveling, travel time and travel costs. The orientation depends on the aim of the research and the applied research method. In our research we used databases consisting home addresses. The data are disposed by theatres who sell almost all of their tickets via the internet. Buyers of tickets need an account to log in and their home address should be filled out in order to get an account. A part of the tickets in the research are sold by a large national ticket centre who also knows the home address of its buyers. For the whole research more than two million home addresses were available. For determining the travel distance we use zip codes. The Netherlands have zip codes of four digits and two characters. For research on the level of a city two digits are appropriate. On the level of an area within a city or rural area four digits are appropriate and for a precise study on street level four digits and two characters are appropriate. For this research mostly the level of four digits is applied. We disposed of 12.399 different distances from a particular zip code to a theatre or concert hall. On the more detailed level of four digits and two characters we would have more than one million distances. The data for this research comes from seven theatres and one concert hall in the Netherlands, namely the Royal Theatre Carré (Amsterdam), Het Concertgebouw (Amsterdam), Orpheus (Apeldoorn), Martiniplaza (Groningen), Chassé Theater (Breda), Luxor (Rotterdam), De Rotterdamse Schouwburg (Rotterdam) and the Circustheater (The Hague). The Royal Theatre Carré is a large theatre which presents large-scale entertainment performances. Het Concertgebouw is the main concert hall in the Netherlands and the home of the Royal Concertgebouw Orchestra. The Circustheater is a private theatre presenting exclusive musicals that do not travel throughout the country. The remaining five theatres present different genres of performing arts like fine arts and/or entertainment and are focussed on a regional rather than a national area. This research consists of three studies on the willingness to travel on a regional and national scale. The first study shows the difference in the willingness to travel for various genres of performing arts. The study is based on the origin of the audience of three regional theatres. To analyse the willingness to travel properly we have to eliminate the differences in the size of the population. Therefore the second study concerns the distance decay of some regional theatres. Distance decay is the decrease of the part of the population that consumes a good or service related to the increase of distance. Here we eliminate the size of the population per researched area. The third study shows the willingness to travel to an exclusive offered performance.

Study 1: The distance travelled to different genres in a regional theatre.

The first study provides some insight in the distance from the places of origin of the audiences to the shows and concerts in a venue with a regional character.

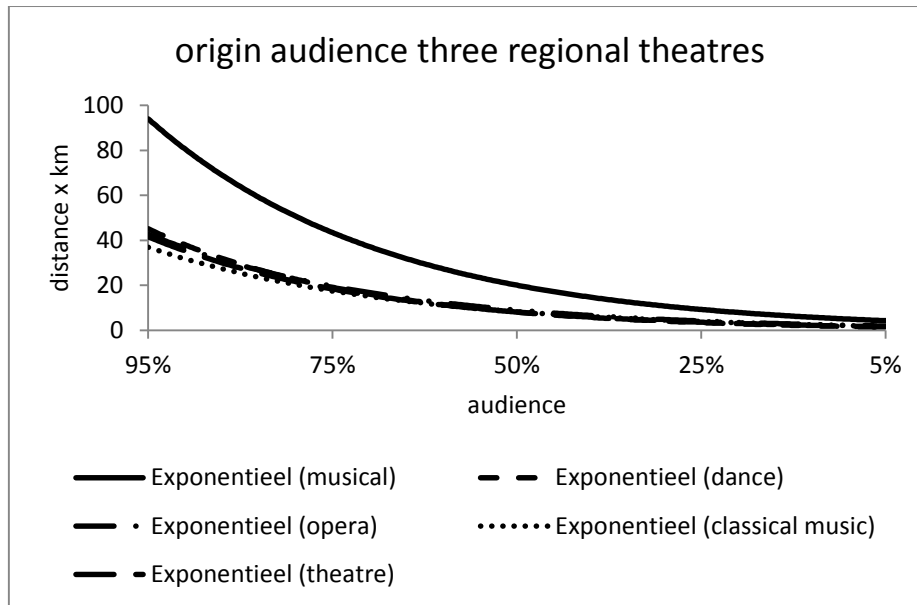


Figure 1: Origins of the audience in three regional theatres.

In this study we used the data for the season of 2009/2010 of the main theatre in Breda and two specialised theatres in Rotterdam: Theatre Luxor for entertainment and the Rotterdamse Schouwburg for the fine arts. The examined performances in Breda at the one side and the two theatres in Rotterdam at the other side are comparable. The environment of the theatres is not comparable. The city of Breda is located in a rural area and the city of Rotterdam is located in an area with a high population density. It's interesting to notice that the distance of the origin of audience for fine arts in both cities do not differ. There's also just a slight difference between the origin of audience for fine arts like theatre, classical music, modern dance and opera. It appears to be remarkable that fine arts attract visitors from a small distance compared to musical. See figure 1. When looking at the various genres on a more detailed level, 75 per cent of the audience for the genre musical comes from within a distance of 42 kilometres from Breda and 29 kilometres from Rotterdam, with an average of 33 kilometres. Here we found a significant difference in distance between a city in a rural and in an urban environment. The 95-tiel is less reliable because the last 25 per cent of tickets appeared to be bought mostly by small secondary ticketing agencies - who do not keep track of the origin of their buyers -, tourists and incidental groups. In the fine arts the average distance of the 75-tiel is 17 kilometres with a bandwidth of 15-18,8 kilometres. In previous research on this topic Verhoeff (1993) has stated that 75 per cent of the theatre audience resides within a radius of 13 kilometres of the venue. Thus, the radii in this study are slightly larger for each genre, claiming that the audience is willing to travel

further than the research of Verhoeff suggests. This difference could perhaps be explained by the fact that this study uses a dataset with more high qualitative and exclusive performances on a large scale, while Verhoeff's study included a more average offer of the performing arts. Another explanation could be the increased welfare including increased income, higher mobility and more leisure time since Verhoeff conducted his study in the 90s. Nonetheless, the distance the audience is willing to travel to the venue is not very long in either study. One might wonder what explains the differences in willingness to travel between musical and the other genres. As said, Waterman et al. (1991) already pointed on the importance of media attention. Marketing for the genre musical in the Netherlands usually is very professional. The publicity is on a national level in cooperation with the national media. This sets it apart from the other genres. Also, there are 'stars' created that the audience wants to see in real. This national approach combined with the star status of some of the actors could increase the willingness to travel. Rosen (1981) and Ginsburgh and Throsby (2006) elaborated on the economic side of stardom. Rosen states that talent of a star is not seen in the quality of the performance but in the probability that a show will be good. It appears to be an important marketing tool. Verhoeff (1993) concluded that the willingness to travel decreases faster if performances are less conventional, more complex and/or have less quality. Musical in general is perceived more conventional than for example dance and theatre. Our study confirms the finding of Verhoeff for musical. How about the other genres? Classical music and classical ballet are perceived to be conventional and complex while theatre and opera can have several combinations of complexity and conventionality (experimental drama, comedy, repertory theatre) (Verhoeff, 1993). Nonetheless, looking at the regional theatres, our research did not find a significant difference between the genres classical music, dance, opera and theatre although they have differences in complexity and conventionality. It means that for these genres our findings do not confirm the findings of Verhoeff.

Study 2: Distance decay

Where study 1 shows the origin of the audience, the data are influenced by the size of the population in the various areas. The elimination of this variable provides better insight in the relation between distance and the willingness to travel to a performance. Based on the zip codes of visitors of the theatres in Apeldoorn, Breda, Groningen and Rotterdam, the distance decay (tickets per 1.000 inhabitants per zip code) for three large-scale musicals is examined. Unfortunately it appeared not to be possible to do the same analysis for the genres dance, theatre, classical music and opera because related to the spread of the population the used zip codes for short distances are too rough. Figure 2 shows this relationship more precisely. It is remarkable that the willingness to travel shows such a strong decay. When the distance to the venue is rather short, for every 1.000 inhabitants (almost) 10 tickets are sold. When the distance to the venue increases to 20 kilometres this number is cut in halve. When it becomes 40 kilometres the willingness to buy a ticket is again cut in halve.

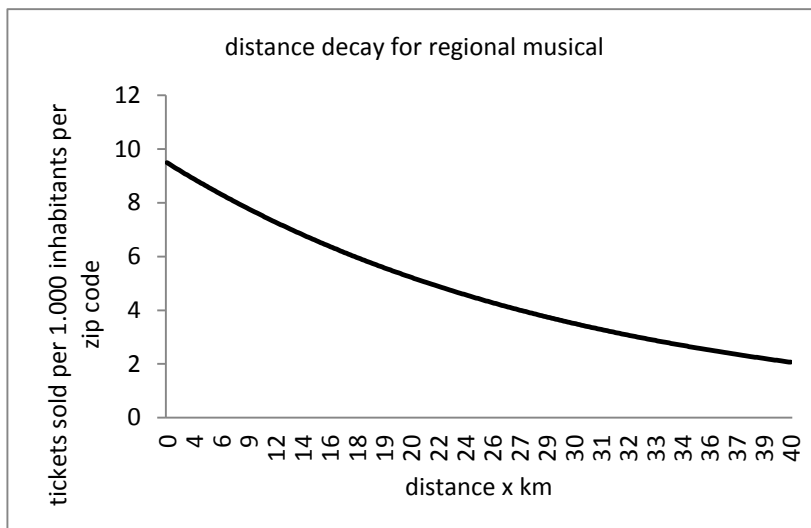


Figure 2: Distance decay for four large regional theatres – musical.

Study 3: Distance decay for a theatre with a national scope.

Whereas the first study discusses the origin of the audience of regional theatres and the second study the origin apart from population size, the third study is focussed upon a theatre with an exclusive offer on a national scale. The Circustheater is an exceptional theatre in the Netherlands. The shows performed here do not have a final end date – they have a so-called open-end programming – and the presented musicals are not performed at another location in the country. It is said that this theatre attracts an audience more or less spread equally from all over the country. The third study tries to find out if this is true by studying on the observed willingness to travel based on the data of the Circustheater.

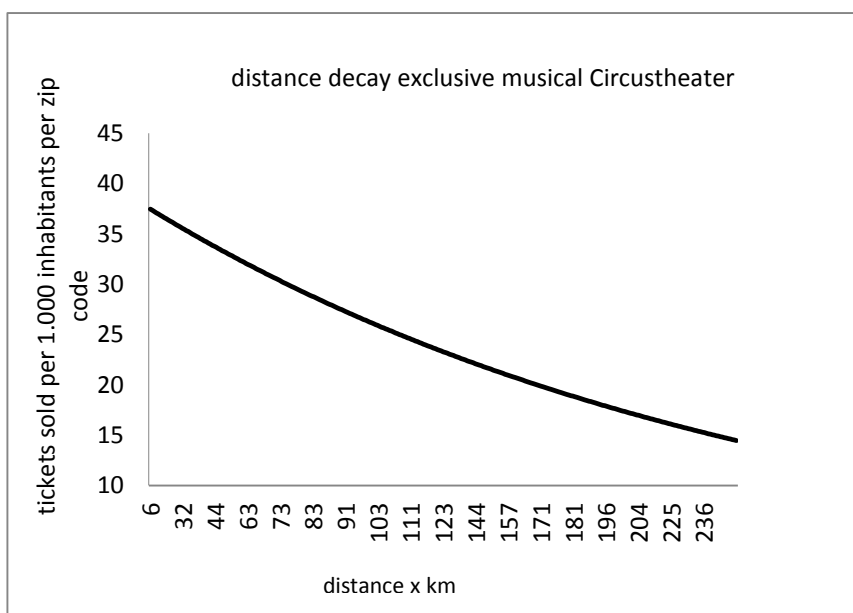


Figure 3: Distance decay of exclusive musical.

Figure 3 shows that the penetration for the Circustheater is of a higher level than the previously discussed regional theatres. This means more people from a certain distance come to see a performance in the Circustheater. The dataset consists of two musical productions of which one had its final curtain during the study, while the other was being performed during the time of the data collection. It appears that the audience is willing to come from substantial further distances to see a performance in the Circustheater than in a regional theatre. Nonetheless, there is still a decreasing willingness to travel; the further away, the fewer people come. Interesting to realize in this case is that this decay can not be due to the fact that the audience can see the same performance somewhere closer to home. Thus distance seems to be a variable for the demand of tickets. The correlation for the Circustheater between tickets and distance is -0,715 and is significant at the 1% level. See table 1. In comparison to regional theatres, the halving of the ticket sales per 1.000 inhabitants is not seen at 20 but at 180 kilometres. This means that if the same show was to be performed at a distance of 180 kilometres from the Circustheater in The Hague, 37 sold tickets per 1.000 inhabitants in the direct environment of The Hague would mean that at a distance of 180 kilometres away from The Hague 37-18,5=18,5 tickets per 1.000 inhabitants more could be sold. The total number of tickets sold would increase. The audience living nearby the second location who already intended to visit the musical in The Hague, does not anymore travel to The Hague but now visits the second location. Therefore, there will arise another patron of origin of visitors when increasing the number of theatres presenting the same musical. The scope per theatre will become smaller.

The absolute number of tickets sold depends on the population around the second location, but in the case of musical also on the distance to the outer limits of the Dutch language area. A simple calculation could prove whether the extra revenues outweigh extra marketing costs that come along with performing in various places. For a proper comprehension of the distance decay of exclusive musical we may not neglect that there's a spatial element involved. The distance decay of 50% occurs in a *circle* of 180 km around the theatre not at a *certain point* of 180 kilometers away from the theatre.

| Performance | musical region (various locations) | musical in capital (Carré) | musical national (Circustheater) | Classical music regional | Classical music (Concertgebouw) | Theatre regional | dance regional | opera regional | average |
|------------------------------------|---------------------------------------|-------------------------------|-------------------------------------|-----------------------------|------------------------------------|------------------|----------------|----------------|---------|
| Average travel time x min | 32,3 | 43,3 | 76,8 | 19,1 | 32,5 | 22,35 | 22,17 | 25,17 | |
| Average distance x km | 30,9 | 48,6 | 98,5 | 13,8 | 34,9 | 14,39 | 14,31 | 16,40 | |
| Correlation travel time x min** | -0,368 | -0,380 | -0,721 | -0,339 | -0,231 | -0,331 | -0,307 | -0,357 | -0,380 |
| Correlation distance and tickets** | -0,371 | -0,380 | -0,715 | -0,364 | -0,224 | -0,339 | -0,297 | -0,354 | -0,381 |
| n combinations zip codes – theatre | 5.832 | 3.216 | 180 ¹ | 274 | 164 ² | 886 | 647 | 857 | |
| 5%tiel x km | 2,9 | 3,8 | 6,00 | 3,00 | 3,00 | 2,15 | 2,15 | 2,25 | |
| 25%tiel x km | 9,5 | 17,9 | 44,5 | 3,00 | 3,00 | 3,10 | 3,00 | 4,00 | |
| 50%tiel x km | 23,4 | 36,2 | 89,4 | 4,7 | 21,6 | 5,60 | 4,68 | 7,19 | |
| 75%tiel x km | 39,3 | 65,3 | 144,6 | 17,9 | 45,6 | 18,05 | 17,95 | 17,68 | |
| 95%tiel x km | 92,8 | 135,4 | 209,7 | 51,5 | 120 | 52,75 | 64,40 | 52,58 | |

ad 1) two digit zip codes

ad 2) zip codes per municipality

** Correlations are significant at the 0.01 level (2-tailed).

Table 1: Distance, travel time, origins of audience 2009-2010.

As was shown in study 2, the distance the audience travels for the fine arts in the region is limited (75 per cent of the audience lives within a radius of 17 kilometres from the venue). For a programme with high quality on an international level and containing rather exclusive performances like the Concertgebouw in Amsterdam offers, 75 per cent of the audience travels 46 kilometres at the most. For exclusively offered high-pitched musicals (Circustheater) 75 per cent of the audience is willing to travel a longer distance, namely circa 145 kilometres. The Concertgebouw and Royal Theatre Carré who present high qualitative but not exclusive performances and concerts attract 75% of the audience till 45-65 kilometre away. See table 1 and figure 4. Nonetheless, in all cases when the distance increases the willingness to travel decreases. It's obvious that the more exclusive and the more attractive a performance the larger the scope of the genre or the venue presenting that particular genre.

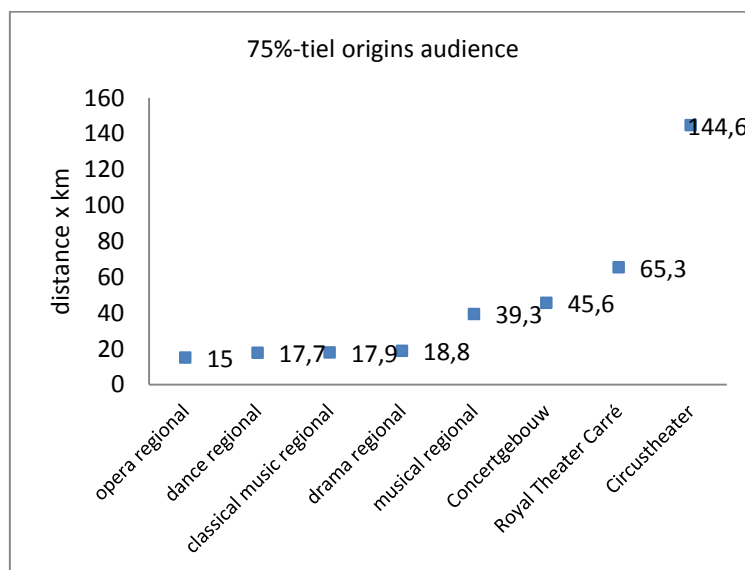


Figure 4: Origins of 75%-tiel audience of various genres.

Travel time or travel distance

It could be argued that examining travel time instead of travel distance could result in more general conclusions and geographical circumstances. The examined data of distances from one to another zip code also contain travel time. The travel time is measured by the use of a car and depends on the kind of road and constraints like ferries. It appears that the results of the study of travel time and travel distance are equal. Also the statistical significance of both groups of data are equal. See table 1.

Conclusions and recommendations

This research shows that the willingness to travel is limited. Distance appears to be an important factor in deciding whether or not to see a play or to go to a concert. When optimizing the impact of subsidies, from an economic point of view it seems recommendable to support performances of fine arts only when the presenting venues are at least 15-19 kilometres apart from each other provided that the capacity of a theatre is sufficient to fulfill the demand of tickets in its particular area. In practice this could be accomplished when theatres cooperate on their programming on a regional level. From the point of view of the audience an infrastructure with venues too far located from each other is neither optimal. Theatregoers barely travel longer than 19 kilometres for fine arts presented by (national) performing companies in regional theatres. As a result of this, a smaller total number of visitors is reached when fine arts (including a high-pitched and exclusive programme) are only offered at one or a few locations in the country. A limited number of locations goes at the expense of the total number of visitors to the performing arts. The distance decay of performances depends on genre, publicity, popularity of artists, exclusiveness and attractiveness of shows and the location of competing theatres. This means if it is an objective of cultural policy to maximise the total number of visitors to the performing arts it is preferable to encourage presenting performances in various places than concentrating them in fewer places. This is apart from extra transportation- and marketing costs for touring productions and probable concessions to quality if performances are presented in various places by local performing companies.

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