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## The value of recreational areas in urban regions

Gosens, T.C.A.P.

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# 6

## Conclusion

### 6.1 Introductory remarks

Over the years the amount of household income that the Dutch consumer is able to spend on recreation has grown considerably (NTBC-Nipo Research 2011). The supply of recreation sites has grown at a corresponding rate, which implies that the consumer's choice set for recreation has become larger. The Netherlands is at the same time one of the most densely populated countries in the world, and land is scarce in some regions of the country. Hence, it is crucial to supply these sites that correspond with the consumer's preferences at the right locations. For this reason, this thesis has discussed the current preferences of the Dutch consumer with respect to various recreation decisions, namely the destination choice, the travel mode choice, the number of recreation trips, the recreation activity type choice, and the time allocation choice.

Part I of the thesis, which is Chapter 2 and 3, has discussed which amenities of the municipalities' recreation sites attract the consumer to opt for some destination, which was targeted in research question 1. Chapter 4 extends some of the results of Chapter 2 and 3. These chapters' results give policymakers as well as market suppliers of recreation sites a view on how to construct the sites in such a way that they adhere with the consumer's preferences. Part II of the thesis, Chapter 4 and 5, has put the consumer's choices for some destination into perspective, and finds out to what extent the residential location of the consumer and other commitments shape the behaviour of the consumer. This corresponds with research question 2.

Section 6.2 will discuss the findings related to the first research question. Section 6.3 follows with a summary of findings on the second research question, while Section 6.4 provides some implications of these results for policymakers.

## **6.2 Which destination type does the consumer prefer for recreation?**

Chapter 2 and 3 have discussed, respectively, the consumer's destination choice for trips with a nature-based and urban recreation purpose. We have considered eating out, bar and nightclub visits, and recreational shopping trips in the agglomeration centre as urban recreation activities, whereas all recreation trips undertaken in nature comprise the former activity type. These two recreation activity types have been given attention, in separate chapters, for two particular reasons. First of all, the participation rates in the Continuous Leisure Survey, the data sample used throughout this thesis, and in other surveys suggest that the consumer values these activities highly. This was enough reason already to study these activity types, as in the end this thesis' goal is to review the consumer's current choices on recreation. Another reason however lies in the involvement of the authorities. The supply of these two recreation activity types is, at least indirectly but mostly directly, the result of the authorities' policy choices, and for matters of efficiency it is better that their plans for the supply of facilities are tailored to the preferences of the consumer.

The nature-based recreation destination choice model discussed in Chapter 2 has only evaluated trips undertaken outside the urban confines, with the destination choice considered at the municipal level. The model in the chapter consisted of two stages, a first-stage discrete choice model and a second-stage linear regression model. An important advantage of this approach, introduced by Murdock (2006), is that it enables the researcher to deal with the possible correlation between unobserved characteristics and an explanatory variable, in this particular case the travel distance variable. As long as there is variation over the consumers in the potentially endogenous variable this variable does not get captured by the alternative-specific constants in the first stage of the model and can be estimated without the use of instrumental variable techniques. What has struck from the estimates in this chapter is that the consumer rates the presence of cultural heritage, here measured with the number of national monuments in the non-urban area, positively. This positive preference had been mentioned in other published studies already, such as Tempesta (2010), Ruijgrok (2006), and Zhao et al. (2013), but has now been established in a nationwide revealed preference study. This chapter has moreover established a positive effect of the non-urban land area size, and the landscape diversity of this non-urban land. The model does not have a monetary measure among the variables which complicates the calculation of the willingness-to-pay (or willingness-to-accept) for an alteration in the supply of the amenities considered in the model. The travel distance coefficient, expectedly signed negatively as is the case with downward-sloping demand curves, however

allows for the calculation of an alternative welfare measure: the willingness-to-travel. The chapter has therefore compared a change in the area size of the non-urban land with a (comparable) change in the diversity of the landscape, and shows that the effect on the distance travelled is larger for the landscape diversity policy. With the estimates in mind, the chapter has also considered whether the National Parks as well as rural-urban fringe recreation sites in the Netherlands have been granted to the municipalities that would be expected, and this is confirmed for both types of nature-based recreation sites.

The destination choice model for urban recreation trips in Chapter 3 revealed that the consumer choose for destinations which have a monumental outlook. Three indicators for the extent of cultural heritage were tested in this chapter, and all proved significant. The number of catering facilities served as the indicator for the urban recreation area size, but should be interpreted as the combined effect of the number of non-daily shops and catering facilities. Consumers rate such facilities, unsurprisingly, positively as well. The cross-effect of these two characteristics was however signed negatively, suggesting that there is a limit to the needs of the consumer for this activity type. Because of fears of endogeneity with respect to the urban recreation area size and the number of monuments in the urban area of a municipality this chapter has applied the same model as in the previous chapter. Now, on the contrary, there was an instrumental variables regression in the second stage of the model, with the current number of residents and the number of residents in the year 1830 as the instruments for the endogenous variables in the model.

Destination choice models are also part of the analysis in the fourth chapter.<sup>73</sup> This chapter narrows its scope, in comparison to Chapter 3, from the destination choice for urban recreation trips to the destination choice for recreational shopping trips. The positive mean effects for cultural heritage and area size were however replicated, as well as the negative sign of the these two variables' cross-effect. The total effect has however turned out negative for a larger number of municipalities, suggesting that the effect of cultural heritage wears off more quickly for recreational shopping trips. On top of that, we were able to include indicators for the share of franchise stores present in the municipality centre, the diversity in the shopping choice set, and the amount of water and greenery in the municipality centre. Although not directly related to the recreational shopping experience, these latter two variables were expected to please the consumer because of their often cited atmosphere-enhancing qualities (see e.g. Van Duijn and Rouwendal 2013 for these amenities' positive effect on housing prices). Municipalities with a high share of franchise stores have a higher probability of being visited by the consumer, which is in line with the general thoughts in the literature on the effect of anchor stores (see e.g. Oppewal et al. 1997). To some surprise, the analysis in this chapter was unable to find an effect of the shopping choice set diversity on the municipality's likelihood to be chosen.

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<sup>73</sup> The other results of the fourth chapter will be discussed in Section 6.3.

### **6.3 What consumer type makes what recreational choice?**

This thesis' goal is not constrained to determining which amenities of recreation sites are attractive to the consumer. The second research question has targeted gaining insight into concepts that are at the core of recreation demand: which type of consumer undertakes which trip, at which particular moment, to what extent, and in which particular fashion? These topics have been dealt with in Chapter 4 and 5.

Chapter 4 started off with a renewed analysis of the consumer's destination choice, in this instance for recreational shopping trips and nature-based recreation trips, but has moreover provided input on the consumer's recreation activity type choice and the number of recreation trips. Recreation was here defined as (or, in other terms, constrained to) the two recreation activity types for which destination choice models were estimated. The analyses of this chapter have helped to answer the second research question, which sought after the relationship between the consumer's accessibility to some type of recreation activity sites on the one hand, and the consumer's participation *and* extent of participation in this activity type on the other. Recreation demand literature usually assumes the effect of accessibility is positive, hence consumers with good access to sites of some activity type are expected to participate more often in this activity type, and, if the level of access is satisfying for other recreation activity types as well, also in recreation in general. Are these expectations however also empirically confirmed for the Netherlands? To investigate this issue, the three consumer choices were connected to each other in a model that is consistent with utility maximisation. The estimates of the destination choice models have been translated into utility-based accessibility variables, and were added to the recreation activity type choice model. The accessibility to nature-based recreation has produced a counterintuitive result, as the level of accessibility to nature-based recreation sites does not make the probability that a consumer opts for nature-based recreation any larger or smaller. As noted, the recreation demand literature usually alleges otherwise, and (Dutch) government policy on the supply of nature-based recreation sites revolves around the notion that a minimum threshold level of accessibility should be realised for each consumer. Suggestions for the lack of proof go in two directions: 1. the accessibility level is fairly consistent across the country, and hence truly contributes only marginally to the consumer's decision, or 2. the accessibility level differs substantially across the country, but consumers with lower levels of access nevertheless participate as the participation in the activity is a necessity. Some further investigation of the data has suggested the second explanation is more plausible, which indicates that the government has not reached their goals completely, and suggests that consumers should be able to arrange their daily schedules more efficiently if the supply of nature-based recreation sites complies to a greater extent with the consumer's preferences. The accessibility to recreational shopping sites is however positive and statistically significant, as expected given travel demand theory.

There is however not enough evidence to conclude that better access to recreation, defined as the combination of both recreation activity types, leads to a higher number of recreation trips, since the statistical significance of the accessibility variable in the negative binomial regression model has been found to depend on the specification used. Other characteristics specific to the consumer however augment the number of recreation trips, as well as the choice between recreation activity types, significantly. For instance, higher levels of household income promote the participation in recreation, as well as the choice for nature-based recreation activities. These estimates comply with the findings of recent local surveys such as Gadet and Bosch (2013) on nature-based recreation participation in Amsterdam. Non-native and elderly consumers also deserve a mention here. As the share of both non-native consumers and elderly consumers is growing (and will continue to grow) in the Netherlands, it is vital to analyse which preferences these consumer groups currently exactly have. These consumer types' preferences have appeared similar with respect to the number of recreation trips, as both consumer types on average undertake a higher number of recreation trips than their counterparts, which contrasts with other studies' findings. Their other choices however differ, as non-native consumers undertake more recreational shopping trips and elderly consumers participate more often in nature-based recreation. Lastly, the models of the fourth chapter have also shown that the number of recreation trips as well as the division over the recreation activity types differs across the year. Logically, the mild weather and holidays during the summer months invite the consumer to undertake more recreation trips, particularly for nature-based recreation purposes.

Chapter 5 has considered the consumer's time allocation process during a pre-defined choice interval, here a day of 24 hours. The consumer was able to allocate time to nature-based recreation in four different environment types, to all other recreation activities, and to all non-recreation activities. The accessibility to each of the four environment types was calculated with the estimates of an underlying travel mode-destination choice model. The estimates of the time allocation model have shown that the consumer responds positively to an increase in access for each of the environment types, although the effect is smaller for agricultural land and urban parks than for forestland and water spaces. The time allocation model has a satiation parameter for each time-use category as well, and the estimates for these satiation parameters have been proven fairly equal to each other, except for the recreation at water spaces and dune land. At this environment type single trips usually take longer, hence the satiation level is lower for this time-use category. The adversity towards travel distance differed slightly across the environment types, and the consumer is the most and least adverse to travel (for all travel mode types in the model) for the recreation at, respectively, agricultural land and water spaces. It is not merely accessibility that influences the time a consumer spends on some activity type, at some environment type. The analysis has shown that consumers with fulltime commitments (jobs or

schooling) allocate far less time to the recreation at any nature-based environment type than their counterparts without job or education commitments. In combination with the findings of Chapter 4, in which the consumer with fulltime commitments was found to undertake fewer recreation trips, these findings indicate that this type of consumer clearly is less occupied with recreation: fewer trips and less time allocated. The non-native consumer is also here not very interested in recreation at nature-based environments. If the non-native consumer decides to participate, the urban park seems to be the favourite destination, which, strikingly, is a preference that does not hold for the retired consumer.

#### **6.4 What policy implications does this thesis have?**

This thesis has discussed the current recreation choices of the consumer, on various topics, and, of course, there is no absolute certainty that the findings of this thesis will continue to hold in the future. The development of new communication techniques has for example shifted the extent of participation in some activities to other activities in recent years, and such future “shocks” in the lives of consumer have the potential to alter the pattern of recreation choices again. However, there is reason for educated predictions, because we know how the composition of society will develop in the near and not so near future, and thus is the implementation of policies that fit with the general preferences of the consumer advisable.

In some sense, three things are quite certain. First, the average age of the Dutch consumer will continue to increase for at least two more decades, as the so-called *babyboom* generation is still only slowly reaching its retirement age. This thesis has shown that especially consumers over 50 years old appreciate nature-based recreation. Even though the retirement age of the Dutch consumer has been increased and a withdrawal from the labour market before reaching the retirement age has become more complicated, the use of sites for nature-based recreation can be expected to increase because of these demographic changes. Secondly, the share of non-native consumers in the Netherlands will continue to grow, most prominently in the major urbanised areas of the country. These consumers are currently not as interested in nature-based recreation as the native Dutch consumers, although there is always a possibility such interest will grow and urban parks have already proven to be an alternative that they take into consideration. And thirdly, urbanisation from economically weaker regions to the the west of the Netherlands is likely to endure (see De Jong and Van Duin 2012; Ritsema van Eck et al. 2013 for recent predictions). As such, a higher number of consumers will want to use the, at best, same amount of resources for nature-based recreation.

The estimates of the fourth chapter have already shown that a mismatch exists between the rate of access to nature-based recreation sites and the Dutch consumer’s participation in activities executed at such sites. However, notable changes in national policy in recent years are not likely

to make the provision of new or adapted sites an easy and smooth process. First of all, the national government has revised its view on urban policies, and is now less concerned with keeping urban agglomerations in the Netherlands compact and within fixed borders, as has been sought after for a long period of time (Maat and Arentze 2012). Secondly, responsibilities for nature policy have been decentralised, which may lead to inefficiency issues. And lastly, budget cuts have been imposed on the lower levels of government, which is likely to have consequences for the possibilities of these government bodies if no additional taxes will be charged.

The mismatch of demand and supply of nature-based recreation sites is largest in the urban regions and especially urban agglomerations of the Netherlands, as has been established in Section 1.1.3 and Chapter 4. Chapter 5's simulation exercise however suggests a part of the solution to accommodate the urban-region resident's demand for nature-based recreation. Providing new urban parks comes together with new users of these parks, who in addition do not use the automobile for such trips and are predominantly residents of the urban agglomeration. Hence, there is not much additional traffic involved with the extra provision of urban parks, and the provision of such parks does not clash with the decentralisation policies of the government. The provision of extra parks would also fare well with one particular consumer type in the Netherlands: the consumer with non-native roots. This consumer type is already residing, to a large extent, in the urban agglomerations of the Netherlands, and moreover enjoys recreation at urban parks. Urban parks thus seem to connect with many of the consumers closely residing to such alternatives.

There are however other consumer types as well, and some of them will always have a preference to recreate outside the urban confines, such as the group of elderly consumers. Chapter 4's insignificant coefficient for the accessibility to nature-based recreation sites has shown that, in the current situation, consumers still consider the sites despite worse access, but the distance decay can become too large and let the consumer reconsider the trip. The decentralisation trend in the government's urban policies and the continuing urbanisation forces are likely to further threaten the provision of nature-based recreation sites in urban regions, and make these worries realistic. Therefore, sites should better accommodate to the tastes of the consumer in order to persist as alternative. This thesis has considered some of the amenities that the consumer values when undertaking a nature-based recreation trip, and especially the combined result of the area size and the landscape diversity provides food for thought. Policymakers are able to increase the attractiveness of non-urban areas with a dominant landscape type by making room for elements of other landscape types, which interests in light of the low value attached to for example the Green Heart, the low urbanised area around which many of the urban agglomerations of the Randstad region are situated (Goossen and De Boer 2006). Based on the estimates of Chapter 2, it seems that a strategy in which the authorities

augment the variety of the non-urban landscape in areas close to for example the four major agglomerations of the Netherlands (The Hague, Utrecht, Rotterdam, and Amsterdam) could pay off. Such a strategy could be complementary to the provision of additional urban parks in the major urban agglomerations, which triggered quite some response in the simulation exercise of Chapter 5. Duly noted, the difficulty probably lies in aligning the long list of actors involved in the decision-making process.

Another amenity that proved to be an attraction factor for both recreators in nature and urban environments is the municipality's cultural heritage. The cultural heritage present in the non-urban area of a municipality thus not only has historical value, but may actually allow the non-urban resident and the local government to reap external (economic) benefits. Governments with attractive heritage in its administrative boundaries may for example promote the provision of small-scale catering facilities, which can be provided by the residents of non-urban areas. Cultural heritage can of course not be *created* in an instance, and as such local governments will have limited options to augment the attractiveness of their municipality instantaneously. There is however a probable role for local governments in the provision of facilities that increase the consumer's comfort at sites with interesting heritage.

The situation is different for the heritage in the agglomeration centre. The benefits that can be reaped from international tourism are well-documented, and the estimates of this thesis have given local governments an additional reason to preserve the heritage. Especially in this period of time, which sees an increase in online shopping transactions, municipalities should consider such options to attract local and non-local consumers to the agglomeration for recreation purposes. The study on recreational shopping trips has moreover suggested that agglomeration centres with a high percentage of franchise stores attract the consumer to recreate there. Along with the area size of the agglomeration centre and the presence of cultural heritage there thus seem to be factors that, if monitored and persuaded rightly, may attract the resident of another municipality as well, and provide benefits to a municipality's economy.