

# Method for Arriving at Maximum Recommendable Size of Shopping Centres (MaReSi SC)

---

Aud Tennøy

To cite this report: Aud Tennøy (2012) Method for Arriving at Maximum Recommendable Size of Shopping Centres (MaReSi SC), in Angela Hull, Cecília Silva and Luca Bertolini (Eds.) Accessibility Instruments for Planning Practice. COST Office, pp. 133-137.

# Method for arriving at maximum recommendable size of shopping centres (MaReSi SC)

Author of report: Aud Tennøy

Organisation: Institute of Transport economics

Address: TØI, Gaustadalleen 21, NO 0349 Oslo

E-mail: ate@toi.no

## Background

This instrument has been developed by the planning authorities in Oslo, in order to help dimension shopping centres in the municipality in accordance with their overall plan for development of shopping and services (Municipality of Oslo, 2003). A description of this plan and the system it is embedded in is attached as appendix. The planning authorities apply the method, together with the plan itself, to calculate the maximum size for new shopping centres or extensions of shopping centres in specific locations, in order for the centre to serve a population about equal to the number living in walking- and bicycling distance from the centre. The instrument and the plan are interrelated. I don't think a tool like this can be applied if not rooted in an overall plan. Further, the plan and the method are in accordance with state-of-the-art knowledge in coordinated land use and transport planning, and there are strong local and more general empirical evidence for the main assumptions.

The sector plan for retail development in Oslo aims at a retail development supporting and strengthening the existing retail structure. This is characterised by many smaller retail centres, located in densely populated areas which are well covered by public transport services, and with only the main city centre as a regional or city-wide centre. This structure ensures that most people in Oslo have walking distance to their nearest centre, which among others contributes to good accessibility to shopping and services, low car shares on shopping journeys and to short shopping trips. Fewer and bigger centres would increase the average travel distances from the homes to the nearest shopping opportunity, and hence reduce accessibility and increase car use on shopping journeys. This strategy has been followed for a long time in Oslo, and have resulted in a 'many and small' centre structure.

When the planning authorities give advice to developers and to decision makers regarding the size of new retail centres, they calculate the maximum dimension of the shopping centre based on the number of people living in the actual walking and bicycling distance from the centre in the future, defined as within one km and between one and two km. I refer in the following description to the plan and the method in general (Municipality of Oslo, 2003), to research by Tennøy *et al.*, (2010) regarding methods for analyses in planning for relocation and dimensioning of shopping centres, and to Tennøy's (2012/forthcoming) case studies of application of this method in a particular zoning plan process.

## Conceptual framework and theoretical underpinnings

In the overall plan and the description of this instrument (it is not defined as an instrument, it just explains how the planning authorities assess the shopping centres with respect to localisation and size), accessibility to shopping and services is understood and measured in terms of walking distance to the nearest shopping and service centre from the inhabitants' dwellings.

There are no references to grand theoretical underpinnings for this way of understanding accessibility, unless the general understanding that the longer the walking distance, the fewer can and will walk. This is particularly so when discussing older people and people that for any reason have trouble walking. This is empirically substantiated in the background report to the overall plan. It is not explained why they chose these exact definitions etc.

## Operational aspects

Accessibility is measured as real walking distance from dwelling to shopping centre.

In the Økern case, the number of people living within one km and two km real walking distance of the site today and in 2025 was defined with the help of geographical information systems (GIS) and data of location of

residences, as well as known plans and probable developments in the area, and population extrapolations. Thorough knowledge of the existing retail structure is mandatory (context). This was combined with empirical data regarding average spending in these kinds of centres (with the rest being spent in the city centre). The future turnover of the centre was calculated based on this.

*Turnover (NOK) within walking and bicycling distance* = number of people within 1 km and between 1 and 2 km from the centre (persons) x percentages of spending at this centre <sup>1</sup> (%) x spending per persons in such centres (NOK/person)

Figures for average turnover per square metre for such centres was collected (register data), and the size of the future centre – given that it served people in walking and bicycling distance, and have somewhere near average turnover per square metre – was calculated:

*Centre size (m<sup>2</sup>)* = Turnover (NOK) within walking and bicycling distance/Average turnover in similar centres (NOK/m<sup>2</sup>)

This is a simplified description, but it includes the main concept.

By not allowing the centre to be bigger than this, one ensures that the centre does not need to draw customers from outside walking and bicycling distance, and also that it probably will not be attractive for people living other places to travel the extra distance in order to do their shopping at this centre rather than at the centre closest to where they live. It does not 'steal' customers from other centres and affect those centres negatively. Still, it will be big enough to serve the local market and the majority of the population will have shopping and services nearby.

The data required is the number of people living within one and two kilometres real walking distance from the site of the proposed centre, as well as existing and expected retail structure. GIS, maps, accessible population data extrapolations, and known plans are relevant data, as are average register data for spending on shopping in such centres and for necessary or average turnover per square meters in shopping centres.

The planning authorities emphasise that this method is not very time-consuming. The calculations are straightforward, and no advanced model needs to be developed and maintained. It requires mainly data that are available in a plan-making process anyhow.

Most planners should be able to carry out this analysis. Planning knowledge is the main competence necessary. Only a very limited *technical* expertise is required.

## Relevance for planning practice

The output of this instrument/method is the size of a new retail centre proposed in a certain location that is necessary in order to be big enough to serve those living in walking and bicycling-distance from it. The concrete output is the number of m<sup>2</sup> necessary and recommended. The planning authorities recommend to not build larger centres, since that may ruin the structure of provision from many and smaller centres. This would cause reduced accessibility to shopping and services, as well as increase car dependency and traffic volumes.

The instrument has been applied by the planning authorities in Oslo for some years. I have studied the use of the method as part of the analyses for the zoning plan process for Økern centre (Municipality of Oslo 2010, 2010a).

In this case, the initiators proposed to build a 60.000 m<sup>2</sup> shopping centre as part of a 160.000 m<sup>2</sup> project in a transformations area about 4 km from the city centre of Oslo. This would be the biggest centre in Oslo, and only three centres are more than half the size of the proposed one. The planning authorities applied this instrument/method to arrive at the appropriate size according to overall plans, and to explain to the initiators, the district politicians, the public and the decision-makers how and why a shopping centre this size would affect the existing infrastructure negatively and contribute to increased car dependency and traffic volumes.

With the help of the described instrument, they calculated the optimal size of the shopping centre to be about 25.000 m<sup>2</sup> in 2030 (of the total 160.000 m<sup>2</sup>). The instrument was hence useful in the decision-making by allowing the planning authorities to take a stand and explain why the proposed project is not in accordance with

---

<sup>1</sup> The share of their spendings will vary, depending among others on location and content of nearby shopping centers. In this case, people living within 1 km were supposed to spend all of their shopping money (except what is used in the city centre) here, while people living 1 – 2 km from the centre would spend 30 % of their shopping money here and people living more than 2 km from the centre would not spend money here. This is obviously a simplification of reality, but it is well explained in interview why it is reasonable to do it.

overall plans, and to recommend the decision-makers to reject it. By these simple calculations, they defined in a logical and easy to understand way what the right size of the centre would be, if the project was to contribute to the defined objectives in the overall plans. This also allowed relevant regional authorities to file formal complaints. This means that the case will be decided by the Ministry of Environment rather than the City Council.

If this instrument had not been used (in combination with the overall plan), it would be harder for the planning authorities to demonstrate the discrepancies between the overall plan and its objectives, and the proposed project and its consequences. This would also make it harder for the regional authorities to file formal complaints.

## Strengths and limitations

The planning authorities claim that this method is understandable, transparent and requires less work than other methods. Hence, all involved parties can apply it, understand it, and contribute in the discussions regarding retail development.

In interview, the senior planner responsible for shopping and service development plans explained that the planning authorities are pleased to have established a way to calculate the size of new shopping centres that is rough, clear and understandable, and that is firmly rooted in the overall plan.

The basic, simple and logical principles of the overall plans and the methodological simplicity of the instrument are important. The overall plan contributes to the further development and strengthening of the centre structure, and that there is no unnecessary competition between the centres. The present method is simple, the underlying assumptions are easy to understand, and the computation/analysis is not very labour intensive to carry out. This is considered important and necessary because the planning authorities in Oslo deal with many such cases and cannot have a tool that is too labour intensive to use.

The developer and consultants can also make such calculations, and it is important that the principles are clear and simple. Complicated and detailed analyses do not necessarily offer more and better information to decision- and policy-makers. In Oslo, the planning authorities see no need to do this in more detailed ways.

It is emphasised that the overall plan is the main steering tool. Such analyses are nevertheless useful in planning processes, particularly because those working in the planning authorities have different competences and expertise in this field. The analyses help to clarify the consequences at the overall level and at the project level.

Tennøy *et al.*'s. (2010) evaluation of 'retail planning' in the 13 largest cities in Norway, found that the combination of Oslo's binding sector plan for retail (required at county level in Norway) and the described method for dimensioning the centres meant that Oslo had 'the best' planning practice for retail developments. This was especially so for the dimensions of ease of understanding and transparency.

In an analysis of national travel survey data, Engebretsen, Hanssen and Strand (2010) found strong support for people normally choosing the closest opportunity for especially daily retail and services, and that shopping centres become more car-based the bigger they are.

So far, the plan and the instrument have worked well in Oslo. The plan and calculations have been respected by developers and decision-makers, according to interviews with the planning authorities (Tennøy *et al.*, 2010). In the ongoing zoning plan process discussed above, however, the City Council have adopted the plan in spite of the planning authorities' recommendations not to do so. Because of formal complaints from two regional authorities, the final decision needs to be made by the Ministry of Environment. It will be interesting to see how this case ends.

## References

Engebretsen, Ø, Hanssen, J.U. and Strand, A. (2010). *Handelslokalisering og transport. Kunnskap om handlereiser* (Effects of locations of shopping on transport. Knowledge about retail journeys). TØI report 1080/2010. Available at: [www.toi.no](http://www.toi.no).

Municipality of Oslo (2003). *Kommunedelplan for lokalisering av varehandel og andre servicefunksjoner. Del I Plan* (Municipal sector plan for localisation of retail and other service functions. Part I Plan). Planning authorities. Available at: [http://www.plan-og-bygningsetaten.oslo.kommune.no/getfile.php/Plan%20og%20bygningsetaten/Internett/Dokumenter/plan/planer/kommunedelplaner/kdp\\_14\\_varehandel\\_del\\_i.pdf](http://www.plan-og-bygningsetaten.oslo.kommune.no/getfile.php/Plan%20og%20bygningsetaten/Internett/Dokumenter/plan/planer/kommunedelplaner/kdp_14_varehandel_del_i.pdf).

Municipality of Oslo (2010). *Økern senter. Planforslag til bystyret. Reguleringsplan med med konsekvensutredning* (Økern centre. planning proposal to the City Council. Zoning plan with impact assessment). Planning authorities. Dated 19.02.2010. Available at: <http://web102881.pbe.oslo.kommune.no/saksinnsyn/showfile.asp?fileid=2539828> .

Municipality of Oslo (2010a). *Økern senter, reguleringsplan med konsekvensutredning* (Økern centre, zoning plan with impact assessments. The case presented to the Standing Committee on Urban Development). Dated 03.12.2010.

Tennøy, Aud (forthcoming 2012). How and why planners make plans which, if implemented, cause growth in traffic volumes. Explanations related to the expert knowledge, the planners and the plan-making processes. PhD thesis, Norwegian University of Life Sciences, Institute for Spatial Planning and Landscape Architecture.

Tennøy, Aud, Tanja Loftsgarden, Jan Usterud Hanssen og Arvid Strand (2010). *Erfaring med handelsanalyser i Framtidens byer* (Experiences with retail analyses in 'the Cities of the Future'). TØI rapport 1071/2010. Available at: [www.toi.no](http://www.toi.no).