Population Forecasts and Functional Regions

The County of Stockholm is divided into 1,300 areas that have varying characteristics. These were called “Census Areas” until 1990, when they were re-named “Basområden” (Base Areas), which corresponds to the international term “Small Areas”.

Since 1990 they have been used for various planning purposes (traffic modelling, population forecasting, geographical information systems, etc.) and by various institutions (the municipalities, the health care sector, the police, etc.).

In close co-operation with Statistics Sweden (SCB), Register statistics are presented for each Small Area, and each area is categorised according to the most important characteristics for planning and forecasting purposes. The Areas are then used in geographical aggregates, which are defined by the users.

The number of Small Areas grows as the Stockholm region grows, and the Stockholm region grew much faster than expected during the last decade. This unexpected growth has created a housing shortage and serious traffic problems, so more accurate population forecasts have become increasingly important to region’s planners.

One of the consequences of this strong growth is that parts of the counties surrounding the administrative region of the County of Stockholm are being rapidly absorbed into the Stockholm region. As a result, one of the most important factors affecting long-term planning of the region’s infrastructure is, today, where you work in relation to where you live, rather than simply where you live.

1 The Functional Regions of Stockholm

The purpose of this Seminar is to show the results of the project “Regional Enlargement of the Stockholm/Mälar region”.

Our present task is to assess what impact the region’s infrastructure development has had on the individual’s choice of where to live and where to work. In this context, existing administrative boundaries that divide Sweden into counties and municipalities are not relevant.

“The Regional Development Plan for the County of Stockholm” produced by The Office of Regional Planning and Urban Transportation (RTK) states:

“The Stockholm region is formally known as The County of Stockholm, but the functional region covers a much larger area.

Many people commute from adjacent areas to their jobs in the County of Stockholm, thereby relieving some of the County’s housing problem. Students can choose to study in neighbouring counties with lower-cost housing. Large numbers of people outside the County of Stockholm take advantage of its cultural institutions. The extensions to the Mälar and Svealand railways have opened up the functional region, which today incorporates much of the neighbouring area. In the long term, an even larger area will become part of the Stockholm region.”

To learn more about the functional region of Stockholm, RTK and SCB are collaborating on a project that aims to use Register statistics presented for grid-frames. The purpose is to find out what enlargement has occurred to the Stockholm and Mälar regions during the period 1990 – 2000, and to determine its relationship to the region’s infrastructure.

The hypothesis is that Stockholm might form not one, but several functional regions, depending on which category of the labour force is being studied; when working with and illustrating the data in a Geographic Information System, these regional patterns become evident.

One example of “labour force category” is “males with a University education, born in Sweden, working within the County, but living outside it”.

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The study shows the geographical patterns of where the economically active population of the county of Stockholm live 1990 compared to 2000. Register data on a gridframe level show that different categories of the economically active population form different functional regions. The study presents a way of analyzing register data, where the gridframes are used to form zones around the heart of Stockholm. The characteristics of the economically active population who lives in different zones are analyzed.

Other results are that the whole increase of economically active in the county of Stockholm between 1990 and 2000 is due to an increase in commuting from the Mälar region. The economic growth of the region together with a shortage of dwellings, makes people commute. The study gives details on which categories of the economically active that commute.

The results are presented in graphs and maps, which shows the different functional regions for males and females and for people of different origin and educational background.


Estimates of demographic risks are subject to great uncertainty, due to the enlargement of the Stockholm region, the large amount of two-way migration, and the increased level of commuting to Stockholm. There are several data sources available for the Stockholm region that can be used to remove much of this surrounding doubt.

Population projections serve as important information for regional planning. Most projection models are based on estimates of future fertility-, mortality and migration-rates. In general the migration-rates are the most difficult to predict. In this paper a brief description of the projection model used for the County of Stockholm is given and a more detailed description of the prediction of the future domestic migration-rates.

The model is a multi-regional cohort-component model where Sweden is divided into two regions: Stockholm and ‘other Sweden’. Migration is estimated by using age/gender specific migration rates. Moreover, migration rates are also adjusted depending on the time an individual has lived in the region. An empirical fact is that migration rates are higher the first years after moving to a new region and this information is incorporated into the model. The model does not explicitly take any external factors such as unemployment rates or other economic factors into account. In the short perspective (1-2 years) the migration rates are mainly predicted based on recent trends but for the longer horizon the rates are adjusted based on predicted changes in the housing stock in the County of Stockholm.

The Office of Regional Planning and Urban Transportation (RTK)

RTK is responsible for regional planning and development in the County of Stockholm. It is also responsible for issues that concern the environment, nature conservation, Stockholm’s archipelago, statistics, and population forecasts. RTK works with, and takes initiatives in, all structural issues that relate to the County of Stockholm, the Mälar region and the Stockholm region. Mrs. Ulla Moberg, Head of Statistics, Stockholm County Council, has overall responsibility for this project.

Statistics Sweden (SCB)

SCB produce, co-ordinate, and make available, official statistics relating to various areas of society. These can serve as a basis for public debate, research, and the decision-making process. SCB also undertake consultancy assignments, and commissions for specially processed data and data collection.

Mrs. Marie Haldorson, Mr Gunnar Hedin and Mr. Johnny Sehlin participated in this part of the project.

Statisticon

Statisticon is a consultancy company that specialises in advanced statistical analysis and research. It works in collaboration with SCB and Stockholm County Council on various projects, particularly those
involving population forecasting and small area population forecasting, and modelling of demographic variables and migration.

Assistant Professor Mr. Johan Bring, Mr. Jan Ericsson and Mr. Tomas Pettersson participated in this part of the project.