Experimental Statistics in Finland: A Review of the First Five Years

Kristian Taskinen[1]

[1]*Statistics Finland*

Abstract

Experimental statistics play a key role in advancing statistical methodologies and generating novel insights not available through official high-quality statistics. This article focuses on the first five years of Finland's journey into experimental statistics, providing summary on produced experimental statistics. In addition, some innovations of experimental statistics are also presented, and lessons learned evaluated.

In 2024, Statistics Finland produces around twenty different experimental statistics. Article provides a summary on these experimental statistics including insights on subjects, types, frequencies, quality, and usage of these statistics measured with web page visitors.

Additionally, the article showcases some innovative approaches provided by experimental statistics, such as 1) linking micro and macro data to produce indicators on global value chains 2) using the national income register to produce monthly information on population's economic activity and employment 3) linking statistical data to geographic data and location data to produce information on national traffic network coverage.

As this review coincides with the fifth anniversary of Finland's journey into experimental statistics, the article also evaluates lessons learned so far. Key considerations include 1) the success of the life cycle management of experimental statistics, 2) the alignment of development with user needs, and 3) quality of produced experimental statistics.

The article provides valuable reflections on these aspects, contributing to the ongoing evolution of experimental statistical in Finland and in other European countries.

Keywords: Experimental statistics, innovation, quality, statistical programme

1 Introduction

Statistics Finland has published experimental statistics for five years. The scope of experimental statistics is wide, covering different subject areas of statistics with different publication frequencies. Typical reason for experimental statistics is the production of information on new phenomenon, and related development work. Other grounds for experimental production are the application of new source data and methods.

In 2024, the planned number of experimental statistics published by Statistics Finland is 18 and will remain at the same level as in 2023. New experimental statistics in 2024 provide information on the effects of enterprises' innovation activities, household energy consumption, and economy of wellbeing services counties. The list of experimental statistics to be discontinued includes the turnover of the main industries. The need to publish this separately will disappear with the speeding up of the official publication of turnover indices.

Many innovative solutions can be found in experimental statistics, which spread in official statistical production would be useful. For example, micro-data linking exercises, utilization of location data and the use of register data to speed up official statistics. The five-year experiences provide a good basis for the discussion on the future of experimental statistics.

2 Experimental statistics published by Statistics Finland in 2024

2.1 Economy and globalisation

According to Statistics Finland’s annual program 9 experimental statistics on the field of economy and globalisation are published in 2024 (see Table 1). The frequency of these statistics varies from monthly to every 3 years. The reasons for experimental status of these statistics are mainly related to lack of international standards, and production processes under development. All these experimental statistics, except Trend indicator of output, provide new information on Finland’s economy. Trend indicator of output is developed to provide more timely information economic trends. Most used experimental statistics in this category based on the number of web page visitors in 2023 were Innovations of enterprises and Trend indicator of output. In next chapter 2.1.1 Trade in Value-Added statistics is described as an example of innovative approaches provided by experimental statistics.

Table 1: Experimental statistics on economy and globalisation

Name	Frequency	New content	Timeliness
Trend indicator of output	Monthly		x
Investments of enterprises	Quarterly	x	x
Ownership changes of enterprises	Annually	x	
Innovations of enterprises	Annually	x	
High-growth enterprises	Annually	x	
Renovation price index	Bi-annually	x	
Income, costs and debt of wellbeing services counties	Annually	x	
Trade in value added	Annually	x	x
Global value chains	Every 3 years	x	

2.1.1 Trade in Value-Added (TiVA)

Traditional foreign trade statistics give an accurate description of the goods that an individual country exports and imports across the borders. However, sticking to the gross values of exports and imports in foreign trade statistics weakens their usability in a globalised world. In the world of global production arrangements, gross values multiply easily when raw materials and semi-finished products are moved from one country to another to be further processed. For this reason, information is also needed on value-added foreign trade, i.e. the part of production that benefits the domestic economy.

Together with the OECD, Statistics Finland has developed value-added foreign trade statistics based on the Trade in Value Added framework (TiVA) created by the OECD and the WTO. The collaboration has focused on producing data with a shorter time delay and at a more granular level than before. The result of the development work is a more accurate picture of the integration of Finnish enterprises into global value chains and the effects on, for example, the labour force and the distribution of income in the economy. National annual TiVA indicators are currently published 15 months after the reference period. OECD's latest published reference year of TiVA indicators is 2020 and in Finland preliminary indicators for 2022 were published in March 2024.

Value-added-based foreign trade indicators are produced by combining several micro-data sets, data from national accounts, foreign trade statistics and supply and use tables. Indicators published under experimental statistics are part of the results of a joint project implemented by Statistics Finland and the OECD in 2019 and 2020. The description of the production method

can be found in the joint project's final report Globalization in Finland: Granular Insights Into the Impact on Businesses and Employment (OECD and Statistics Finland, 2020).

2.2 Population and society

According to Statistics Finland's annual program 9 experimental statistics on the field of population and society are published in 2024 (see Table 2). The frequency of these statistics varies from monthly to annual. The reasons for experimental status of these statistics are mainly related to lack of international standards, and production processes under development. Most of these experimental statistics provide new information on population and society. Wages and salaries statistics and Monthly main activity of population statistics are developed to provide fast information based on register data. Most used experimental statistics in this category based on the number of web page visitors in 2023 were Wages and salaries, Traffic accidents with game animals and Apartment sales and rental announcements. In following chapter 2.2.1 Monthly main activity of population and Traffic network coverage statistics are described as examples of innovative approaches provided by experimental statistics.

Table 2: Experimental statistics on Population and Society

Name	Frequency	New content	Timeliness
Inheritances and gifts	Annual	x	
Wages and salaries	Monthly		x
The main activity of population	Annual	x	x
The main activity of population	Monthly		x
Electricity consumption of households	Annual	x	
Apartment sales and rental announcements	Monthly	x	x
Use of rental cottages	Semi-Annual	x	
Traffic network coverage	Annual	x	
Traffic accidents with game animals	Annual	x	

2.2.1 Monthly main activity of the population

Statistics Finland's Employment statistics provides annual information on the main activities of persons belonging to the Finnish population. Based on the main activity, the population is divided into those in the labor force and those outside the labor force. The labor force includes the employed and the unemployed. Those outside the labor force are 0-14 year olds, students and schoolchildren, pensioners, conscripts and civil service men and others outside the labor force.

National income register and other register data offer the opportunity to produce faster information on the main activities of the population. In the experimental monthly statistics on the main activity of the population, the data can be published with a delay of about three months from the reference month. Annual information of the Employment statistics is published approximately one year after the reference year. The monthly information produced in the experimental statistics on the main activity of the population is thus more up-to-date, and in addition, information is obtained on the seasonal variation of the main activity of the population.

Monthly experimental statistics on the main activity of population shed light on the possibilities provided by register data in the statistics. Register data enable the production of faster and more granular information. The derivation of the main activity for persons used in the monthly statistics differs from the annual derivation of the Employment statistics. In the experimental statistics, new derivation method is tested, and new register data sources used.

2.2.2 Traffic network coverage

Experimental Traffic network coverage statistics describes information on the traffic network throughout Finland. Statistics can be used to monitor the development of the regional coverage of the traffic network in Finland. The measure used in the experimental statistics is the share of the population for whom e.g. the stop, station or terminal is within a pre-defined time limit. Time limits for access have been defined together with experts from the Ministry of Transport and Communications. International recommendations have also been applied when it has been possible.

The routes have been calculated from the center of square kilometer-sized statistical grids to the stop, station or terminal of the mode of interest. That is, for example, a point-like location has been defined for railway stations, to which the temporal distance from the center of the population grid has been calculated using the routing interface.

All the source data for Traffic network coverage statistics has been compiled from open data sources and the routing has also been done using an open interface. In connection with the publication of statistics, square level data with routed travel times are published. Traffic network coverage statistics is an excellent example on how location data and new routing tools can be used in statistics production.

3 A way forward with experimental statistics

First experimental statistics published by Statistics Finland was in 2018 and since then around 30 different experimental statistics has been produced. Users have warmly welcomed experimental statistics and appreciated especially new innovative solutions and improved timeliness provided by these statistics. For example, experimental Trade in Value-Added statistics (presented in chapter 2.1.1.) has provided new insights on country dependencies during the time of global tensions.

Annually 1-2 experimental statistics are transferred to official statistics program when the production processes have settled, and quality criteria of official statistics met. Some experimental statistics have already been published under the experimental status around 5 years, which does not correspond the initial idea of statistics under development. Keeping statistics as experimental has some advantages both for statisticians and organisation. Administrative processes, quality and description requirements are lighter for experimental statistics compared to official ones. On the other hand, experimental statistics are also sometimes appealing alternative for organisation under tight budget since the process of quitting official statistics is more complicated, if needed for example due to resource cuts. In the future it would be good to have some kind of indicative time limit for experimental phase.

In generally the quality of experimental statistics is high and almost comparable to official statistics. Production processes include same phases with validation checks as official statistics. Production of some experimental statistics include significant amount of estimation methodology, thus differ a lot from traditional production of statistics based on aggregating source data. Statistics Finland have started to call these kinds of statistics as indicators in order to make difference with traditional statistics.

Currently experimental statistics are published with separate publication system and process. However, content of experimental statistics looks almost the same as official statistics including release, graphs and data base tables. The documentation section is lighter for experimental statistics, e.g. metadata and quality descriptions. In the future the plan is to integrate experimental and official statistics under the same publication system and process.

Is seems that experimental statistics are here to stay. Because of resource constraints some prioritization should be conducted in the coming years. One idea is to prioritize experimental statistics based on pre-defined priority areas of Statistics Finland's development, which are currently national accounts, environment, population and well-being. In addition to this some kind of cooperation with stakeholders (e.g. ministries and research institutes) could open up new opportunities for experimental statistics. Partnerships could expand expertise, data sources, and funding to enhance the scope and quality of experimental statistics.

References

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