

Analyses from Statistics Denmark

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Abstract

DST Analyses is a publication series from Statistics Denmark that has been released since 2015 with 15-25 issues each year. Each analysis is a self-contained text that describes a subject of general interest typically also covered by official statistics. An analysis, however, is different from official statistics in several ways. Typically, it is crosscutting, contains more explanatory text, and is normally intended as a one-off piece. The analysis also comments more on the subject and puts its findings into perspective. When we started producing DST Analyses, it was a bit controversial, but perhaps mostly so within Statistics Denmark. Users of the analyses have generally not found it problematic that Statistics Denmark has a product that resembles the analytical products of many other organizations, like think tanks or other (openly) opinionated policy institutes.

Keywords: Analysis, communication, users.

1. Introduction

In 2015, Statistics Denmark (DST) started compiling and publishing a series of crosscutting analyses under the headline “DST Analyses”. As per June 21, 2022, the number of published analyses is 149.

The decision to initiate a new publication series had several purposes, both external and internal. Externally, the analyses could demonstrate the possibilities with the vast amount of data that DST has gathered. In addition, it should make DST relevant in the public debate by providing contemporary knowledge that could serve as basis for an informed discussion and evidence based decision-making. Internally, the analyses would provide the subject matter experts with a possibility to publish aspect of data and insights that does not fit well into the typical format of official statistics.

A DST analysis is a description of a phenomenon of general interest that is typically covered by the official statistics program, too. However, in an analysis we explore the phenomenon under study from multiple points of view and supplement the usual statistical tables with more elaborate and explicit interpretations. Thereby, we deviate

in a substantial way from the traditional disseminations, which Statistics Denmark have published since its inception in 1850.

From an organizational view, the division of Methodology and Analysis has the responsibility of this publication series, but the analyses are the result of a collaborative effort, that involves many divisions. Sometimes the subject matter divisions are the main driver behind both the idea and the work leading to the publication of an analysis, with the staff of the Analysis subdivision functioning mostly in a consulting role. Sometimes the staff of the Analysis subdivision are the main drivers with the staff of the subject matter divisions mainly providing insights on the data. Mostly it is a mixture between these two. The Communication division primarily plays a role in the final stages with the practical aspects of the publications process but also with preparing press releases as well as post for social media. Only a few analyses include experts external to Statistics Denmark as authors. This is primarily due to a concern of independence.

Obviously, the choice of topics for analyses can be difficult. If our main aim of producing analyses was to generate a high number of downloads and public citations, we now have a fairly good understanding of what kind of topics leads to this kind of response. However, we also want the analyses to reflect the broad number of topics that our data covers, and ideally we want many employees of Statistics Denmark to be involved.

Although the decision to start producing analyses at Statistics Denmark was a bit controversial, it has proved to be a success and is now an accepted part of Statistic Denmark's activities and the analyses provides the subject matter experts with a possibility to share their deep insights that goes well beyond the tables and graphs typical for official statistics.

Another benefit of producing analyses is that we become analytical users of our own microdata, much in the same way as researchers having access to microdata under the auspice of DST Research Services, which has functioned for more than 30 years. By using the data for analytical purposes rather than producing official statistics, we often discover new aspects of the data that we were not aware of beforehand. This can be as simple as errors in single variables for single observational units, but it can also be ambiguities in the documentation of the data (metadata) including description of the variables and concepts, but also the comparability over time and the coverage

of the data. In this way, the process of producing analysis adds to the quality of the data.

2. What is an “Analysis from Statistics Denmark”?

A DST analysis is a relative short (typically 5-10 pages distributed in PDF format) description of a phenomenon in society of general interest that typically is also covered by the official statistics program. Other than that, we do not have a formal definition of what an analysis is.

Another approach is to say what a DST Analysis is not. It is not intended to be a scientific journal article loaded with formulas and references and following the introduction, methods, results, and discussion (IMRAD) structure although some analysis do come pretty close to this. Neither is it a typical journalistic newspaper article, since many details about data and methods are included. It is more of mixture between the two since elements of both can be identified.

The structure of a DST Analysis follows a strict template with the front page being given special attention. The figure below shows the elements of the front page:

- Logo, date of first publishing, and year/issue;
- Title (more factual than catchy);
- Byline (with affiliation and contact information for corresponding author);
- Abstract in a few short paragraphs;
- Main conclusions in bullet form

Logo, date of publishing, and year/issue

Byline

Main conclusions (in bullet form)

Title

Abstract (a few short paragraphs)

Contact information (corresponding author)

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2022:5

Tilskud og udligning fylder mere i næsten alle kommuner i 2021 end i 2020

af Magnus Bo Nørholt og Niels Jørgen Maa Pedersen¹

Der er stor forskel på kommunernes økonomiske vilkår, bl.a. på grund af forskelle i udgiftsbehov og skattegrundlag. Tilskuds- og udligningsystemet søger at udjævne kommunale forskelle, så kommunerne har mulighed for at finansiere nogenlunde samme service-niveau ved nogenlunde samme skatteprocent. Staten finansierer en væsentlig del af systemet via tilskud, mens der også sker en direkte omfordeling af indtægter kommunerne imellem via udligningsystemet.

I 2021 trådte et nyt udligningsystem i kraft. Denne analyse ser på, hvordan tilskud og udligning fordeler sig mellem kommunerne efter udligningsreformen, og om der er væsentlige forskelle i forhold til før reformen trådte i kraft i 2021.

Analysens hovedkonklusioner:

- Kommunerne modtog tilsammen 118 mia. kr. i tilskud og udligning i 2021 mod 107 mia. kr. i 2020. Det svarer til henholdsvis 23 pct. og 21 pct. af kommunernes samlede bruttoindtægter.
- Syv kommuner havde i 2021 nettoudgifter til tilskud og udligning, mens resten havde nettoindtægter.
- I gennemsnit havde kommunerne 17.200 kr. i nettoindtægter fra tilskud og udligning pr. indbygger i 2021. Det er 1.300 kr. mere pr indbygger i 2021 end i 2020.
- 92 ud af de 98 kommuner havde højere nettoindtægter eller lavere nettoudgifter pr indbygger fra tilskud og udligning i 2021 end i 2020. Løse og Lolland kommuner havde de største stigninger i indtægter fra tilskud og udligning og modtog hhv. 6.100 kr. og 4.800 kr. mere pr. indbygger i 2021 end i 2020.
- Der er forskel på, hvor stor en andel af indtægterne tilskud og udligning udgør i kommunerne. I gennemsnit udgjorde tilskud og udligning netto 19,5 pct. af indtægterne i kommunerne i 2021. I 19 kommuner var andelen over 30 pct. I 84 kommuner voksede tilskud og udligning som andel af indtægterne i forhold til 2020.
- Nettoindtægterne fra tilskud og udligning pr. indbygger er størst i kommunegruppen "landkommuner", mens der i "hovedstadskommunerne" er størst variationen i nettoindtægter pr. indbygger fra tilskud og udligning.

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Flere analyser og nyhedsbreve på dst.dk/analyse

The remainder of the analysis is built around unnumbered sections (and possibly subsections) supplemented with “boxes” typically containing details about either data or methodology that are not necessary in order to follow the progression of the text. We often add an appendix with more elaborate or detailed tables, methods, or figures.

The main part of the text is ordered such that the most important findings are towards the beginning such that the reader who does not reach the end of the analysis still gets the most important messages. References are typically not very numerous and often have the form of a footnote and a hyperlink.

A DST Analysis does not end with a conclusion or discussion of the topic since the role of a national statistical institute is not to comment on issues but rather to provide fact that users can use as a point of departure for their discussions.

3. Workflow for an analysis: From idea to publication

The release of a DST Analysis is the culmination of a rather lengthy process. A DST Analysis will normally take 2-5 months from idea and first draft to publication, and therefore they do not target current stories in the media – we have other options if we choose to involve in very recent topics.

Ideas for an analysis can be hatched everywhere in the organisation, but most ideas arise either with the staff producing official statistics (subject matter experts) or with the staff in the Analysis section. The Analysis section also keeps a gross list of ideas and tries to balance which ideas get further attention.

When expanding on an idea, the first step is typically to get hold of data and make some explorative analysis to see if the main questions can be answered. This typically involves studying the coverage of the data and assuring that the concepts and representation behind the data are relevant. A central repository of rich metadata is vital for this exercise, but consulting the subject matter experts is also often beneficial. We also do a literature review to ascertain that our planned analysis is an original contribution to the area.

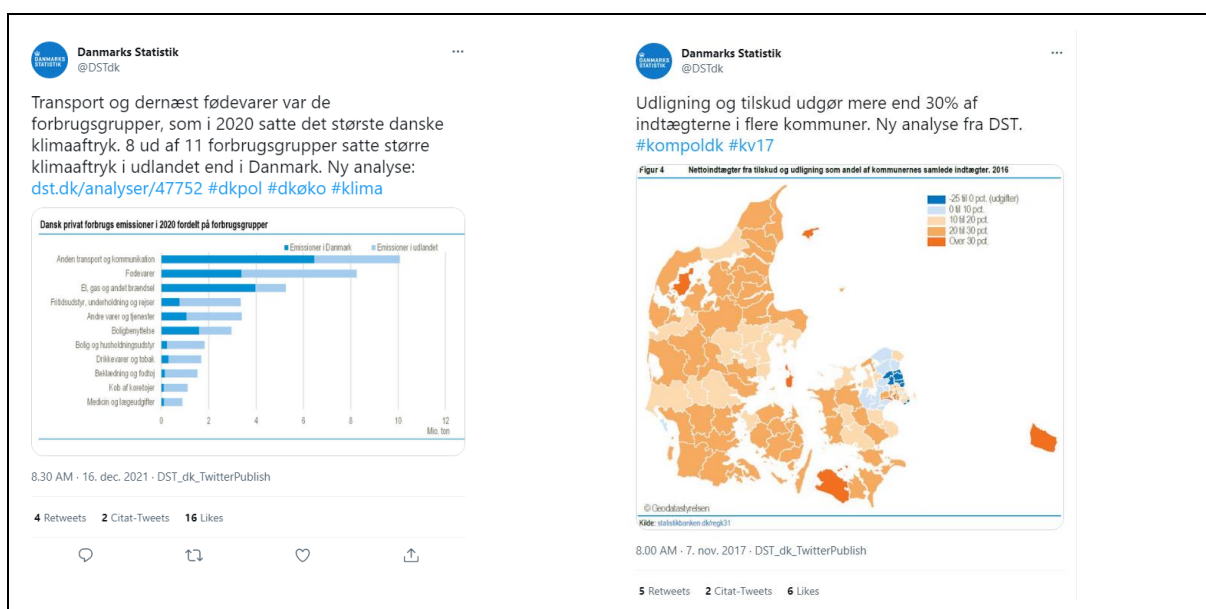
After confirming the relevance of said data source, the analysis can progress to a more targeted stage, where the analysis will get a more fixed structure: The analyst creates the figures and tables that will be the main way of communicating the result, and then produces a draft text. Over a couple of iterations the analysis will get closer to the final form, and when the main text including figures and tables is about finished, it is condensed into the ‘front page’ with regard to the aforementioned structure.

Then a review process follows which typically has two steps. Firstly, the relevant heads of division read and comment and the analyst revises the manuscript according to the comments. Secondly, the relevant directors and the director general also read the manuscript, which after a final revision is ready for publication.

It is only at this stage that the publication of an analysis will find its way to the official publication calendar, typically a week in advance. Sometimes we try to make the publication date coincide with or slightly precede a related event, but interfering with public debate or making the headlines of the news is not a priority. (In fact, it is rather the opposite: The analysis should provide the background for others having a fact-

based discussion, the national statistical institute should not be a part in this discussion).

In most cases, the release of an analysis will be accompanied by a press release produced by the journalists in the Communication division and a post on Twitter and perhaps LinkedIn and Facebook. The press release is quite traditional and often contains quotes from the authors commenting on the content of the analysis. The purpose of the press release is to spur some interest among journalists such that the analysis will get a mention in mainstream media. The post on social media (like on Twitter as shown in the figure below) is aimed at a broader audience.



Sometimes journalists will contact the corresponding author for further comments on the analysis, but this happens relatively seldom. We anecdotally estimate that only 1 in 5 analyses result in inquiries from journalist. It is far more usual that users will ask for detailed figures covering an area of special interest to them or ask for the data behind the figures. Sometimes we anticipate this and provide additional material alongside the analysis, typically in the form of a spreadsheet file that can be downloaded on the DST website. In other cases, this is not possible, and we refer the interested users to DST Consulting who can often provide the requested numbers for a nominal fee.

4. Number and impact

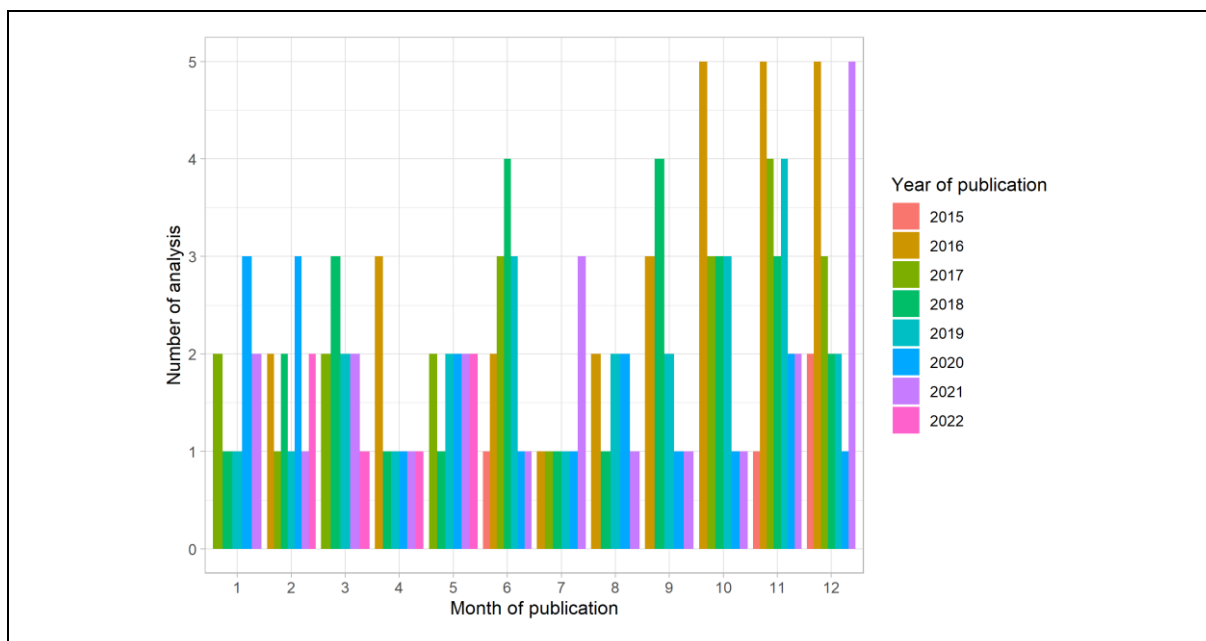
At the time of writing, we have published 149 analyses, and we do not waste the opportunity to present some quantitative descriptions.

Year of publication	2015*	2016	2017	2018	2019	2020	2021	2022**
Number of analyses	4	28	21	26	24	18	22	6

* First analysis released 2015-06-22, second analysis released 2015-11-25

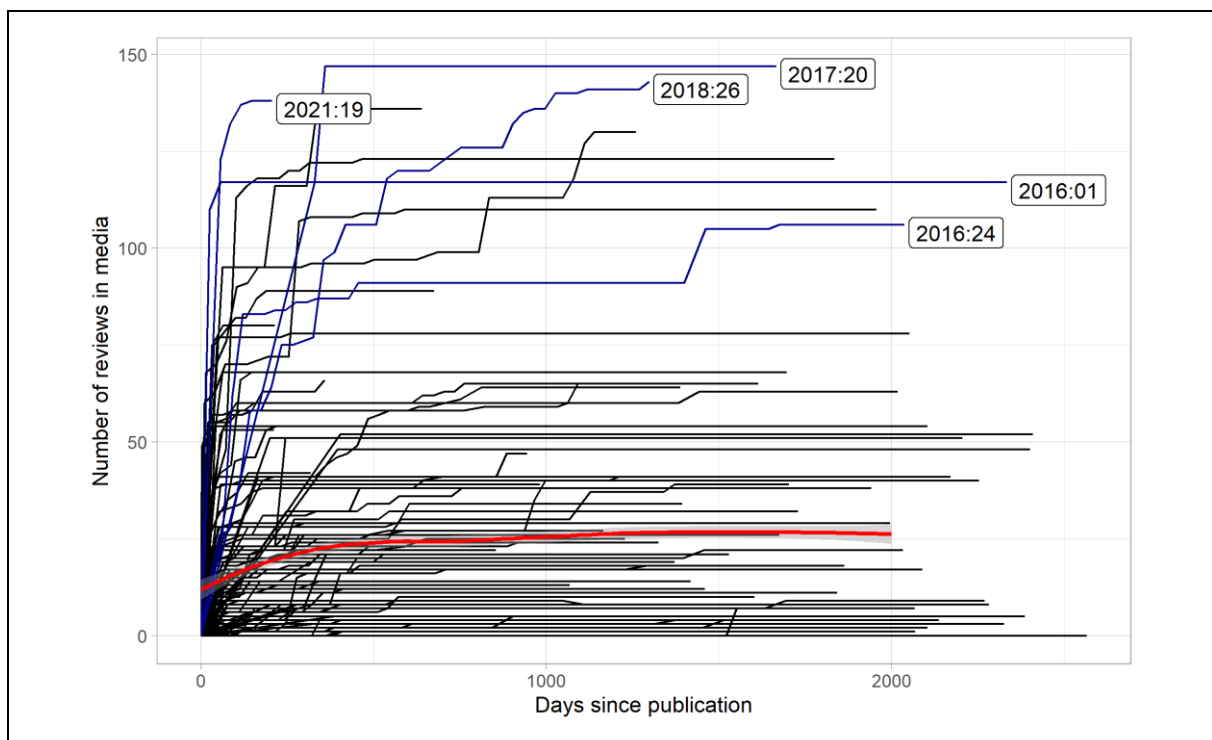
** As per 2022-06-21

We try to distribute the release of analyses evenly over the year, but there is a tendency to publish more during the last few months of the year, whereas July is typically a month of only a single analysis.



We do keep a few metrics on the analyses through general media monitoring and following activity on our website. Specifically, we have kept track of the number of media reviews and the number of times users have downloaded an analysis (the pdf file).

The figure below shows the number of reviews in the media for each of the 149 currently released analyses (black and highlighted blue lines). The red line is derived from the 149 individual trajectories by means of local regression (LOESS) and thus represents a smoothed version of the data. The individual curves as well as the smoothed representation shows that typically the reviews in the media appear quite soon after publication and that a typical number of reviews will be around 25 which will then be achieved within the first year, but often much faster.

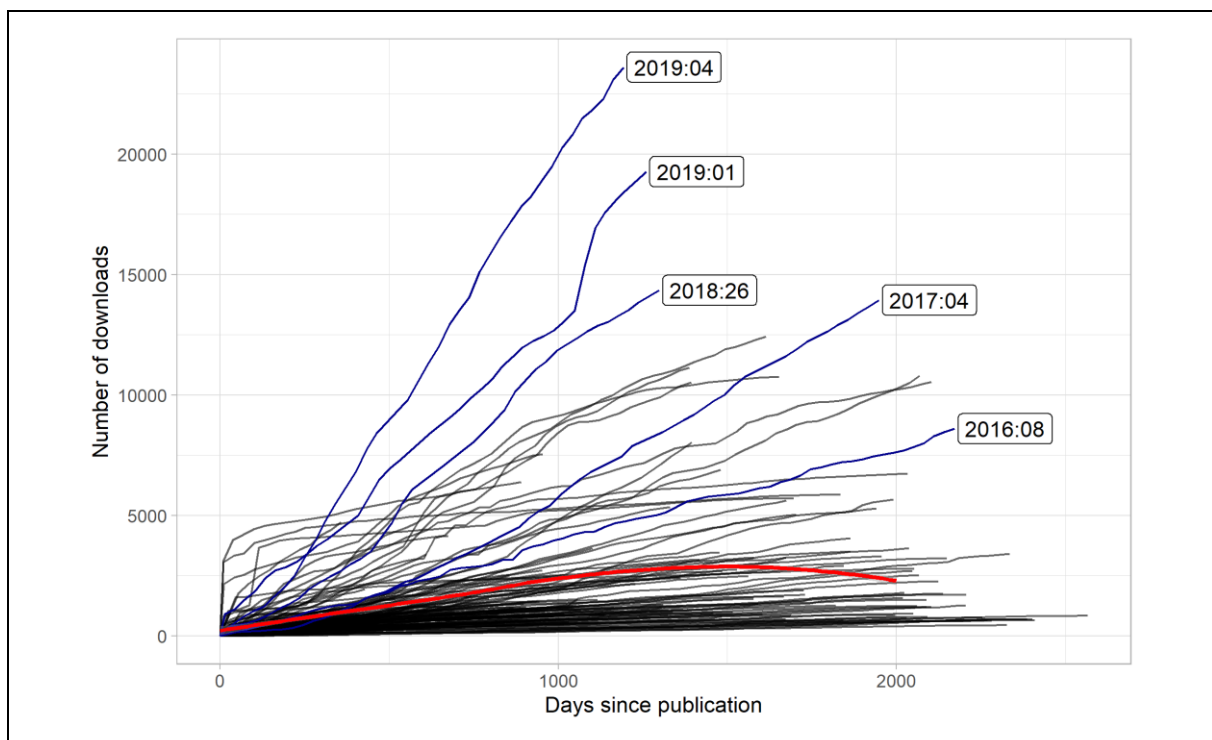


We have highlighted five individual analyses in the figure for various reasons:

- 2016:01 (Profile of the organic goods consumer, published 2016-02-08) got 120 reviews immediately after publication, but has not gotten any reviews since.
- 2016:24 (Parental purchase - who are the young people? - and the parents?, published 2016-12-01) got a fair number of reviews after publication, reached a plateau, and then after four years suddenly spurred some interest again.
- 2017:20 (Where do government employees live after the relocation?, published 2017-12-07) is the single analysis with the most reviews. Relocation of government employees is a very controversial topic in Denmark.

- 2018:26 (Holiday homes in Denmark, published 2018-12-11) has an atypical trajectory since it continues to receive reviews for several years after its publication.
- 2021:19 (COVID-19: Direct public expenditure of 80 billion. DKK up to 2021q2, published 2021-12-07) has received a very high number of reviews in a short space of time.

The following figure follows the same structure but shows number of downloads of the individual analysis since the date of publication. The majority of analyses are downloaded less than 2,500 times, but a few are downloaded substantially more. Unlike the number of reviews, the number of downloads more often follows a linear path – this is especially apparent for the more frequently downloaded analyses.



Five analyses are highlighted in the figure, but curiously only one analysis (2018:26) stands out in both figures:

- 2016:08 (Crime and education among young people, published 2016-07-20) is one very early analysis, but the rate of downloads seems surprisingly stable.

- 2017:04 (How much more expensive is it to live in Greenland than in Denmark?, published 2017-03-01) was considered a very niche topic, but nonetheless it is the fourth most downloaded analysis (out of 149) that we have produced.
- 2018:26 (Holiday homes in Denmark, published 2018-12-11) is the second most reviewed analysis which probably has an effect on the number of downloads.
- 2019:01 (Public health expenditure has increased significantly more than other public expenditure, published 2019-01-18) is the second most downloaded analysis, while 2019:04 (Immigrants and descendants in the Nordic countries, published 2019-03-26) is the most downloaded.

5. Future for DST Analyses

Statistics Denmark will continue to produce and publish DST Analyses since it has proven a stable success. It provides staff of DST with a further possibility to communicate to the broader public on the subject where they have a very deep understanding of both the data and the underlying phenomenon in society. The regular release of official statistics does not leave the staff involved with an opportunity neither to elaborate on especially subtle point nor to put their statistical findings into a wider perspective. The regular releases of official statistics follows a very strict form, and the text and figures accompanying the statistical tables are often very limited. DST Analyses is an ideal supplement, where it is also possible to combine different domains thus demonstrating the vast possibilities of the data pool held at Statistics Denmark.