

Bibliometric analyses of social science research institutes in Norway

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Executive summary

The report presents retrospective bibliometric analyses from 2007 to 2015 of 23 Norwegian social science institutes. The report presents background information hopefully useful for the international Panel and the Norwegian Research Council in their coming evaluation tasks.

No specific objectives or requirements have been set out for the bibliometric analyses. The report therefore takes a general perspective where similarities and differences in R&D activities and publication behavior have been the focus. The institutes are not benchmarked against each other in relation to publication performance. This makes no sense, as the group of institutes are too heterogeneous. Instead, we have tried to characterize their heterogeneity based on the information we can extract from their publication behaviors. A priori the institutes were classified in three analytical groups, i.e. “internationally oriented”, “regionally anchored” and “welfare and society”. As it happens this grouping seems to correspond very well with general patterns among the institutes in relation to R&D activities and publication behavior.

The main focus of the report is publication analyses where we utilize the Norwegian Publication Indicator (NPI). Using the NPI means that we are able to compare publication behavior across institutions irrespective of publication types. To further strengthen the publication analyses we also calculate relative publication or R&D activities using information on research full-time equivalents employed at the institutes in the examined period. So, more concretely the report presents three overall types of analyses:

- Publication analyses: Number of publications and points, publication behavior according to levels of publication channels in the NPI, and we calculate relative scores based on researcher full-time equivalents (FtE) to provide a comparable R&D activity measure.
- Collaboration patterns: Number of collaborative publications, number of internationally co-authored publications and mapping of collaborative partners.
- Visibility in the Web of Science citation database: Number of publications, coverage and impact for certain areas and aggregated units.

The main findings in the report can be summarized as follows. First, we examined the institutes’ research profiles by analyzing NPI and non-NPI activities. A main finding was a clear diversity among the institutes when it comes to non-NPI activities. Especially institutes grouped as “regionally anchored” have stronger focus on non-NPI activities compared to NPI, where NPI activities are seen as traditional scholarly publishing.

Second, we performed a number of different publication analyses that revealed considerable variations among both institutes and the three groups when it came to publication output and points. The different profiles revealed in the previous analysis were confirmed, as there were significant differences between the institutes as well as the groups. It was clear that the publication behavior of the institutes grouped as “internationally oriented” were clearly aligned with traditional scholarly publishing rewarded in the NPI. Not only was the ratio of points per FtE considerably higher than the other groups, their behavior towards publishing in level 2 channels (i.e. considered to be of higher status) was also very different from the other groups. Indeed, a stratification among the groups was revealed where R&D activities geared towards traditionally scholarly publishing was most visible among the group of “internationally oriented” institutes and least among the “regionally anchored” institutes. We interpret these findings as a proxy for the different work tasks, obligations and priorities among the institutes.

Third, we examined collaboration and internationalization patterns. Whereas we identify a strong growth in collaborative efforts, the results are more inconclusive when it comes to internationalization.

Fourth, we examined the visibility of the institutes in the international citation database Web of Science. Not surprisingly, we found that the “internationally oriented” group of institutes were very visible. We further examined citation impact of the groups and we found that the “internationally oriented” group had a high performance. Finally, we scrutinized in which fields the institutes were most prolific compared to the rest of Norwegian research in the same period and examined and compared their impact. A very interesting finding was that the institutes contribute with approximately a third of Norwegian publications in the database in the areas “political science” and “international relations”, and most notably their impact in both fields are outstanding not only compared to the rest of Norwegian research in these areas, but also to the database performance as a whole. We caution, impact means use, not quality.

Introduction

The purpose of this bibliometric analysis is to document the scholarly production of 23 social science research institutes in Norway in the period from 2007 to 2015¹. The analyses are provided to support the international Panel's evaluation work in the autumn of 2016.

In 2005, Norway implemented a performance-based funding model that annually redistributes funding among Norwegian research institutions. The funding-model is based on publication activity and a specific indicator has been constructed whereby publication activity is transformed into publication points. The institutions' annual sum of points is then exchanged for actual funding. We present the Norwegian Publication Indicator(NPI) in the data and methods section of the report. It suffices to state here that the publication points from the model are the main indicator used in this report. As all research institutions in Norway are expected to publish within the framework of the NPI, it is practical to document the publication performance of the 23 research institutes using this model. It also makes comparisons with other institute sectors possible.

While the NPI is supposed to reward certain types of publication behavior, it does not measure research quality. Research quality is a complex and multi-dimensional concept which is very difficult if not impossible to measure. Citation impact is often linked to quality issues and while impact in some sense can be used as a proxy for some vague notion of "quality", it is generally problematic to think of impact as a direct measure of "quality". The term impact was indeed constructed in order to signify the difference from "quality". Nevertheless, citation impact is an important performance measure as it examines the use of the research literature. Unfortunately, not all fields or domains are suitable for citation analyses. Such analyses are done in large citation databases that mainly contain international journal articles. In order to do valid citation analyses, the units analyzed should therefore have a publication behavior that favors international journal publication activity. This is mostly the case in the natural and medical sciences, but not for most social science fields. In the present report we do examine the international visibility of the research institutes in the citation database Web of Science especially because some of them has a specific international focus. But since the general coverage for institutes as a whole is weak, we only report a few aggregate citation statistics.

The report presents three main analyses:

- Publication analyses: Number of publications and points, publication behavior according to levels of publication channels, and we calculate relative scores based on researcher full-time equivalents (FtE) to provide a comparable R&D activity measure.
- Collaboration patterns: Number of collaborative publications, number of internationally co-authored publications and mapping of collaborative partners.
- Visibility in the Web of Science citation database: Number of publications, coverage and impact for certain areas and aggregated units

In order to keep the main report fairly short and readable we only present the most important tables and figures. The main report is supported by extensive appendices containing supporting tables and figures, as well as detailed individual publication statistics for the 23 research institutes. In the main report, we refer to tables and figures in the appendix where necessary, but notice we do not comment on these in the appendix except for caption notions.

¹ The present retrospective bibliometric analysis includes 23 institutes whereas the main evaluation only concerns 22 institutes. We examine the Northern Research Institute, Tromsø and the Northern Research Institute Alta individually as the institutes were only merged in 2015.

Data and methods

The analysis includes 23 social science institutes listed in Table 1 below. Some of the institutes include other departments or sections which have been excluded from the analysis based on consultations with NFR, Cristin and NIFU (i.e. sections at NORUT, IRIS, SINTEF, and UNI Research Rokkan has merged with UNI Research Helse late in 2015). It is indicated in the table which departments and sections are included or excluded.

Table 1. List of social science institutes included in the analysis.

Group codes	Institute numbers	Institutes	English (almost) names	Acronyms used
3	305	UNI Rokkansenteret (kun Stedkode 305.61.01.00)	Uni Ressearch (Rokkan)	UNI ROK
2	6002	Northern Research Institute Tromsø AS, Samfunn (6002.10.20.00)	Northern Research Institute Tromso	NORUT-SAMF
2	6229	Northern Research Institute Alta AS	Northern Research Institute Alta	NORUTAL
3	7401	SINTEF Teknologi og Samfunn (kun stedkode 7401.60.25.xx; ...50.xx; and ...55.xx)	SINTEF Technology and Society	SINTEF-TS
3	7403	NTNU Samfunnsforskning AS	NTNU Social Research	SAMFORSK
2	7407	Østfoldforskning AS	Ostfold Research Institute	OSTFOLD
2	7414	Agderforskning	Agder research	AF
1	7416	Chr. Michelsens Institutt	Chr. Michelsen Institute	CMI
3	7425	Forskningsstiftelsen Fafo	Fafo Research Foundation	FAFO
1	7430	Fridtjof Nansens institutt	Fridtjof Nansen Institute	FNI
1	7435	Institutt for fredsforskning	Peace Research Institute Oslo (PRIO)	PRIO
3	7437	Institutt for samfunnsforskning	Institute for Social Research	ISF
2	7443	Møreforskning	Moreforskning	MFV
2	7446	Nordlandforskning	Nordland Research Institute	NF
2	7448	Trøndelag Forskning og Utvikling	Trondelag R&D Institute	TFOU
3	7463	NIFU Nordisk institutt for studier av innovasjon, forskning og utdanning	NIFU Nordic Institute for Studies in Innovation, Research and Education	NIFU
1	7471	Norsk Utenrikspolitisk Institutt	Norwegian Institute of International Affairs	NUPI
3	7473	IRIS Samfunnsforskning (uten 7473.02.00.00)	International Research Institute of Stavanger	IRIS-SN
2	7480	Telemarkforskning	Telemark Educational Research	TF
2	7484	Vestlandforskning	Western Norway Research Institute	VF
2	7486	Østlandforskning AS	Eastern Norway Research Institute	OF

3	7495	Stiftelsen Frischsenteret for samfunnsøkonomisk forskning	Frisch Centre	FRISCH
3	7572	Samfunns- og næringslivsforskning AS	Samfunns- og næringslivsforskning AS	SNF

Each institute has been given a code from 1 to 3 corresponding to three analytical groups chosen by the Panel in collaboration with NFR. The codes and analytical groups are listed in Table 2 below.

Table 2. Analytical groups and group codes

Group code	Group
1	Internationally oriented
2	Regionally anchored
3	Welfare and society

Our analyses document publication activity and behavior at the institute level and where relevant also at the aggregate level of analytical groups. In the tables and figures at the disaggregate level of institutes we indicate to which groups the institutes have been designated.

Data sources

The analysis is based on four different data sources:

- official statistics available from the R&D statistics bank hosted by NIFU (www.foustatistikkbanken.no/nifu/);
- individual publication data from 2007 to 2010 provided by NIFU;
- individual publication data from 2011 to 2015 provided by Cristin (www.cristin.no);
- publication and citation data from Thompson Reuters' Web of Science (WoS) citation database, available through CFAs access to CWTS, Leiden University's enhanced version of WoS.

The official statistics, both aggregate and disaggregate publication numbers, publication points and number of FtE for the institutes, are available from 2007 to 2014. Aggregate publication numbers and points from 2015 are calculated based on the individual publication data provided by Cristin. In 2015 the fractionalization scheme in the NPI was altered. We therefore provide publication points for 2015 based on both formulas (old and new).

We have tried to replicate the official publication statistics from the two sets of individual publication data provided by NIFU (2007-10) and Cristin (2011-15). There are a few discrepancies, some of which probably is linked to uncertainties in the inclusion/exclusion criteria for UNI ROK, IRIS-SN, SINTEF-TS and NORUT-SAMF. Partly due to the discrepancies and thus the uncertainty in the inclusion/exclusion criteria and partly because FtE statistics were not available for 2015, we decided to use official statistics where possible. This means that most analyses document activities in the period from 2007 to 2014 with a few exceptions where 2015 numbers have been calculated from the individual data.

The individual publication data have mainly been used to examine collaboration patterns and visibility in the WoS citation database as the official statistics cannot be used for such purposes. Despite the few discrepancies, we are confident that the individual publication data are valid when it comes to revealing main collaboration and visibility patterns.

Notice the two individual publication data sets differ in their format and information. The Cristin data set from 2011-15 contains information on whether the publications are a result of international collaboration, the institutional affiliations for the collaborative partners, as well as unique document identifiers for publications indexed in WoS. The NIFU data set from 2007-10 does not include this information. We are therefore only able to examine international collaboration and collaborative partners for the period 2011-15. On the other hand, we have tried to identify and match individual journal publication data from the NIFU data set with the WoS citation database. This means that we are able to examine visibility for the whole period 2007-14 (i.e. we have excluded 2015 as the WoS database is currently not completely indexed for that year).

The Norwegian Publication Indicator

The analysis is limited to the publication categories included in the NPI, the indicator for the performance-based funding of the research institutes (and the higher education institutions), namely monographs and contributions to anthologies (book articles) published at publishing houses classified as scientific/scholarly by the Norwegian Association of Higher Education Institutions (UHR), and articles in series and journals classified as scientific/scholarly by UHR.

The following publication types are qualified: full-papers (regular articles, proceedings articles) and review articles published in journals or books (i.e. not short contributions like letters, editorials, corrections, book-reviews, meeting abstracts, etc.) and books/monographs. Publications which are outside these channels are not included in the performance analyses. This needs to be taken into consideration when interpreting the results. For example, the research institutes typically have a significant amount of publishing through reports and other forms of grey literature. We do, however, examine the institutes' general profiles based on all reported activities in the Cristin database from 2011-15. We are therefore able to examine potential differences in behavior between the institutes when it comes to activities captured and not captured by the NPI.

The indicator for publication activity includes two dimensions. First, articles in journals and series (ISSN-titles), articles in books and books/monographs (ISBN-titles) are given different weights. Moreover, publication outlets are divided into two levels ideally to avoid an incentive to productivity only. The outlets given extra weight are those defined to be the leading and most selective international journals, series and publishers (limited to about 20% of the publications). The national councils in each discipline or field of research participate annually in determining and revising the highest level under the guidance of the Norwegian Association of Higher Education Institutions. Table 3 below shows the relative weights given the different types of publications at the two levels.

Table 3. Norwegian Publication Model: Publication weights and publication type

	Outlets at normal level (level 1)	Outlets at high level (level 2)
Articles in ISSN-titles (journals and series)	1	3
Articles in ISBN-titles (books)	0.7	1
Books (ISBN-titles)	5	8

The formula only includes “scholarly publications”. The definition is that a scholarly publication must:

- present new insight;
- be presented in a form that allows the research findings to be verified and/or used in new research activity;
- be written in a language and have a distribution that makes the publication accessible to most interested researchers;
- appear in a publication channel (journal, series, book publisher) that has routines for external peer review.

Co-authored publications are shared, and fractionalised publication points are calculated based on the number of author addresses. Notice, in 2015 the formula for fractionalizing was changed, we document points from 2015 for both fractionalization schemes (old and new). Publications involving external collaboration (i.e. having co-authors from other institutions) are given extra weight and the publications points are multiplied by 1.25.

In the analyses, we use the weighted indicator “publication points” and where necessary the number of unique publications (i.e. full counts). Publication points are useful because they in a sense can be seen as publication equivalents. Hence we are in principle able to examine publication behavior irrespective of publication types. In order to better contextualize the publication behavior and activity of the institutes, the number of publication points is compared with the number of full-time equivalent (FtE) researchers employed. We interpret this ratio as a proxy measure of R&D activities on a scale from traditional scholarly publication addressed by the NPI to R&D activities not captured by NPI.

Citation-based methods

The visibility analyses presented in the report first tries to identify journal publications from the institutes in the WoS database. Subsequently, among the identified visible publications those eligible for citation analysis (research articles and reviews) are selected. Finally, for these eligible publications we calculate standard bibliometric indicators of coverage, output and impact developed by CWTS and used in their Leiden Ranking (www.leidenranking.com).

Citation analyses can serve many functions and have several purposes, only one of them is evaluation. As citation analyses are done in databases covering primarily English language journal publications such analyses are mostly appropriate in fields where international journal publication is a major publication activity. It is well known that this is not necessarily the case for many social science fields. So if citation analyses are applied to social science fields, utmost caution must be exercised in both application and interpretation.

We do apply two very restricted impact analyses in this report to document an interesting visibility and use of domain specific literature in the international research community. The analyses should not be seen as performance analyses benchmarking the institutes’ citation impact. In fact we do not show that, we keep the analyses at a broader level. However, to contextualize the impact scores, we also provide an index for coverage for the units analyzed (i.e. a unit is equal to a set of publications “belonging” to a specific unit of analysis). Coverage can be operationalized in several ways; we use an

approach developed by CWTS where the internal WoS coverage of a publication set is determined. The internal WoS coverage is defined as the proportion of the references in the set that points to journal publications also covered by WoS. The lower the internal WoS coverage, the more careful one should be in the interpretation of the indicators. Coverage is a proxy for the use of WoS indexed journal articles in the knowledge production of a unit. Lower coverage indicates that other publication types play major roles in the dissemination of knowledge whereby citation analyses becomes less relevant due to its restricted focus on WoS indexed journal publications.

Below we briefly present the indicators and the basic parameter settings we use. In general we follow the approach taken in the Leiden Ranking meaning that all indicators are field normalized so that individual field differences in publication and citing behavior is controlled for. We also control for publication year and type, we do remove all self-citations and we apply fractional counting at the institutional level when calculating the indicators. We have pooled publications from 2007-14 in order to get robust data sets and we apply a variable citation window so that citations are counted until 2014. Notice, as normalized indicators are aggregates, the citation score for an article published in field x in 2008 are compared to average citation score for articles in field x in 2008 before being aggregated.

Citation impact of publications are measured by two complimentary citation indicators: Mean Normalized Citation Score (MNCS) and the Proportion of Publications among the top 10% of the most highly cited in the database (Top10%, known in the Leiden Ranking as PPTop10%)

The MNCS indicator is an average field normalized citation rate. When fractional counts of publications are used an index of 1 is the “database average” citation rate for the aggregated field(s). An important weakness of the MNCS indicator is its strong sensitivity to publications with a very large number of citations. Especially for smaller publication sets this can result in an overestimation of the actual impact of the publications assigned to the unit of analysis.

As the Top10% indicator is based on ranks and not averages, it is much less sensitive to publications with very large number of citations. We apply 10% as the threshold for the indicator, where 10% means all publications cited on or above the 90th percentile in the database. For each publication in a set, this indicator determines whether the publication, based on its number of normalized citations, belongs to the top 10% of all WoS publications in the same field (i.e., the same WoS subject category) and the same publication year and of the same document type. The Top10% indicator equals the proportion of the publications of a unit that belong to the top 10% highly cited publications. If a unit has an indicator of 10%, this means that the actual number of top 10% publications of the units equals the statistically expected number. An indicator of 15% means that the unit has 50% more publications than expected among the 10% most cited in the database. A disadvantage of the Top10% indicator is the artificial dichotomy it creates between publications that are respectively above and just below the percentile threshold. Therefore, we apply both MNCS and Top10% as they can be seen as complementary, though they usually also correlate strongly at aggregated levels.

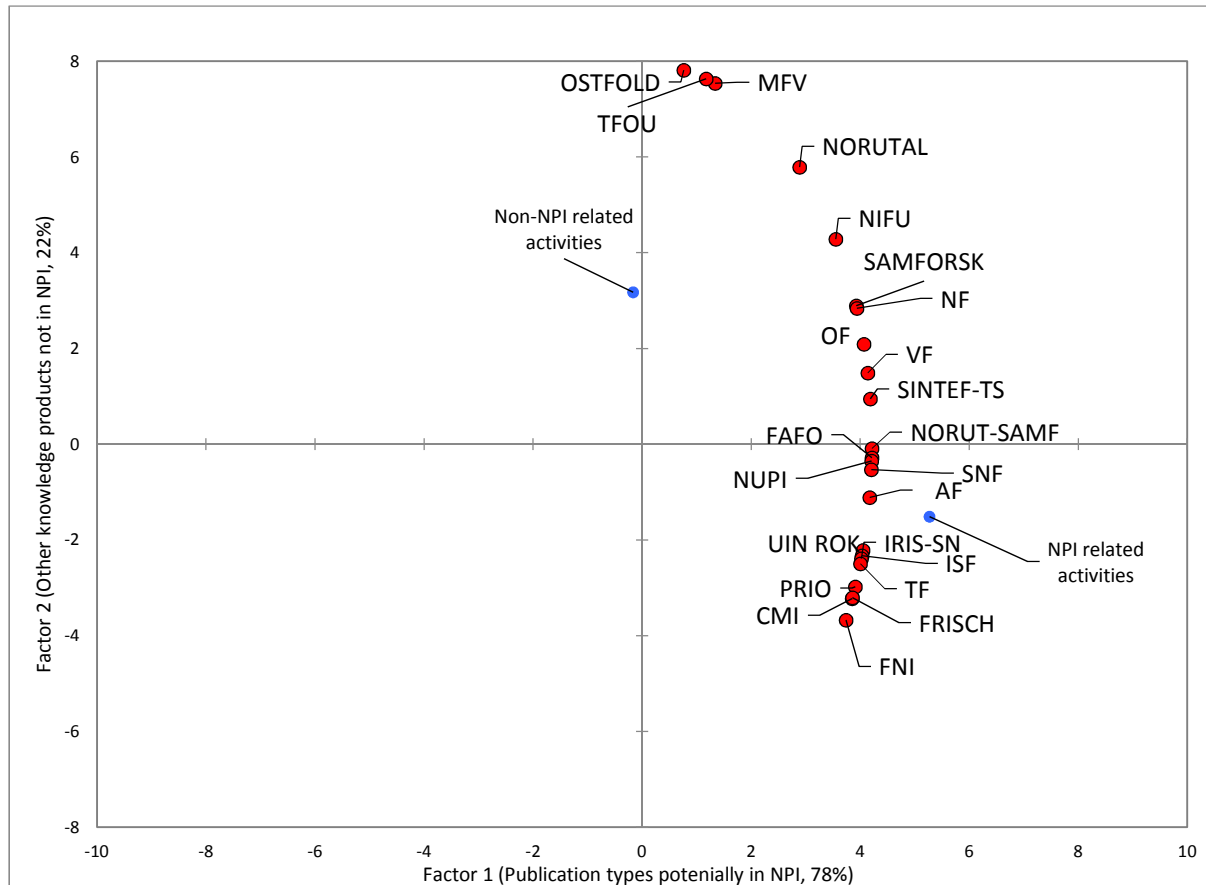
Bibliometric analyses of the institutes

This is the main part of the report and it contains four sections. First we contextualize the publication performance analyses, by providing some background information relating to potential differences in profiles and sizes between the institutes. Second we present the main publication analyses including publication behavior and activity. Third, we document collaboration and internationalization patterns, and finally, we examine the international visibility and impact in the WoS database.

Research profiles and size

Figure 1 below presents a principal components analysis of all reported activities in Cristin for the period 2011-15. All activities are included here, including publication activities rewarded in NPI as well as those not rewarded in the NPI.

Figure 1. Profiles of the social science research institutes based on all their reported research dissemination activities from 2011-15. The figure is a so-called distance bi-plot. The scales on the axes approximate Euclidean distances. Hence, the position of two institutes projected onto a factor (NPI or non-NPI related activities indicated with blue dots) can be used to determine their relative level for this factor. The scales themselves are not so important, what matters is the mutual relative positioning of the institutes between the two factors. Combined this provides an indication of their profiles.



Source: Individual dissemination data from 2011-15 provided by Cristin.

A non-technical interpretation of Figure 1 is that the institutes horizontal position to the right indicates their focus on research activities credited in the NPI, whereas as their corresponding vertical position indicates their focus on non-NPI related activities where upward positions indicates more focus than downward positions. Thus, institutes are positioned according to both activities and as an example,

FNI is positioned well to the right and at the bottom indicating a clear focus on NPI-related activities whereas non-NPI related activities play a relatively minor role.

A more technical interpretation would state that the figure has two dimensions which basically explain all the variance in the dataset. The horizontal x-axis represents publication activities included in NPI (scholarly books, book chapters, journal articles and conference papers), whereas the vertical y-axis represents activities outside the NPI, the most noteworthy are reports of various types. As expected, all institutes have positive loadings on the x-axis as they are supposed to publish within the framework of the performance-based funding model. Most institutes are located between 3 and 4 on the horizontal scale demonstrating that their research publication profiles are quite similar. Not surprisingly, all institutes have a relatively similar profile in relation to NPI publications. The main question is to what extent the profiles are also similar when it comes to other activities? It is clear that this is not the case. The institutes clearly have different weights when it comes to balancing activities between NPI and non-NPI. Positive scores on the y-axis indicate focus on other non-NPI activities and negative scores indicates less attention to such activities. The profiles for OSTFOLD, TFOU and MFV are especially interesting as they both weigh less on the x-axis, meaning that their NPI-activities are weaker compared to the other institutes. This becomes more evident when we examine the scatter of the activities outside the NPI on the y-axis. It is very clear that OSTFOLD, TFOU and MFV are different on this dimension. But it is also noticeable that 10 institutes have positive loadings on the y-axis meaning that they do have considerable activities outside the NPI such as publishing reports of various kinds. Likewise, institutes with lower or negative scores on the y-axis pay relative less attention to such activities compared to their NPI-focus. So, while they may well produce reports, the intensity is considerably smaller than that of publishing scholarly publications eligible for the NPI.

The main findings from the principal components analysis are:

- When it comes to NPI-research activities the group of institutes are homogenous (except for OSTFOLD, TFOU and MFV).
- There are clear differences between the institutes when it comes to other reported activities. Some institutes have negative loadings on the vertical y-axis meaning that their NPI-related research activities outweigh other activities considerably.
- All four institutes designated as “internationally oriented” (CMI, FNI, NUPI and PRIO) have negative loadings on this y-axis. On the other hand, 10 institutes from the groups “regionally anchored” and “welfare and society” have a profile where other activities play a major role, relatively speaking.

These findings should be remembered when interpreting the publication performance measures, i.e. the institutes do have different profiles most likely relating to different tasks and obligations.

To complement the profile analysis, Table 4 shows annual numbers of research personnel in full-time-equivalents (FtE) for the 23 institutes. The final column to the right provides an average for the eligible years and gives a crude indication of the average size of the institutes.

Table 4. Annual number of research personnel (FtE), the table is sorted according to analytical groups. Totals for other research institute sectors are provided for comparisons.

Grp.	Institutes	2007	2008	2009	2010	2011	2012	2013	2014	Avg. no. FtE
3	SAMFORSK	67	78.3	102	105.7	98.2	86.5	70.7	47.7	82
3	FAFO	72.5	72.7	78.4	81.6	79.5	76.2	80	67.2	76

3	NIFU	58	61	61	58.4	56.9	55.7	57.5	54.8	57.9
1	PRIO	46.7	50	49.9	56	52.6	49.7	49.1	53.6	50.9
1	CMI	36.2	45.4	42	38.6	42.7	45.9	46	45	42.7
1	NUPI	35.3	41.8	43.9	40.2	41.8	43.1	44	45	41.9
3	SINTEF-TS	16.1	20.5	57	48	47.9	41.5	41.1	51.9	40.5
3	UNI ROK	n/a	35.9	38.5	40.5	42.5	39.7	37.4	34.6	38.4
3	ISF	36	34.5	38	36.5	35	37.5	44	38	37.4
3	SNF	30.7	35.7	42.4	38.5	43.1	37	37.6	33.2	37.3
3	IRIS-SN	38.8	38.4	42.1	37.7	38.1	31.7	33.5	30.9	36.4
2	MFV	30.8	35.8	33.6	34.6	37.1	33.1	38.2	38.1	35.1
2	NF	30.5	28	34	29.7	28.2	32	31	32	30.6
1	FNI	22.9	25.4	25	25	25.6	25.4	23.9	24	24.6
2	AF	26	24.2	22.7	24.5	23.8	22	22	20.5	23.2
2	VF	17	21	23.1	24.2	22.2	20.8	20.6	20.2	21.14
2	TF	18.5	18.6	22	20.3	21.9	21.2	22	23.9	21.1
2	OF	20	22	22	20	22	18.5	19.1	18.6	20.2
3	FRISCH	n/a	20.4	16.5	20.6	21.4	20.8	19.5	21	20.
2	OSTFOLD	14.8	15.4	19	21	19	19.3	18.7	14.8	17.7
2	TFOU	14	15.3	13.9	16.8	17.8	20.1	18.8	17.9	16.8
2	NORUT-SAMF	18.1	18.6	14.7	12.8	12.6	12.4	13.4	11.2	14.2
2	NORUTAL	11.2	10.7	10.4	11	11.2	10.9	11.2	9.6	10.7
	Total	661.1	769.6	852.1	842.2	841.1	801	799.3	753.7	790
	Environmental institutes	539	599	674	683	691	677	679	652	649.5
	Primary institutes	559	781	765	797	832	804	814	774	766
	Technical industrial institutes	1764	1920	1908	1844	1841	1859	1817	1812	1846

Source: <http://www.foustatistikbanken.no/>

It is important to stress that the FtE is a proxy or crude measure for size and when we below in Table 11 use the FtE to normalize publication points it becomes a crude measure for R&D activities. Since we normalize publication points, lower ratios indicate less activity in relation to NPI and vice versa. This also means that the ratio of points per FtE is somewhat related to the principal components analysis presented above as we would expect institutes with higher scores on the y-axis to have lower ratios of points per FtE.

Most institutes have on average between 15 and 40 FtE in the period. On average SAMFORSK and FAFO are the largest units, whereas NORUT-SAMF and NORUTAL are the smallest units². As a sector, the 23 social science institutes are comparable in size and developments to “primary institutes” sectors but much smaller compared to the “technical industrial institutes” sector.

Table 5 shows the size and developments when the institutes are aggregated to the three analytical groups. The “welfare and society” group is by far the largest group when it comes to number of FtE

² Notice as mentioned above, NORUT-SAMF and NORUTAL were merged in 2015.

researchers, whereas the “internationally oriented” group is clearly the smallest of the three. Obviously, this is not surprising given the number of institutes in each group. It is noticeable though, that the institutes in the “regionally anchored” group are generally smaller compared to most of the institutes in the other two groups.

Table 5. Aggregate annual number of research personnel (FtE) where aggregation corresponds to the three analytical groups.

Groups		2007	2008	2009	2010	2011	2012	2013	2014	Avg. no. FtE
1	Internationally oriented	141.1	162.6	160.8	159.8	162.7	164.1	163	167.6	160.2
2	Regionally anchored	200.9	209.6	215.4	214.9	215.8	210.3	215	206.8	211.1
3	Welfare and society	319.1	397.4	475.9	467.5	462.6	426.6	421.3	379.3	418.7

Source: <http://www.foustatistikbanken.no/>

The size of the institutes obviously influences their absolute publication activity. In the following section we present the publication behavior and activities for the institutes, both volume and relative measures.

Publication analyses

First we examine the size of the institutes measured through absolute number of publication points in Table 6. Hereafter we cumulate publication points to two four year periods in Table 7 and 8 and examine the developments in Figure 2. Hereafter we examine the aggregated publication behavior such as points per publication, publication activity in level 2 channels and points distributed among level 1 and 2 channels. Finally, we present the indicator for R&D activities measured as points per FTE. All publication analyses are supported by tables and figures in Appendix 1.

Institutional publication points

First we present the compiled annual publication points for each institute in Table 6 below. The publication points are compiled on the basis of the official R&D statistics available through: <http://www.foustatistikbanken.no/>. Since some of the analyses in this report are based on individual publication data we needed to check to what extent we could replicate the official data with the individual data. We did experience some discrepancies and in such cases we have indicated the number of points based on the individual sets in parentheses. Notice, 2015 points are all based on individual data and we have calculated the number of points received both with the old and new fractionalization schemes.

Table 6 serves as a basis for the analyses presented further below. To complement Table 6, we have provided a number of tables and figures in Appendix 1 that show annual publication numbers (Table 1A, 2A), annual average publication points per publication (Table 3A).

What we can see from Table 6 is that there are significant variations in the number of publication points received by the individual institutes on a year-to-year basis.

Table 6. Annual number of publication points for the institutes. Numbers from 2007-14 are based on the official publication statistics. Numbers in parentheses indicate discrepancies from the official statistics when points are tried replicated using the two individual publication data sets. Points from 2015 are solely based on individual publication data. Two numbers are provided, one using the old fractionalisation scheme (for retrospective comparison) and one based on the new scheme.

Grp.	Institutes	2007	2008	2009	2010	2011	2012	2013	2014	2015* (old frac)	2015* (new frac)
3	UNI ROK	42.1	44.3	68.7 (69.1) ^b	30.8	48.0	26.8	64.4	32.4	53.9*	62.8*
	Helse ^c	n/a	n/a	n/a	n/a	107.2	84.0	106.2	82.7	87.3*	120.4*
2	NORUT-SAMF	4.8	4.7	22.8	18	8.9	7.3	9.9	1.1	6.8*	9.4**
2	NORUTAL	3.1 ^a	8.7	0.5	5.6	5.8 (0.58)*	1.3 (1.1)*	4 (0.7)*	4.8 (1)*	1.82*	0.35
3	SINTEFTS**	8.7	15.4	39.9	24	41.3	66.8	45.1	71.5 (45.5)	48.6*	59.9*
3	SAMFOR SK	10.8 (12.4) ^b	10.5	24.1	22	21.3	37.9	34.4	43.3	40.9*	54.2*
2	OSTFOLD	0.6	0	1	2.6	14.5	12.0	7.5	3.0	7.8*	7.6*
2	AF	4.1	2.1	12.4	11.1	12.1	21.5	26.4	12.9	8*	9.9*
1	CMI	26.4	21.4	60.7	37.7	62.3	43.1	59.4	54.7	39.6*	39.6*
3	FAFO	32.7 (40.8) ^b	60.1	56.4	43	47.5	72.6	52.8	53.4	49*	55.6*
1	FNI	34.3 (39.3) ^b	49.8	32.6	70.2 (71.2) ^b	24.8	41.4	71.4	69.9	53.9*	62.3*
1	PRIO	50.1 (53.5) ^b	112.4	102.3 (103.3) ^b	91.4	133.9	120.7	112.4	114.2	102.6*	137.4*

3	ISF	84.2	35.6	58.9	53.7	57.2	51.6	80.1	68.6	74*	80.1*
2	MFV	3.3	0.6	5.8	6.3	1.8	3.5	3.6	7.7	18.7*	21.2*
2	NF	9.7	10.4	14	23.3	13.0	12.5	24.6	13.2	12.5*	19*
2	TFOU	0	0	0.7	1.1	1.2	6.4	0	4.1	1.5*	1.5*
3	NIFU	46.5	44.1	45.4	67.4	50.2	30.7	43.4	47.7	49.6*	62.3*
1	NUPI	59.7	70.1	105.2 (104.6) ^b	109.1	105.3	115.5	90.0	88.9	121.3 *	138.7*
3	IRIS-SN	10.2	19.2	22.7	18.4	21.9	20.5	21.5 (18)*	44.9 (23.6)*	15.6*	18.7*
2	TF	16.5	8.9	7.8	9.5	17.3	9.4	8.0	9.2	15.4*	14.9*
2	VF	13.1	5.3	15	17.4	9.9	18.4	16.9	14.4	17.5*	27.3*
2	OF	11.1	5.8	21.3	8.7	11.1	23.0	8.5	15.8	5.3*	9.4*
3	FRISCH	n/a	22.5	12.1	13.6	18.6	35.4	31.8	27.6	22. *5	28.5*
3	SNF	34.8	5.8	10.3	18.1	9.0	7.8	10.8	6.1	9.3*	12.3*
	Total	506.8	557.7	740.6	703	736.9	786.1	826.9	809.4		
	Environmental institutes	256.7	318.6	407.8	425	426.9	493.3	461.1	417.4	n/a	n/a
	Primary institutes	373.1	336.4	368.1	385.7	446.3	463.6	438.1	402.1	n/a	n/a
	Technical industrial institutes	461.1	610.8	631.1	619.8	798.5	848	793.2	843.6	n/a	n/a

Source: <http://www.foustatistikkbanken.no/> and individual publication data from Cristin

*Based on individual publication data from Cristin

**SINTEF Teknologi og Samfunn constitutes the following departments: Helse (25), Sikkerhet (50) and Teknologiledelse (55)

^{a)} No individual publication data available from NIFU database (2007-10)

^{b)} Talled individual publication data from NIFU database (2007-10)

^{c)} We have included publication points from Uni Research Helse due to the recent merger although we have not used them in the retrospective analyses below.

In order to contextualize the analysis, we first examine the cumulated size of the institutes measured through publication points. We present results for two four-year periods in Tables 7 and 8 and examine developments in Figure 2.

As Table 7 confirms there are large differences among the institutes in the volume of publication points when cumulated in four year periods. In both periods, the largest institutes are PRIO and NUPI, together they receive some 28% of all points among the institutes.

Table 7. Size of social science research institutes measured through cumulated publication points for two 4-year periods. Relative size to the other institutes are also provided and the table is ranked according to institute size in the first period 2007-10, largest institute at the top.

Grp.	Institute	Total points 2007-10	Share of total points 2007-10	Total points 2011-14	Share of total points 2011-14
1	PRIO	356.2	14.2%	481.2	15.3%
1	NUPI	344.1	13.7%	399.7	12.7%
3	ISF	232.4	9.3%	257.5	8.2%
3	NIFU	203.4	8.1%	172	5.5%
3	FAFO	192.2	7.7%	226.3	7.2%
1	FNI	186.9	7.5%	207.5	6.6%

3	UNI ROK	185.9	7.4%	171.6	5.5%
1	CMI	146.2	5.8%	219.5	7.0%
3	SINTEF-TS	88	3.5%	201.8	6.4%
3	IRIS-SN	70.5	2.8%	108.8	3.5%
3	SNF	69	2.8%	33.7	1.1%
3	SAMFORSK	67.4	2.7%	136.9	4.4%
2	NF	57.4	2.3%	63.3	2.0%
2	VF	50.8	2.0%	59.6	1.9%
2	NORUT-SAMF	50.3	2.0%	27.2	0.9%
3	FRISCH	48.2	1.9%	113.4	3.6%
2	OF	46.9	1.9%	58.4	1.9%
2	TF	42.7	1.7%	43.5	1.4%
2	AF	29.7	1.2%	72.9	2.3%
2	NORUTAL	17.9	0.7%	15.9	0.5%
2	MFV	16	0.6%	16.6	0.5%
2	OSTFOLD	4.2	0.2%	37	1.2%
2	TFOU	1.8	0.1%	12.7	0.4%
Total		2508.1		3137	

Source: <http://www.foustatistikbanken.no/>

It is also clear that almost one-third of the institutes individually receive less than 2% of the total number of points among the 23 institutes, and four of them less than 1% of the points. It is also noticeable that these institutes all come from the “regionally anchored” group and not surprisingly, given the results of the principal components analysis, NORUTAL, MFV, OSTFOLD and TFOU are among those with fewest points.

In Table 8 below the publication points and their relative shares have been aggregated to the three analytical groups. It is clear that the “internationally oriented” and the “welfare and society” groups together receive 87% of the publication points (i.e. the same in both periods). Noticeably, while the “internationally oriented” group is considerably smaller, both in number of institutes and number of FTE researchers, compared to the “welfare and society” group, their relative shares of publication points are almost identical, also something we could expect given the principal components analysis.

Table 8. Size of the aggregate analytical measured through cumulated publication points for two 4-year periods. Relative size to the other groups are also provided.

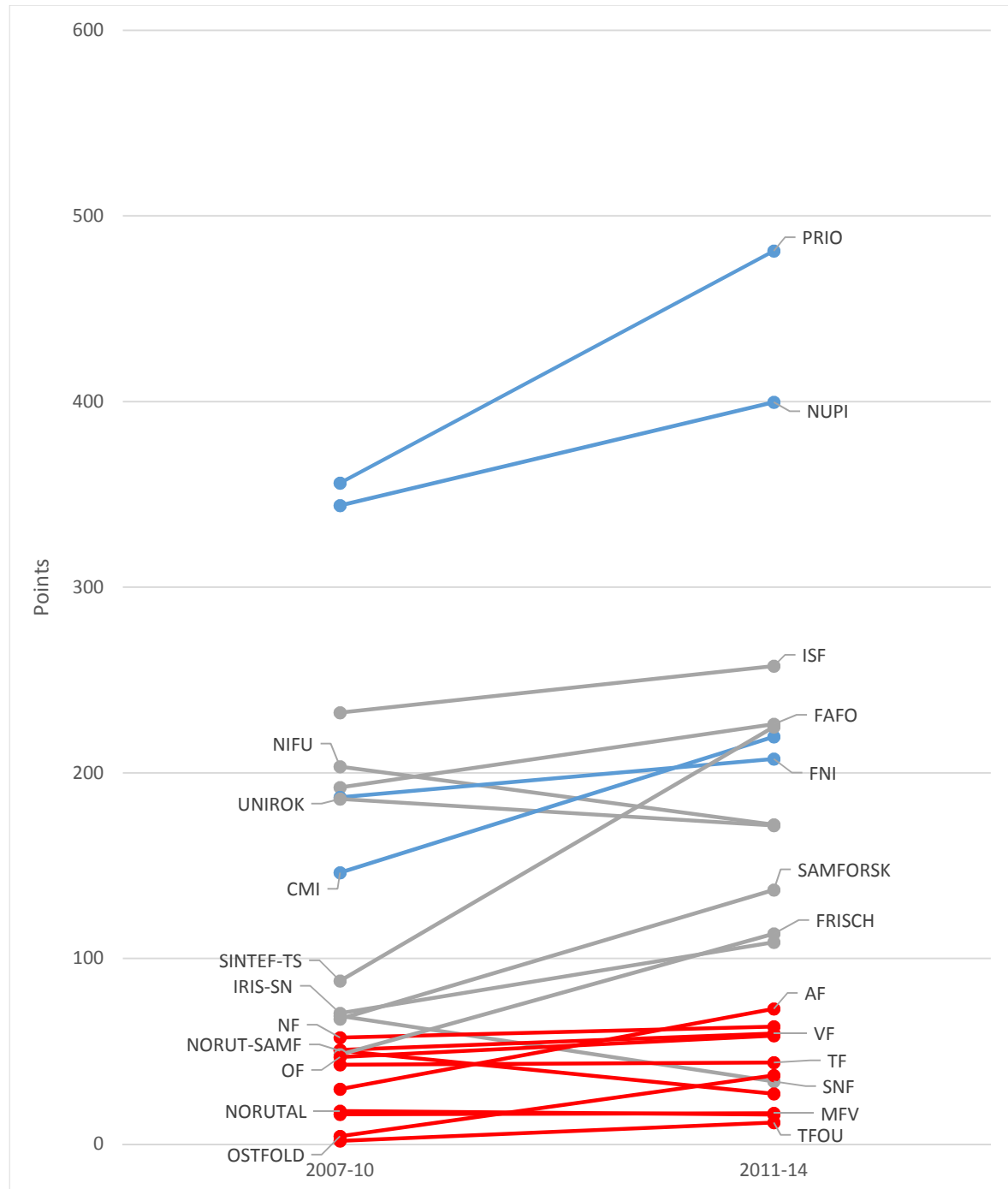
Groups	Total points 2007-10	Share of points 2007-10	Total points 2011-14	Share of points 2011-14
Internationally oriented	1033.4	41%	1307.9	42%
Regionally anchored	317.7	13%	407.1	13%
Welfare and society	1157	46%	1422	45%
Total	2508.1		3137	

Source: <http://www.foustatistikbanken.no/>

Figure 2 illustrates the development in publication points between the two periods. The institutes are color-coded according to group classification. There are some interesting developments. Most

institutes belonging to the “regionally anchored” group see little development, neither positive or negative, in the number of points they receive. This corresponds well with the stable (and relatively low) number of FtE researchers in these institutes during the period examined.

Figure 2. Illustration of the development in cumulated publication points between two periods 2007-10 and 2011-14. Institutes are color-coded to show their analytical group classification. Notice, for readability labels are divided between the left and right-hand side for readability purposes.



Source: <http://www.foustatistikbanken.no/>

On the other hand, the institutes from the “Internationally oriented” group all increase the number of points they receive, especially PRIO, NUPI and CMI have marked increases. If we compare the increases to the developments in number of FtE researchers, we see that the number of FtE at PRIO

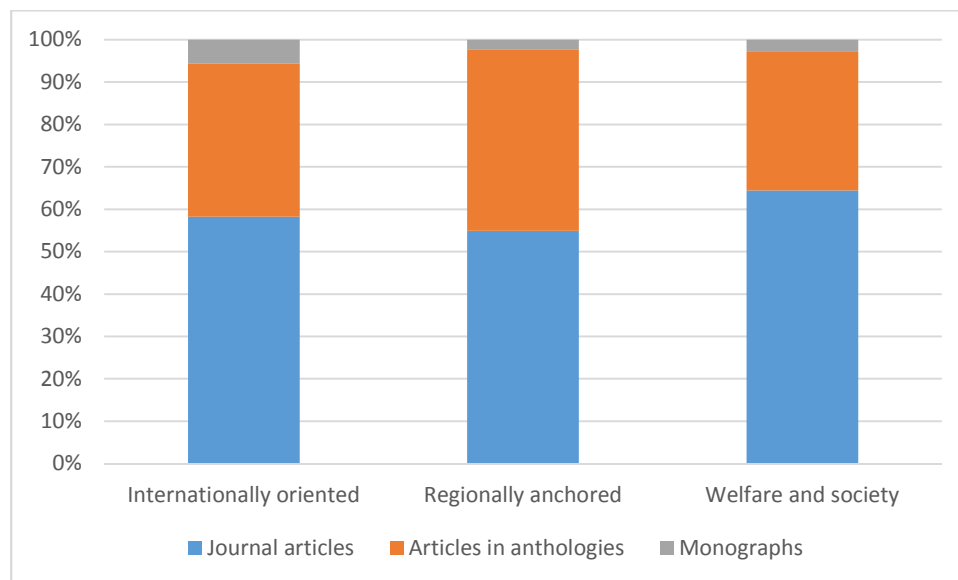
is stable over the periods, whereas CMI and NUPI experience increases. Likewise, several institutes from the “welfare and society” group also experience a growth in the number of points received in the last period compared to the first, most notably SINTEF-TS. We need however to be cautious here because we have experienced a discrepancy between the number of points in the official statistic and the number we can replicate with the individual data for 2014 (see Table 6 above). If we study the developments in FtE for SINTEF-TS it does seem that the institute has grown considerably but since the institute contains other sections than social science, there could be some noise in the data. Finally, some institutes also experience a drop from the first to the last period, for example SNF and NIFU. Both institutes have had some minor fluctuations in the number of FtE but taken together their size have been stable in the period despite the drop in received points.

Publication behavior

Table 1A in Appendix 1 gives the actual number of annual publications for each institute albeit all publication types are treated equally (Table 2A provides the same information for the aggregate groups). Table 3A in Appendix 1 provides average publication points per publication. For a breakdown of publication activity (and points) into publication types and levels for each institute we refer to Appendix 2.

Figures 2A and 3A in Appendix 1 provides NPI publication profiles for the individual institutes, 2A shows a relative profile according to publication activity distributed on publication types, whereas 3A does the same with publication points. Figures 3 and 4 below does the same at the aggregate level of groups.

Figure 3. Publication profiles for the three analytical groups. The profiles are the relative share of publication output among the three publication types eligible for points in the NPI. The figure should be compared with Figure 4 below where the share of points distributed on publication types are shown.



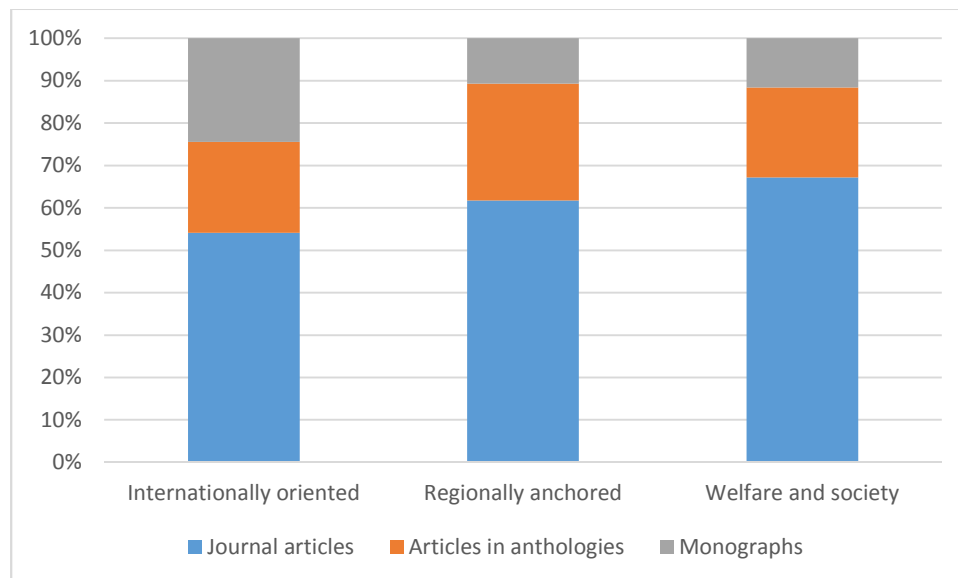
Source: <http://www.foustatistikbanken.no/>

The profiles seem very similar. We need to caution that they are relative to the total output of each group and the “welfare and society” group is the largest with 2901 publications of all types; the “internationally oriented” and “regionally anchored” groups have 2025 and 889 publications of all types respectively. It is interesting though that the “internationally oriented” group shows relatively more books in their profile. Otherwise, it is also noticeable, although not surprising, that the profiles show the social science characteristic where journal publication “only” constitutes a little more than

half of the publication behavior. We return to this issue in the section where we examine visibility in the Web of Science database.

Figure 4 complements Figure 3 by showing the relative distribution of points according to publication type. The most interesting finding here is that books accrue a larger share of the total number of points compared to their actual numbers shown in Figure 3, this is not surprising given their point allocation in the NPI. What is interesting though is that the relative increase seems to largely be at the expense of points to book chapters.

Figure 4. Publication profiles for the three groups. The profiles are the relative share of points distributed among the three publication types eligible for points in the NPI. The figure should be compared with Figure 4A where the share of publication output distributed on publication types are shown.



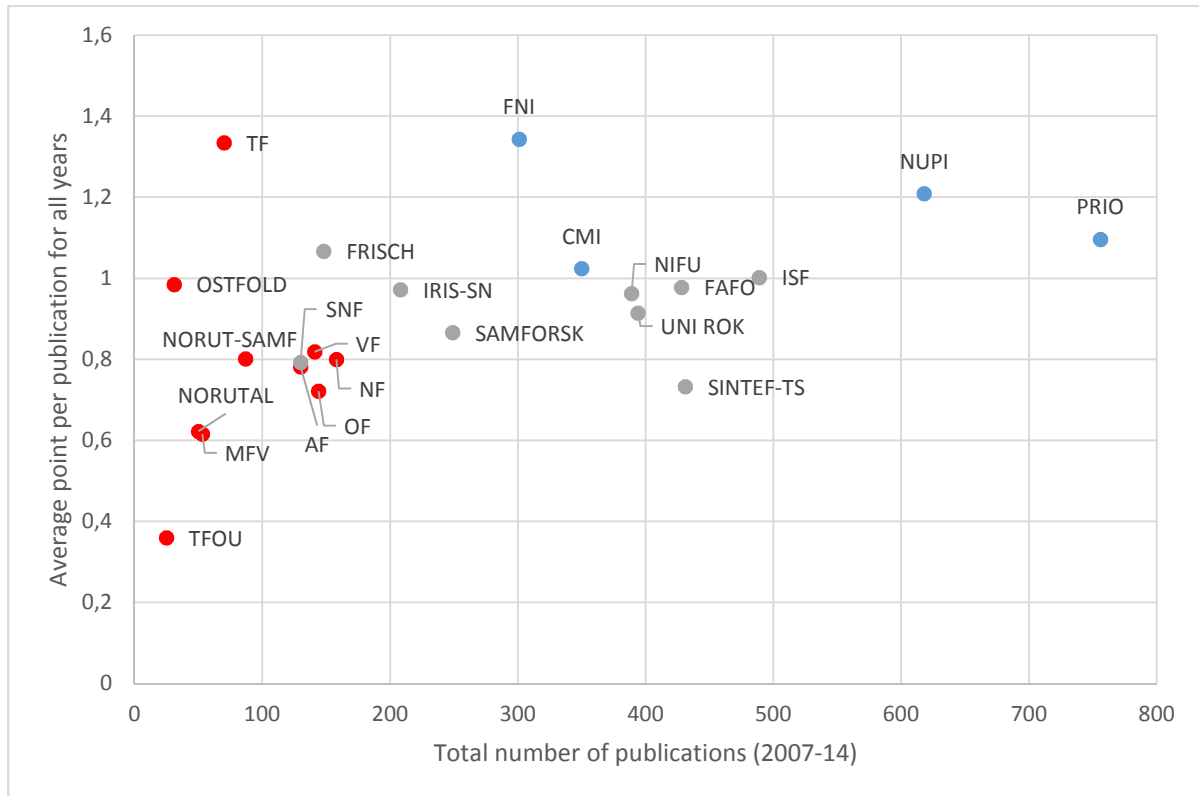
Source: <http://www.foustatistikbanken.no/>

In other words, journal publication volume and points seems to be on par (0.98), whereas an average point for a book chapter is 0.61 and books 4.46.

In the following we examine points per publication. From Table 3A we can see that as a group the average performance when it comes to publication points per publication for the social science institutes is considerably higher (0.99) than the three comparison groups constituting other institutional sectors. We also see that there is considerable variation among the 23 individual institutes.

Figure 5 summarizes these findings by plotting the average publication points for all active years with the size of the institutes which is their total output of publications from 2007 to 2014.

Figure 5. Average points per publication for the whole period as a function of total size measured as the total number of publications for the whole period. The institute’s group classification is captured by color-coding of the dots.



Source: <http://www.foustatistikbanken.no/>

The institutes are color-coded according to their group classification. Six institutes have an average performance above 1 point per publication. All four institutes classified as “internationally oriented” are among the six; and two of them are the largest institutes when it comes to volume, NUPI and PRIO. It is also very clear that the “regionally anchored” institutes are generally the smallest when it comes to publication volume and they also show the largest variation in average performance when measured as points per publication.

Tables 9 and 10 examine the developments in publication behavior according to publication level in the NPI. More specifically, the proportion of level 2 publications are shown, i.e. level 2 publications give more points at the outset before fractionalization is invoked.

Table 9 confirms that there are considerable variations between the institutes within the individual periods, but also unclear patterns in the developments except for the case of the “internationally oriented” institutes. Their level 2 publication behavior develops quite remarkably from an already high level in the period 2007-09 to an impressive level in 2013-15.

Table 9. Developments in the proportion of level 2 publications for individual research institutes for three cumulated periods: 2007-09, 2010-12 and 2013-15. Notice 2015 numbers are calculated based on individual publication data.

Grp.	Institutes	2007-09		2010-12		2013-15	
		Total no. pubs	Share of L2	Total no. pubs	Share of L2	Total no. pubs	Share of L2
1	CMI	103	36%	141	41%	146	53%
1	FNI	86	26%	97	41%	177	53%
1	NUPI	193	29%	261	28%	284	39%
1	PRIO	239	40%	319	48%	303	43%
2	AF	25	32%	49	29%	71	10%
2	MFV	12	8%	24	25%	48	4%
2	NF	36	14%	66	21%	81	37%
2	NORUTAL	18	6%	18	6%	15	7%
2	NORUT-SAMF	32	25%	40	15%	31	10%
2	OF	54	15%	57	18%	43	26%
2	OSTFOLD	2	0%	19	42%	13	54%
2	TF	24	21%	27	22%	36	11%
2	TFOU	2	0%	17	0%	8	0%
2	VF	34	18%	62	19%	77	22%
3	FAFO	156	15%	167	25%	160	28%
3	FRISCH	38	16%	67	21%	70	40%
3	IRIS-SN	47	30%	67	21%	120 ¹	25%
3	ISF	172	12%	182	17%	223	18%
3	NIFU	147	31%	139	22%	159	22%
3	SAMFORSK	52	25%	111	10%	143	27%
3	SINTEF-TS	84	14%	185	19%	281 ¹	11%
3	SNF	69	17%	38	26%	38	13%
3	UNI ROK	157	25%	126	24%	168	29%

Source: <http://www.foustatistikbanken.no/> and individual publication data from Cristin

¹⁾ numbers are adjusted based on individual data.

The findings are also visible from Table 10 which shows the compiled numbers from the three groups. The “regionally anchored” and “welfare and society” groups do improve their publication behavior from 2007-10 to 2013-15 with 1 to 2 percentage points. Yet, the “internationally oriented” group improves their publication behavior with 9 percentage points so that close to every second publication from this group in the NPI is published in a level 2 channel. Obviously, this is a major explanation for the relatively high average points per publication.

Table 10, Developments in the proportion of level 2 publications for the three aggregate analytical groups for three cumulated periods: 2007-09, 2010-12 and 2013-15. Notice 2015 numbers are calculated based on individual publication data.

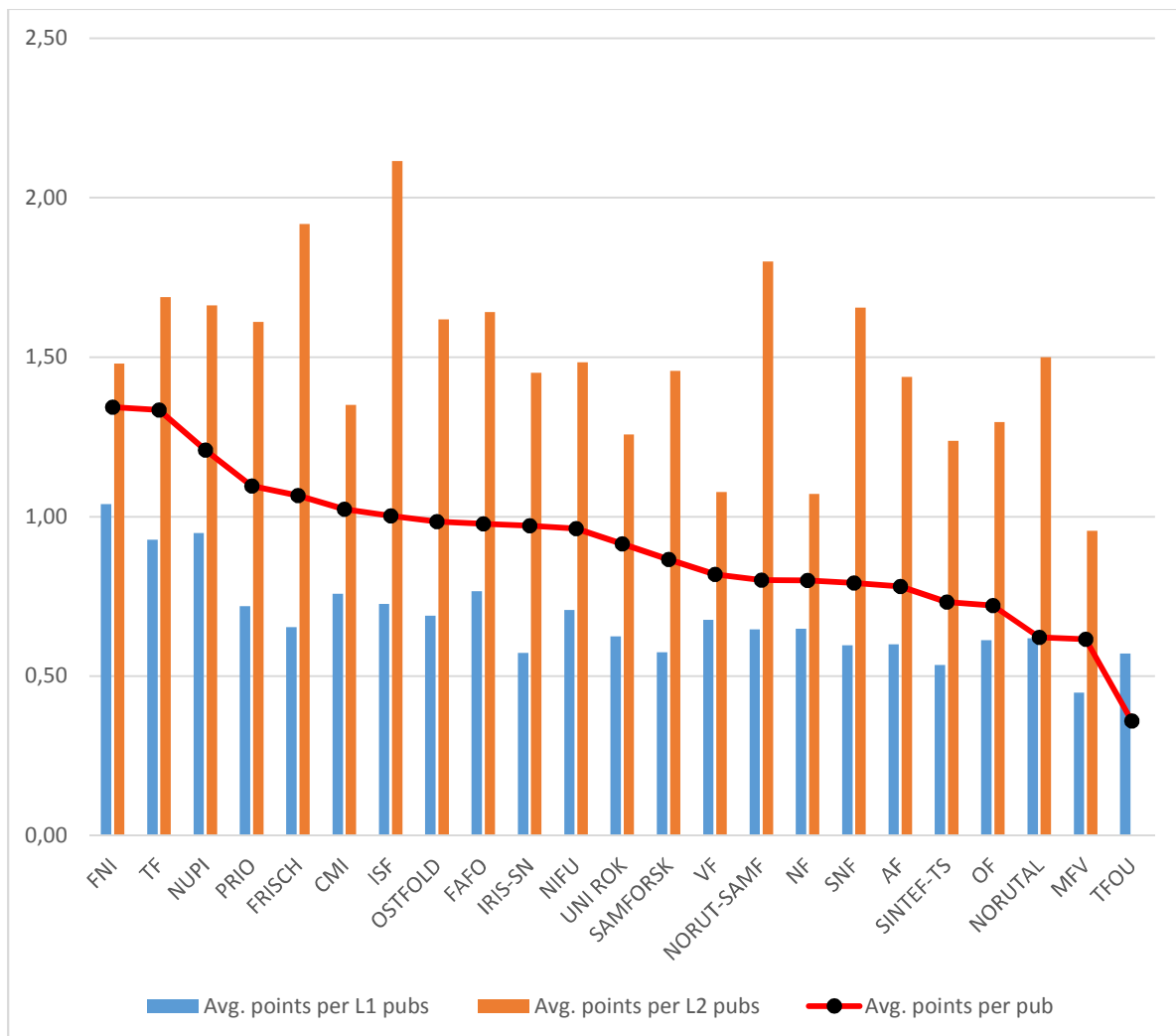
Groups	2007-09		2010-12		2013-15	
	Total no. pubs	Share of L2	Total no. pubs	Share of L2	Total no. pubs	Share of L2
Internationally oriented	621	34%	818	40%	910	45%
Regionally anchored	239	18%	379	20%	423	19%
Welfare and society	922	20%	1082	20%	1362 ¹	22%

Source: <http://www.foustatistikkbanken.no/> and individual publication data from Cristin

¹) numbers are adjusted based on individual data.

To illustrate the difference in points from level 1 to level 2, Figure 6 maps average publication points for each institute according to publication level, as well as the overall average point per publication for the whole period examined.

Figure 6. Average number of points per publication level (2007-14). Institutes are ordered from left to right according to overall average of points per publication for the whole period.



Source: <http://www.foustatistikkbanken.no/>

It seems that fluctuations are most significant among level 2 scores. As a relative performance measure points per publication is somewhat biased especially if the publication profiles of the institutes are not similar. A more reasonable but also crude measure is to divide publication points with the institutes FtE. In a sense such a measure can indicate differences among the institutes in terms of the degree to which their R&D activities actually result in NPI publications. As the principal components analysis indicated, we can expect some variation between the institutes. This is examined in the next section.

Publication points per FtE researchers

Tables 11 and 12 provide annual numbers of publication points per FtE researchers for the individual institutes and aggregated ratios for the three groups of institutes.

Table 11. Annual average publication points per FtE. For comparison aggregate average values for other research institute sectors are documented.

Grp.	Institutes									Avg. for all years
		2007	2008	2009	2010	2011	2012	2013	2014	
1	CMI	0.73	0.47	1.45	0.98	1.46	0.94	1.29	1.22	1.07
1	FNI	1.50	1.96	1.30	2.81	0.97	1.63	2.99	2.91	2.01
1	NUPI	1.69	1.68	2.40	2.71	2.52	2.68	2.05	1.98	2.21
1	PRIO	1.07	2.25	2.05	1.63	2.55	2.43	2.29	2.13	2.05
2	AF	0.16	0.09	0.55	0.45	0.51	0.98	1.20	0.63	0.57
2	MFV	0.11	0.02	0.17	0.18	0.05	0.11	0.09	0.20	0.12
2	NF	0.32	0.37	0.41	0.78	0.46	0.39	0.79	0.41	0.49
2	NORUTAL	0.28	0.81	0.05	0.51	0.52	0.12	0.36	0.50	0.39
2	NORUT-SAMF	0.27	0.25	1.55	1.41	0.71	0.59	0.74	0.10	0.70
2	OF	0.56	0.26	0.97	0.44	0.50	1.24	0.45	0.85	0.66
2	OSTFOLD	0.04	0.00	0.05	0.12	0.76	0.62	0.40	0.20	0.27
2	TF	0.89	0.48	0.35	0.47	0.79	0.44	0.36	0.38	0.52
2	TFOU	0.00	0.00	0.05	0.07	0.07	0.32	0.00	0.23	0.09
2	VF	0.77	0.25	0.65	0.72	0.45	0.88	0.82	0.71	0.66
3	FAFO	0.45	0.83	0.72	0.53	0.60	0.95	0.66	0.79	0.69
3	FRISCH	n/a	1.10	0.73	0.66	0.87	1.70	1.63	1.31	1.14
3	IRIS-SN	0.26	0.50	0.54	0.49	0.57	0.65	0.64	1.45	0.64
3	ISF	2.34	1.03	1.55	1.47	1.63	1.38	1.82	1.81	1.63
3	NIFU	0.80	0.72	0.74	1.15	0.88	0.55	0.75	0.87	0.81
3	SAMFORSK	0.16	0.13	0.24	0.21	0.22	0.44	0.49	0.91	0.35
3	SINTEF-TS	0.54	0.75	0.70	0.50	0.86	1.61	1.10	1.38	0.93
3	SNF	1.13	0.16	0.24	0.47	0.21	0.21	0.29	0.18	0.36
3	UNI ROK	n/a	1.23	1.78	0.76	1.13	0.68	1.72	0.94	1.18
	Total	0.77	0.72	0.87	0.83	0.88	0.98	1.03	1.07	0.89
	Environmental institutes	0.48	0.53	0.61	0.62	0.62	0.73	0.68	0.64	0.61
	Primary institutes	0.67	0.43	0.48	0.48	0.54	0.58	0.54	0.52	0.53
	Technical industrial institutes	0.26	0.32	0.33	0.34	0.43	0.46	0.44	0.47	0.38

Source: <http://www.foustatistikbanken.no/>

It is important to remember that this is a crude measure for R&D activity where we divide the publication points received in a particular year with the number of FtE researchers. Especially, publication years can be arbitrary as publishing dates fluctuates. This can lead to fluctuations and we have therefore also calculated a simple average for all years in order to have a reference point for the R&D activities.

As expected there are considerable variations over time for the individual institutes, as well as between the institutes. However, there are also clear patterns, especially when we examine institutes across the three groups. Likewise, the results are comparable to the findings in the principal components analysis (PCA) in Figure 1, or rather the PCA findings complement the findings in Tables 11 and 12. Table 12 below shows the aggregate ratios for the three groups.

The institutes in the “internationally oriented” group clearly have the highest performance according to points per FtE. FNI, PRIO and NUPI all have averages for the whole period above 2 points per FtE. No other institutes have such high ratios. The ratios for CMI is generally lower than FNI, PRIO and NUPI, albeit their average for the whole period is still above 1 point per FtE. Only three other institutes (FRISCH, ISF and UNI ROK) have ratios above 1, excluding the “internationally oriented” institutes. SINTEF-TS comes close with an average of 0.93 and their ratios have actually been above 1 in 2012, 2013 and 2014.

Obviously, ratios of 1 or 2 are not magic numbers, but we can with some confidence interpret them on a scale displaying focus in R&D activities going from higher to lower focus on traditional scholarly publishing and thus priorities in the division of labour and/or obligations within the institutes. The generally higher ratios for the “internationally oriented” group of institutes informs us that their researchers’ publication behaviour on average as a group is more focused on traditionally scholarly publishing as rewarded in the NPI. The same can be said for institutes such as FRISCH, ISF and UNI ROK. The point is that the scale is a good indication of the R&D activities in the institutes. If we compare the points to FtE with the principal components analysis in Figure 1 displaying the institutes’ profiles, we see that the results are complementary. The institutes that have low positive or negative scores on the y-axis (non-NPI rewarded activities), are the institutes with the highest points per FtE ratios indicating their focus on traditional scholarly publishing in contrast to other research or consultancy activities for example disseminated in reports not included in the NPI.

Another interesting finding is the comparison between the social science institutes as a sector with the three other sectors shown at the bottom of Table 11. On average, the social science institutes seem to have slightly more focus on traditional scholarly publishing activities especially compared with the environmental and primary institutes. However, the “internationally oriented” institutes somewhat distorts the general picture. If we remove them and then compare the points per FtE ratios and the average of the ratio for the remaining 19 social science institutes, the level is almost identical to the environmental institutes sector.

Table 12. Annual average publication points per FtE for the three aggregate analytical groups.

	2007	2008	2009	2010	2011	2012	2013	2014	Average for all years
Internationally oriented	1.21	1.56	1.87	1.93	2.01	1.95	2.04	1.96	1.82
Regionally anchored	0.33	0.22	0.47	0.48	0.44	0.55	0.51	0.42	0.43
Welfare and society	0.71	0.54	0.57	0.56	0.58	0.76	0.76	0.96	0.68

Source: <http://www.foustatistikbanken.no/>

Finally, if we compare the variations between the three analytical groups of social science institutes, it also becomes very clear that a certain stratification in R&D activities exist between them. As already

mentioned, the “internationally oriented” group has a significantly larger focus on scholarly publishing rewarded in the NPI, whereas the “welfare and society” group of institutes have a more balanced focus between NPI and non-NPI activities albeit more focus on scholarly publishing compared to the “regional anchored” group of institutes.

From these publication analyses, it seems that the publication behavior especially between the three groups reveal different work tasks, obligations and priorities. We caution to interpret these performance measures as an indication of efficiency or “quality” in publication behavior. However, it is also clear that especially the “internationally oriented” group of institutes publishes to considerable degree on level 2 in the NPI. Other things equal, this will give you more points but it is also a reflection on the international orientation in the publication profile. We will address both collaboration and internationalization patterns in the following section.

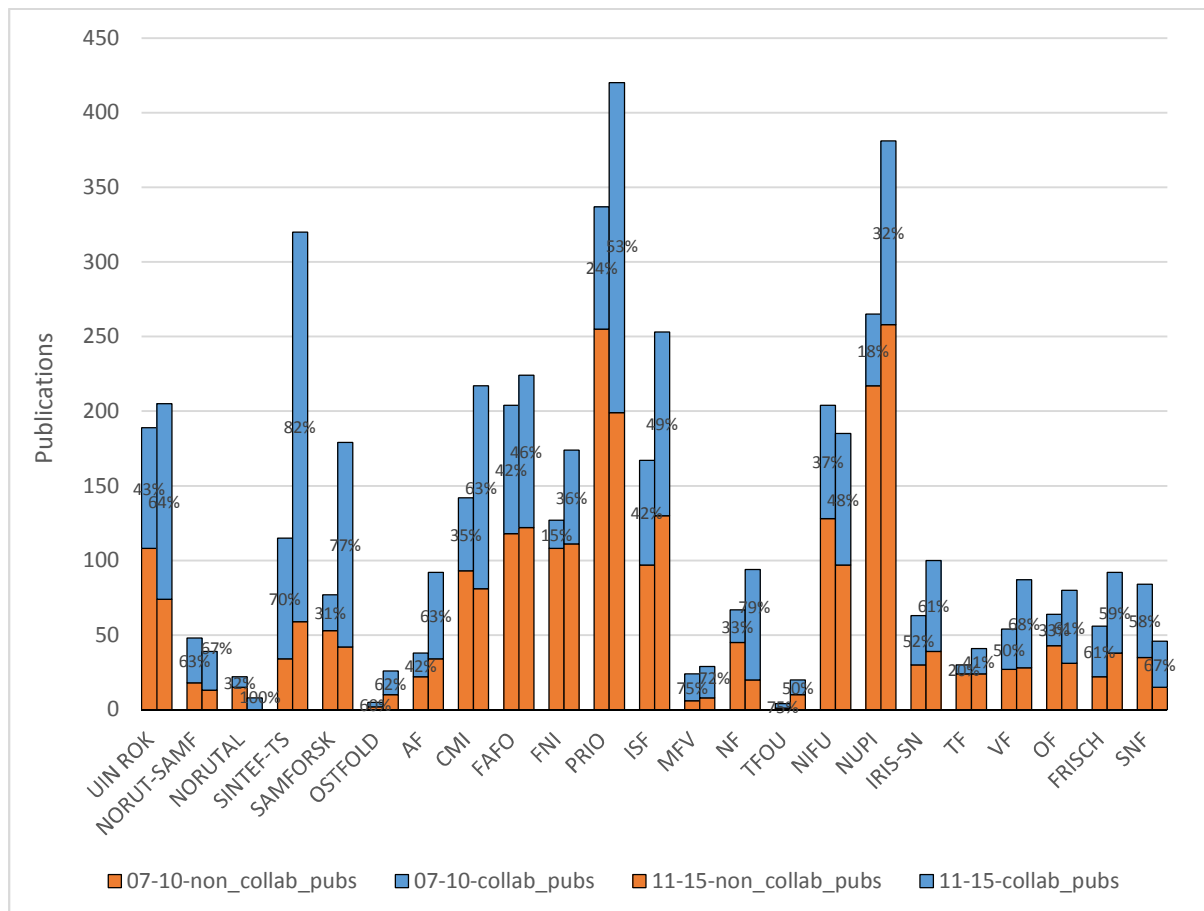
Collaboration patterns

Increasing collaboration in publications is an international phenomenon and is one of the most important changes in publication behavior amongst scholars of all fields during the last decades. In this section we analyze collaboration and internationalization patterns. Contrary to the previous publication analyses, the analyses of collaboration and internationalization are based on two individual publication data sets, one covering 2007-10 and one covering 2011-15. Unfortunately, the format of the two data sets is not identical which means that we can only examine degree of internationalization and map collaboration partners for the latter period 2011-15.

We have examined a number of different collaboration patterns but we only present some of them here in the main report, the remaining patterns are documented in Appendix 1 under collaboration patterns.

One important issue in relation to the NPI needs to be addressed. Collaboration with researchers from other institutions means fractionalization in publication points. Figure 4A in Appendix 1 provides a simple plot of points as a function of number of authors that illustrates the fractionalization issue. The NPI has introduced some incentives for collaboration so that collaborative publication points are multiplied by a factor of 1.25.

Figure 7. Developments in collaborative publication patterns from the first cumulated period in 2007-10 to the second cumulated period in 2011-15.



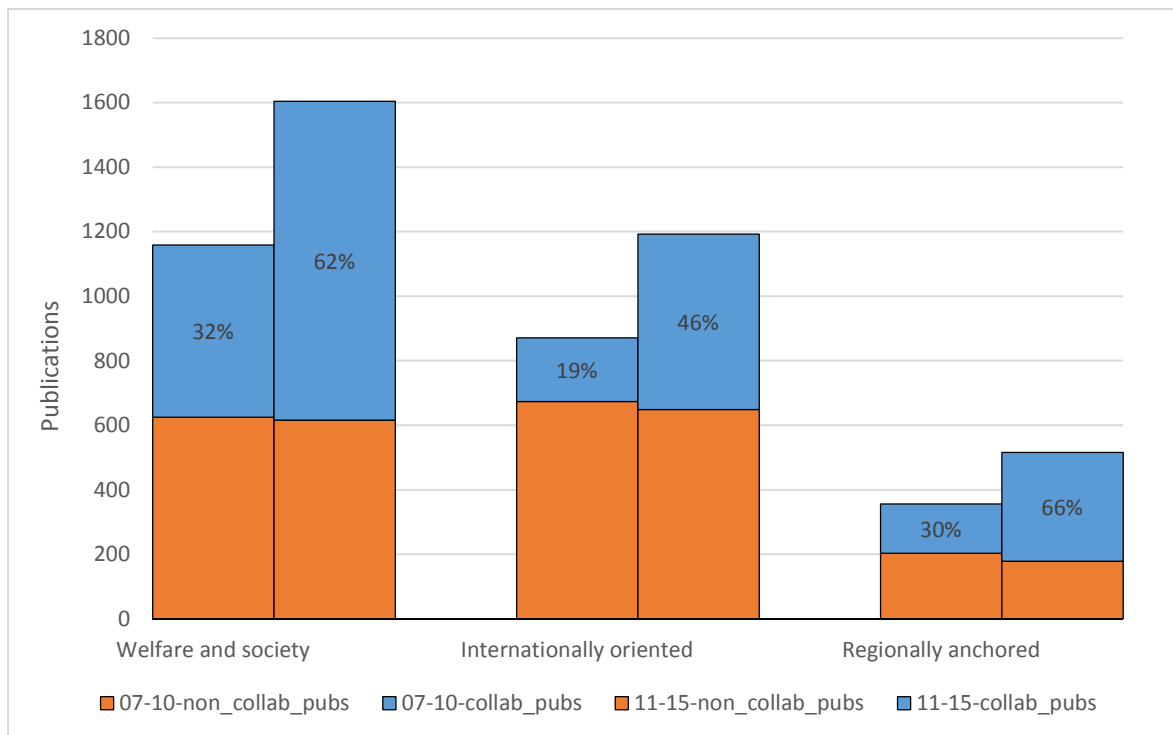
Source: Individual publication data from NIFU and Cristin

Figure 7 above shows the development from 2007-10 to 2011-15 in the proportion of collaborative publications for all 23 institutes. In Appendix 1, Figures 5A to 15A support the main findings by examining the individual institutes' proportion of collaborative publications as well as points in the two periods, and proportion of collaborative publication activities at level 2 in the NPI. The basic pattern visible from Figure 7 is that most of the institutes raise the publication output from the first period to the second period and almost all institutes raise their proportion of collaborative publications considerably from period 1 to 2. As stated above, this finding is not surprising as we have seen such developments for at least three decades in basically all scholarly fields.

There is of course again considerable variation among the institutes and for some institutes numbers are so low so that calculating percentages become somewhat arbitrary and not really informing. Nevertheless, the point is merely that at least 1 in 3 publications for basically all institutes in the latest period are a collaborative effort with at least one external institution. But for most institutes the ratio is more like 1 in every 2 publications which is a result of a collaborative research effort.

To be able to better interpret the collaborative publication patterns we have chosen to keep the analysis at the aggregate level of the groups in the main report and refer to Appendix 1 for corresponding analyses at the institute level.

Figure 8. Developments in the number of collaborative and non-collaborative publications for the three aggregate analytical groups from 2007-10 to 2011-15. Proportion of collaborative publications of the total cumulated output is shown as a percentage; the groups are ranked according to cumulated output for period.

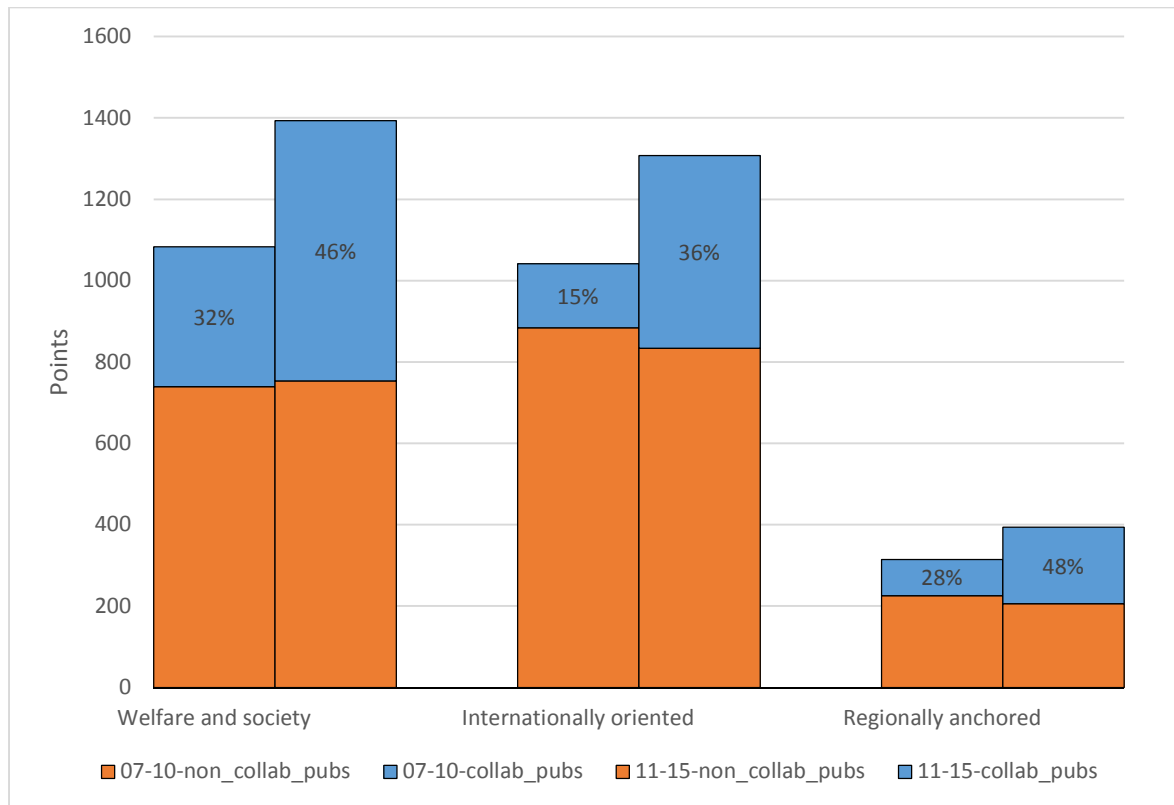


Source: Individual publication data from NIFU and Cristin

Figure 8 shows the development in collaborative publication patterns or behaviors. It is evident within the relative short time span of this analysis; collaborative publication activity doubles for all groups.

Figure 9. Developments in the number of collaborative and non-collaborative publication points for the three analytical groups cumulated from 2007-10 to 2011-15. Proportion of collaborative points of the total

cumulated output of points is shown as a percentage; the groups are ranked according to cumulated publication output for period.



Source: Individual publication data from NIFU and Cristin

Figure 9 shows the distribution of points between collaborative and non-collaborative publications. The effects of fractionalization are clearly shown as collaborative publications on average receive considerable lower points per publication. The numbers are quite stable between the two periods. In the first period the average point per collaborative publication is between 0.58 to 0.79, these numbers are 0.55 to 0.87 in the last period. Not surprisingly, the “internationally oriented” group of institutes on average gets more points per collaborative collaboration. This is no doubt a function of the high number of level 2 publications for this group. As a comparison, non-collaborative publications receive between 1.11 to 1.31 in the first period and 1.15 to 1.28 in the last period, and the “internationally oriented” group of institutes again due to their publication behavior succeed in accruing most points on average per publication.

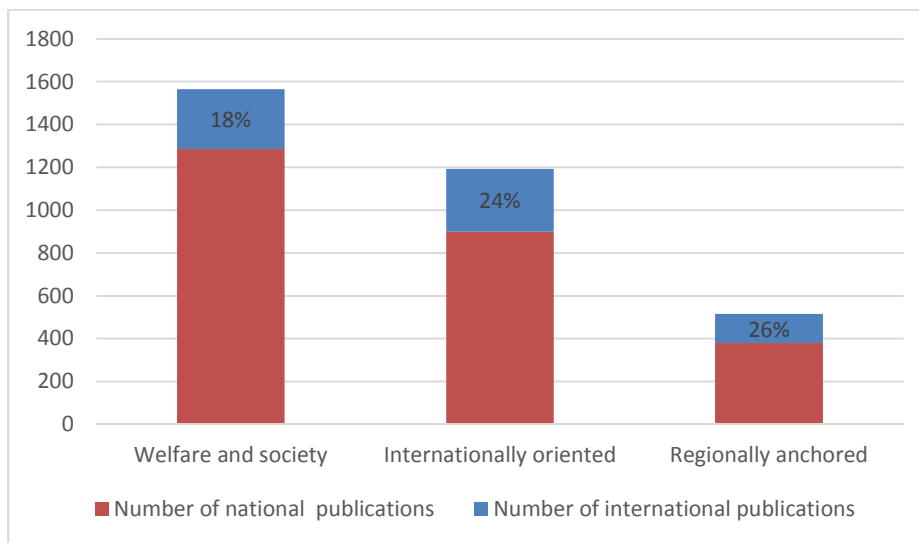
International publication behavior: 2011-14

The following two figures examine the degree of internationalization for the groups. Unfortunately, we are only able to perform the analysis for the latter period 2011-15 so there are no developments in the numbers. The analyses are simple; a publication is international if at least one collaborating author has a non-Norwegian affiliation. The results are simple proportions of publications and points. For similar analyses at the institute level we refer to Appendix 1, albeit there does not seem to be any discernable patterns when it comes to international collaboration at the institutional level. There are considerable variations not only in the right end of the figure where numbers are very low but also among the larger institutes.

Figure 10 below shows the proportion of international collaboration for the three groups. It is perhaps interesting that the “regionally anchored” group comes out with the highest proportion although we

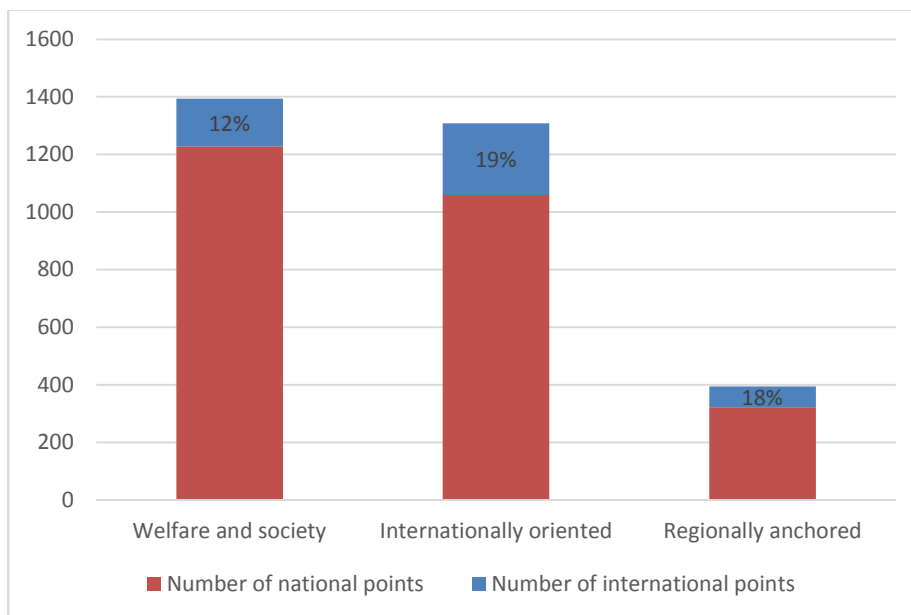
have to remember that the total output is considerably lower than the others. The question is how to interpret these numbers. Is 1 in 5 or 1 in 4 international publications what we would expect from the social sciences? We do not have individual data that makes it possible to isolate the “social sciences” in Norway and then examine the degree of internationalization. However, we have examined the degree of internationalization for Norwegian social science publications in the Web of Science database. We caution that the definition of social science is here the journal subject categories in the database and the estimate is based solely on journal publications in this database which we presume will result in an overestimation of internationalization compared to the Cristin data as the latter contains all publication types. Nevertheless, the degree of internationalization in Web of Science is at 55% considerably above the findings for the institutes.

Figure 10. Proportion of national and international publications for the three groups in the period 2011-14.



Source: Individual publication data from Cristin

Figure 11. Proportion of points from national and international publications for the three groups in the period 2011-14.



Source: Individual publication data from Cristin

Figure 11 is comparable to previous figures where publications and points are compared. Again we find that collaborative publications, this time international publications, provide relatively less points compared to their relative volume.

We end this examination on collaboration and internationalization patterns by providing a map, Figure 12 below, that shows a network of collaborative patterns for the 23 institutes based on individual data from 2011-15. We have color-coded three clusters of nodes: Green nodes are the social science institutes examined, red nodes are other Norwegian collaborative partners, and blue/purple nodes are international collaborative partners.

The network and map is constructed using vosviewer (www.vosviewer.com) and we have applied the generic algorithms in the software for the network analysis and layout. Vosviewer is a java-script that makes it possible to handle interactive maps. The presented fixed map in Figure 12 is a screen shot where only the most prolific institutions and collaborative links are visible.

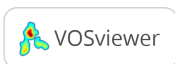
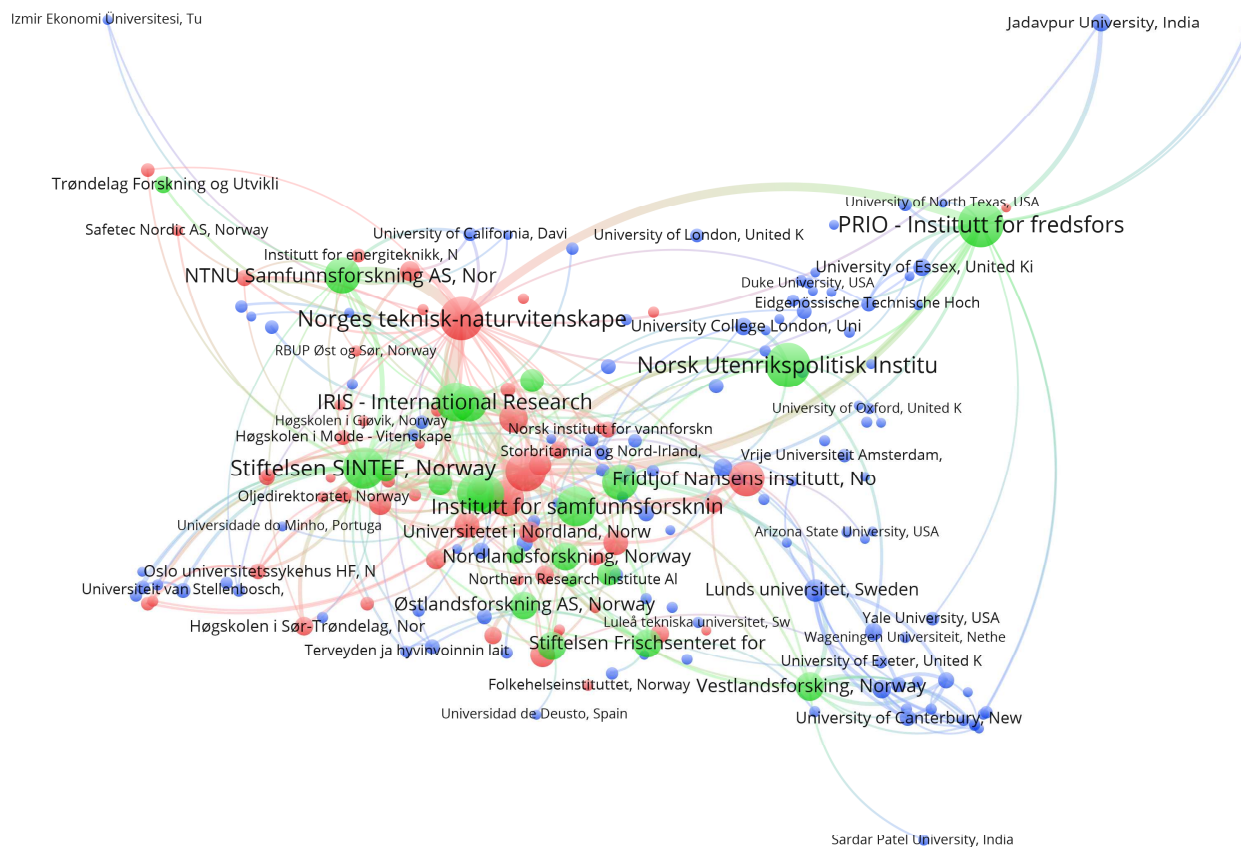
In order for the Panel to engage with the map we will distribute a map and a links file which can easily be read into vosviewer and hereafter interactive explorations can be made.

Vosviewer can be downloaded for free at the website mentioned above or it can simply be run online from the website. When the program is run all which is needed is guidance to the two files that creates the network. Instruction will be sent out to Panel members and you are encouraged to explore the map further.

For interpretation purposes, the size of the nodes indicates relative publication activity in the period whereas the size of the links indicates the intensity of the collaborations. We presume that some background knowledge is needed to interpret the map thoroughly but we can see some interesting patterns.

Two of the major “internationally oriented” institutes are located somewhat isolated in the right-hand side of the map together with a number of primarily international research institutions. The left-hand side of the map is clearly more nationally oriented as many of the institutes and most of the Norwegian collaborative partners are located here. A very strong national collaborative hub seems to be NTNU.

Figure 12. Map of collaboration patterns for the social science institutes. The colour green designates the institutes, whereas other Norwegian collaborative partners are red and international partners blue. Size of circles indicate publication activity and size of links collaborative activity.



Source: Individual publication data from Cristin

Visibility in the international citation database Web of Science

The final analyses examine the international visibility in the Web of Science citation database. We have already seen that the group of “internationally oriented” institutes and a couple of institutes from the “welfare and society” group have more focus upon scholarly publication behavior, strong representation on publication level 2 which often are international journal outlets, and are also internationally oriented in their collaborative efforts. We do expect that these previous findings to a certain extent also will be visible in this final analysis.

The purpose of the visibility analysis is not to measure impact or performance between the institutes. Such an effort gives no meaning in this context. We already know that many of the institutes would be poorly represented in such an analysis simply for the facts that they 1) have other priorities than international journal publishing, and 2) the coverage of social science in general is not very good in the citation databases. As already mentioned, publication behavior in the social sciences is much more heterogeneous compared to the natural, technical and medical science fields where the main publication platform is journals. There are differences among social science fields, where economics is perhaps the most journal-oriented field. Nevertheless, measuring visibility and impact in the citation databases is a restricted analysis due to its focus on mainly English language journals. These caveats need to be taken into consideration when interpreting the impact data presented below.

It is also important to stress that the number of articles from the institutes identified in the Web of Science no doubt underestimates the actual number to some extent due to failures in the matching procedures we have carried out. We are, however, fairly confident that the false negatives are few and the general picture presented should be representative.

What seemingly does give meaning is to try to examine to what extent the institutes as a group contributes to the volume and impact of Norway as a whole in the social science fields where the institutes are most prolific. This means that we will only examine the largest subject areas where the institutes are represented and we will not provide performance data for individual institutes.

First we examine the visibility of journal publications of all types in the Web of Science, and subsequently we select those publications that are eligible for citation analysis and examine their coverage and impact.

Table 13. Visibility of journal publications from 2007-14 in Web of Science according to publication types. Institutes are ranked according to total visibility.

Group	Institutes	Article	Article; Book Chapter	Article; Proceedings Paper	Biographical-Item	Book Review	Editorial Material	Letter	Meeting Abstract	Proceedings Paper	Review	Review; Book Chapter	Total
1	PRIO	175	3	13		43	5			1	2		242
1	NUPI	119		3		8	3				10		143
3	SINTEF-TS	99		11			2		4	3	4		123
1	CMI	82		4		3	3	1			2		95

3	NIFU	76		6		3	1				2		88
3	UNI ROK	77		2		2	2		1		2		86
3	FAFO	72	1	6	1	1	1						82
1	FNI	59		4			1				1	1	66
3	ISF	60			1	3	1						65
3	FRISCH	55	1			1	1	1					59
3	IRIS-SN	48		5					1		2		56
3	SNF	48		5		1	2						56
3	SAMFORSK	41		3					1	2			47
2	VF	26									3		29
2	NORUT-SAMF	22		1			2				2	1	28
2	OF	24		1					2		1		28
2	NF	23											23
2	MFV	18		1									19
2	OSTFOLD	12								1	4		17
2	AF	12									1		13
2	TF	6											6
2	NORUTAL	2									2		4
2	TFOU	4											4
	Total	1160	5	65	2	65	24	2	9	7	38	2	1379
	Unique	1130	5	63	2	65	24	2	9	7	37	2	1346

Source: Web of Science®, CWTS, Leiden University

Findings presented in Table 13 and 14 does confirm previous findings. PRIO by far has the largest visibility, followed by a number of institutes from both the “internationally oriented” and “welfare and society” groups.

Table 14. Visibility of journal publications from 2007-14 in Web of Science according to publication types. Groups are ranked according to total visibility.

	Article	Article; Book Chapter	Article; Proceedings Paper	Biographical-Item	Book Review	Editorial Material	Letter	Meeting Abstract	Proceedings Paper	Review	Review; Book Chapter	Total
Internationally oriented	435	3	24		54	12	1		1	15	1	546
Regionally anchored	149		3			2		2	1	13	1	171
Welfare and society	576	2	38	2	11	10	1	7	5	10		662
Total	1160	5	65	2	65	24	2	9	7	38	2	1379

Source: Web of Science®, CWTS, Leiden University

When we aggregate numbers to the groups, the “welfare and society” group come out first, but we have to remember that the “internationally oriented” group only comprises four institutes and they are ranked 1, 2, 4 and 8 according to total visibility in Table 13. It is also clear that the visibility of institutes in the “regionally anchored” group is the lowest of the three, which we of course also expected.

Table 15. Eligible publications for citation analysis and coverage at the institute level. Coverage is estimated by examining the proportion of journal references in the set of journal articles under investigation that are actually covered by the citation database. Since citation analyses are mainly done on journal articles this measure turns out to be a proxy for a unit’s reliance on journal publication and therefore a suitable proxy for coverage.

Groups	Institutes	Eligible pubs for citation analysis	fractionalized publications	Coverage
1	PRIO	193	121.9	40%
1	NUPI	132	109.2	21%
3	SINTEF-TS	114	47.9	48%
1	CMI	89	60.5	37%
3	NIFU	84	53.4	44%
3	UNI ROK	81	49.1	42%
3	FAFO	79	51.2	28%
1	FNI	65	54.4	20%
3	ISF	60	43.7	40%
3	FRISCH	57	31.7	67%
3	IRIS-SN	55	35.8	44%
3	SNF	53	32.5	55%
3	SAMFORSK	44	26.8	45%
2	VF	29	14.73	32%
2	OF	26	15.8	30%
2	NORUT-SAMF	26	15.3	37%
2	NF	23	13.7	52%
2	MFV	19	9.3	63%
2	OSTFOLD	16	10.0	39%
2	AF	13	8.8	24%
2	TF	6	4.8	33%
2	NORUTAL	4	1.5	74%
2	TFOU	4	1.2	52%
	Total	1272	814.1	37%

Source: Web of Science®, CWTS, Leiden University

Not all publication types in the Web of Science database are eligible for citation analyses. Further, coverage issues are important when judging the relevance of impact analyses. As mentioned above, CWTS has developed a useful tool that measures coverage in a publication set by examining the proportion of references in the set under investigation that are covered by the citation database. Since citation analyses are mainly done on journal articles this measure turns out to be a proxy for a unit’s reliance on journal publication. For example, life science and biomedical fields have coverages close to 100%, making citation analyses very suitable for such areas. This is clearly not the case when it comes to the social sciences, here coverages are much lower usually with economics as the field

with the highest coverage typically between 50-60%. Indeed, some suggest that with coverages below 50% citation analyses becomes irrelevant. In the present case we do think it can provide some, albeit restricted insights.

Another issue in relation to citation analyses is that we need a substantial set of publications before the indicators become robust. Some have suggested a rules-of-thumb of minimum 50 publications, but again such thresholds need to be seen in context to the purposes of the analyses. Nevertheless, only around 10 to 13 institutes would have sufficient number of publications for individual analyses and that number would probably be reduced further if we also took coverage into consideration. In that respect, the institute with the highest coverage is FRISCH with 69%. Not surprisingly, the FRISCH institute, named after the econometrician Ragnar Frisch, is an economics institute.

Table 16 shows the distribution of eligible publications for citation analyses aggregated to the group level, as well as the group level coverage.

Table 16. Eligible publications for citation analysis and coverage at the group level.

Groups	Eligible pubs for citation analysis	fractionalized publications	Coverage
Internationally oriented	479	346.1	30%
Regionally anchored	166	95.6	39%
Welfare and society	627	372.4	44%
Total	1272	814.1	37%

Source: *Web of Science*®, CWTS, Leiden University

While publication numbers are satisfactory, coverage does warn us that taken as a group the areas in which these institutes publish do to a large extent rely on publications not indexed in the citation database. In the social sciences such literature can be older literature including journal articles (published before 1980) and other publication types, most notably books, proceedings papers, and chapters in books (i.e. publication types covered by NPI). Nevertheless, Table 17 provides two well-known citation indicators for the three groups.

Table 17. Impact for the three groups. Mean Normalized Citation Score (MNCS) and proportion of the 10% most highly cited papers (Top10%).

	Publications (frac count)	MNCS	Top10%	Coverage
Internationally oriented	346.1	1.59	18.1%	30%
Regionally anchored	95.6	0.83	6.7%	39%
Welfare and society	372.4	1.01	9.4%	44%

Source: *Web of Science*®, CWTS, Leiden University

The results are actually very interesting for the “internationally oriented” group. Even though coverage is low, the impact of the 346.1 fractionalized publications from 2007-14 is very high! It means that these publications are used to a considerable degree by national and international peers. An MNCS of 1.59 means that the set of papers are cited 59% more than the average for the fields in

which they are published. A Top10% indicator of 18% means that 18% of the publications are among the 10% most cited in the database, 81% above the statistically expected! We remind the reader that the 10% most cited papers in the database usually accrue between 50-60% of all citations.

Table 18. Impact for the most prolific subject categories in which the institutes have published. We compare the institutes’ volume and impact to that of Norway as a whole, excluding the institutes contribution. Mean Normalized Citation Score (MNCS) and Proportion of the 10% most highly cited papers (Top10%).

WoS subject categories	Publications (full count)	Publications (frac count)	Institute share of Norwegian publications	Coverage	MNCS (institutes)	MNCS (Norway without institutes)	Top10% (institutes)	Top10% (Norway without institutes)
ECONOMICS	197	117.1	13.3%	50%	1.15	1.12	9.0%	9.7%
POLITICAL SCIENCE	195	131.8	28.1%	30%	2.16	1.06	24.7%	9.7%
INTERNATIONAL RELATIONS	164	114.5	34.7%	33%	2.21	1.11	26.3%	9.6%
ENVIRONMENTAL STUDIES	111	73.3	12.9%	34%	1.08	1.04	7.6%	9.6%
PLANNING & DEVELOPMENT	69	45.4	25.8%	38%	1.14	1.20	11.3%	10.1%
ENVIRONMENTAL SCIENCES	68	42.8	3.2%	39%	1.04	1.26	7.3%	11.0%
PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH	68	32.3	2.8%	55%	1.03	1.15	13.9%	10.3%
MANAGEMENT	58	35.4	8.4%	48%	0.93	0.93	9.4%	9.4%
GEOGRAPHY	54	32.0	11.5%	38%	1.52	1.01	13.0%	9.5%
HEALTH CARE SCIENCES & SERVICES	48	24.3	6.1%	63%	1.16	1.07	14.5%	8.5%
HEALTH POLICY & SERVICES	43	22.4	10.3%	60%	0.96	0.82	12.3%	8.2%
SOCIOLOGY	42	32.1	10.5%	35%	1.20	1.17	10.1%	9.8%
OPERATIONS RESEARCH & MANAGEMENT SCIENCE	41	26.8	7.9%	37%	1.25	1.07	13.4%	9.3%

Source: Web of Science®, CWTS, Leiden University

Finally, Table 18 reveals some very interesting findings especially when it comes to “political science” and “international relations”. The actual number of publications in these areas published by the institutes as a group are quite substantial, 28% and 35% of the total for Norway in these area in the period 2007-14. But most remarkably is the difference in impact. The social science institutes as a group publishing in these areas within this period has an outstanding performance compared to the rest of the Norwegian publication activity in these areas, but also compared to the database as a whole. MNCS scores above 2 is outstanding and so are Top10% indicator scores around 25%, i.e. every fourth article can be considered highly cited.

We need to stress that this only says something about the use of the international journal articles published in these fields. As the coverage indicates, knowledge claims in political science are

distributed by several other channels, yet as restrictive as it may be, it still does inform us that the journal articles from the institutes within these areas are extremely visible to an international audience, much more than other Norwegian publications in the same areas.

Summary of findings

The purpose of the bibliometric analyses of the 23 Norwegian social science institutes is to present background information hopefully useful for the international Panel and the Norwegian Research Council in their coming evaluation tasks.

No specific objectives or requirements have been set out for the bibliometric analyses. The report therefore takes a general perspective where similarities and differences in R&D activities and publication behavior have been the focus. The institutes are not benchmarked against each other in relation to publication performance. This makes no sense, as the group of institutes are too heterogeneous. Instead, we have tried to characterize their heterogeneity based on the information we can extract from their publication behaviors. A priori the institutes were classified in three analytical groups, i.e. “internationally oriented”, “regionally anchored” and “welfare and society”. As it happens this grouping seems to correspond very well with general patterns among the institutes in relation to R&D activities and publication behavior.

We have performed four supporting analyses. First, we examined the institutes’ research profiles by analyzing NPI and non-NPI activities. A main finding was a clear diversity among the institutes when it comes to non-NPI activities. Especially institutes grouped as “regionally anchored” have stronger focus on non-NPI activities compared to NPI.

Second, we performed a number of different publication analyses that revealed considerable variations among both institutes and the three groups when it came to publication output and points. The different profiles revealed in the previous analysis were confirmed, as there were significant differences between the institutes as well as the groups. It was clear that the publication behavior of the institutes grouped as “internationally oriented” were clearly aligned with traditional scholarly publishing rewarded in the NPI. Not only was the ratio of points per FtE considerably higher than the other groups, their behavior towards publishing in level 2 channels was also very different from the other groups. Indeed, a stratification among the groups was revealed where R&D activities geared towards traditionally scholarly publishing was most visible among the group of “internationally oriented” institutes and least among the “regionally anchored” institutes. We interpret these findings as a proxy for the different work tasks, obligations and priorities among the institutes.

Third, we examined collaboration and internationalization patterns. Whereas we identify a strong growth in collaborative efforts, the results are more inconclusive when it comes to internationalization.

Fourth, we examined the visibility of the institutes in the international citation database Web of Science. Not surprisingly, we found that the “internationally oriented” group of institutes were very visible. We further examined citation impact of the groups and we found that the “internationally oriented” group had a high performance. Finally, we scrutinized in which fields the institutes were most prolific compared to the rest of Norwegian research in the same period and examined and compared their impact. A very interesting finding was that the institutes contribute with approximately a third of Norwegian publications in the database in the areas “political science” and “international relations”, and most notably their impact in both fields are outstanding not only compared to the rest of Norwegian research in these areas, but also to the database performance as a whole. We caution, impact means use, not quality.

Appendix 1: Supplementary tables and figures

Publication behavior

Table 1A. Number of annual publication numbers for the individual institutes. Numbers from 2015 are calculated from individual publication data. For detailed breakdowns into publication types and publication levels for the individual institutes, see Appendix 2.

Grp	Institutes	2007	2008	2009	2010	2011	2012	2013	2014	2015*
2	AF	5	4	16	13	13	23	38	18	15*
1	CMI	33	24	46	40	52	49	57	49	40*
3	FAFO	43	47	66	48	58	61	52	53	55*
1	FNI	35	24	27	41	23	33	67	51	59*
3	FRISCH		21	17	18	21	28	24	19	27*
3	IRIS-SN	8	18	21	16	27	24	24 (18) ¹	70 (31) ¹	26* ²
3	ISF	69	34	69	64	57	61	74	61	88*
2	MFV	5	1	6	12	4	8	7	10	31*
2	NF	13	11	12	31	16	19	33	23	25*
3	NIFU	52	48	47	57	43	39	45	58	56*
2	NORUTAL	4	12	2	8	7	3	6	8	1*
2	NORUT-SAMF	7	7	18	16	13	11	13	2	16*
1	NUPI	56	54	83	73	92	96	76	88	120*
2	OF	16	10	28	10	18	29	12	21	10*
2	OSTFOLD	1		1	3	8	8	5	5	3*
1	PRIO	57	97	85	97	114	108	102	96	105*
3	SAMFORSK	17	8	27	25	30	56	36	50	57*
3	SINTEF-TS	14	19	51	31	65	89	89	73* ³	84*
3	SNF	46	8	15	15	14	9	12	11	15*
2	TF	8	5	11	6	9	12	8	11	17*
2	TFOU			2	2	3	12		6	2*
3	UNI ROK	43	50	64	32	64	30	76	35	57*
	UNI RES (Incl. Helse)	n/a	n/a	n/a	n/a	173	138	164	139	143*
2	VF	10	7	17	20	15	27	23	22	32*
	Total	542	509	731	678	766	835	879	840	941*
	Environmental institutes	413	488	581	625	648	758	747	696	413
	Primary institutes	522	487	523	578	674	749	657	638	522
	Technical industrial institutes	603	808	835	831	1153	1210	1124	1252	603

Source: <http://www.foustatistikbanken.no/> and individual publication data from Cristin

*2015 numbers are calculated based on individual publication data from Cristin

¹) We are not able to recreate official data from 2013 and 2014 for IRIS-SN, notice the numbers still does not add up when including IRIS-NT.

²) publication numbers for IRIS is most probably underestimated for 2015.

³) NIFU has confirmed that there is an error in the official statistic where the count for 2014 is 108.

Table 2A. Number of annual publication numbers for the three aggregate analytical groups. Numbers from 2015 are calculated from individual publication data.

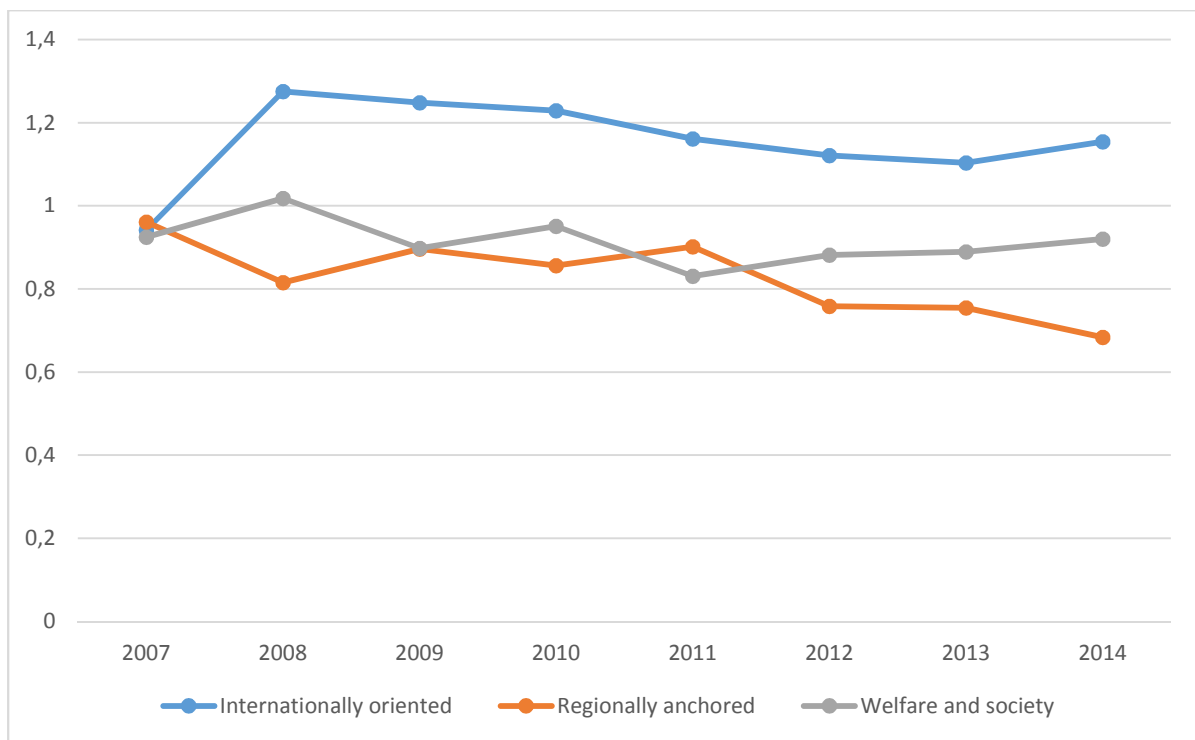
Groups	2007	2008	2009	2010	2011	2012	2013	2014	2015*
Internationally oriented	181	199	241	251	281	286	302	284	324*
Regionally anchored	69	57	113	121	106	152	145	126	152*
Welfare and society	292	253	377	306	379	397	432	430 ¹	465*

Source: <http://www.foustatistikbanken.no/> and individual publication data from Cristin

*2015 numbers are calculated based on individual publication data from Cristin.

¹) 2014 numbers are adjusted based on individual data

Figure 1A. Developments in the annual average publication points per publication for the three aggregate analytical groups research institutes.



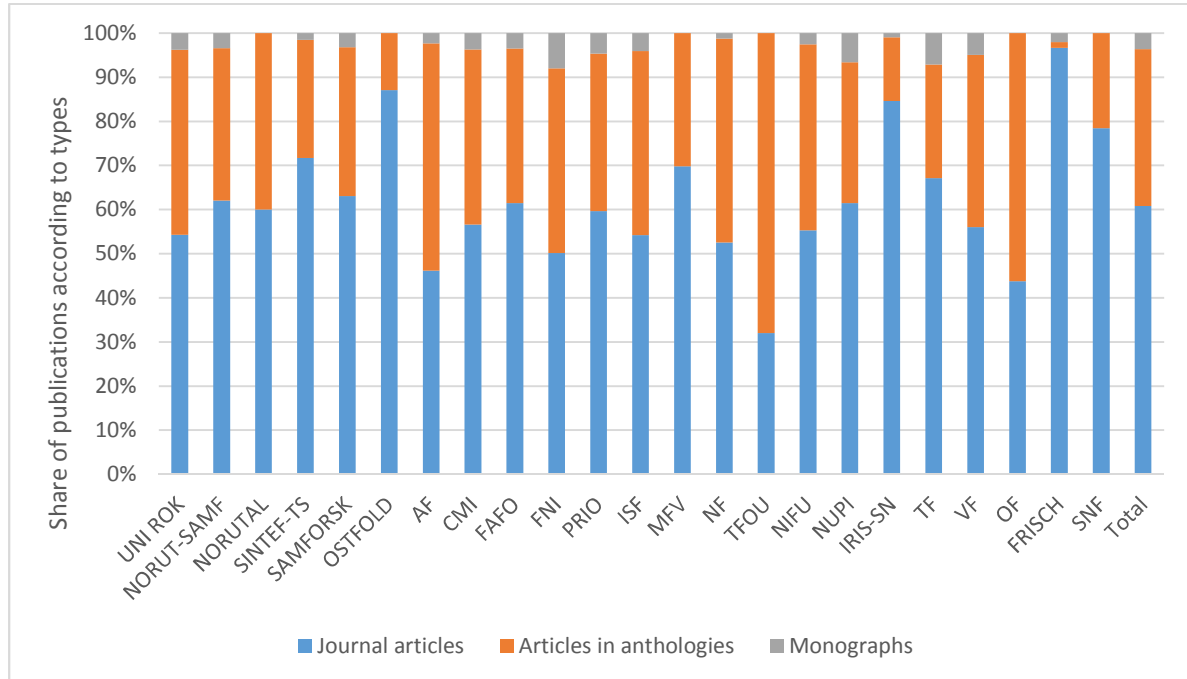
Source: <http://www.foustatistikbanken.no/>

Table 3A. Development in the annual average publication points per publication for the research institutes. The final column to the right provides an average for the years where data are available for the individual institutes. For comparisons, average publication points per publication is also provided at an aggregate level for other research institute sectors in Norway.

Grp.	Institutes	2007	2008	2009	2010	2011	2012	2013	2014	Avg. all years
1	CMI	0.80	0.89	1.32	0.94	1.20	0.88	1.04	1.12	1.02
1	FNI	0.98	2.08	1.21	1.71	1.08	1.25	1.07	1.37	1.34
1	NUPI	1.07	1.30	1.27	1.49	1.14	1.20	1.18	1.01	1.21
1	PRIO	0.88	1.16	1.20	0.94	1.17	1.12	1.10	1.19	1.10
2	AF	0.82	0.53	0.78	0.85	0.93	0.93	0.69	0.72	0.78
2	MFV	0.66	0.60	0.97	0.53	0.45	0.44	0.51	0.77	0.62
2	NF	0.75	0.95	1.17	0.75	0.81	0.66	0.75	0.57	0.80
2	NORUTAL	0.78	0.73	0.25	0.70	0.83	0.43	0.67	0.60	0.62
2	NORUT-SAMF	0.69	0.67	1.27	1.13	0.68	0.66	0.76	0.55	0.80
2	OF	0.69	0.58	0.76	0.87	0.62	0.79	0.71	0.75	0.72
2	OSTFOLD	0.60	0.00	1.00	0.87	1.81	1.50	1.50	0.60	0.98
2	TF	2.06	1.78	0.71	1.58	1.92	0.78	1.00	0.84	1.33
2	TFOU	n/a	0.00	0.35	0.55	0.40	0.53	0.00	0.68	0.36
2	VF	1.31	0.76	0.88	0.87	0.66	0.68	0.73	0.65	0.82
3	FAFO	0.76	1.28	0.85	0.90	0.82	1.19	1.02	1.01	0.98
3	FRISCH	n/a	1.07	0.71	0.76	0.89	1.26	1.33	1.45	1.07
3	IRIS-SN	1.28	1.07	1.08	1.15	0.81	0.85	0.90	0.64	0.97
3	ISF	1.22	1.05	0.85	0.84	1.00	0.85	1.08	1.12	1.00
3	NIFU	0.89	0.92	0.97	1.18	1.17	0.79	0.96	0.82	0.96
3	SAMFORSK	0.64	1.31	0.89	0.88	0.71	0.68	0.96	0.87	0.87
3	SINTEF-TS	0.62	0.81	0.78	0.77	0.64	0.75	0.51	0.98	0.73
3	SNF	0.76	0.73	0.69	1.21	0.64	0.87	0.90	0.55	0.79
3	UNI ROK	0.98	0.89	1.07	0.96	0.75	0.89	0.85	0.93	0.91
	Total	0.94	1.10	1.01	1.04	0.96	0.94	0.94	0.96	0.99
	Environmental institutes	0.62	0.65	0.70	0.68	0.66	0.65	0.62	0.60	0.65
	Primary institutes	0.71	0.69	0.70	0.67	0.66	0.62	0.67	0.63	0.67
	Technical industrial institutes	0.76	0.76	0.76	0.75	0.69	0.70	0.71	0.67	0.72

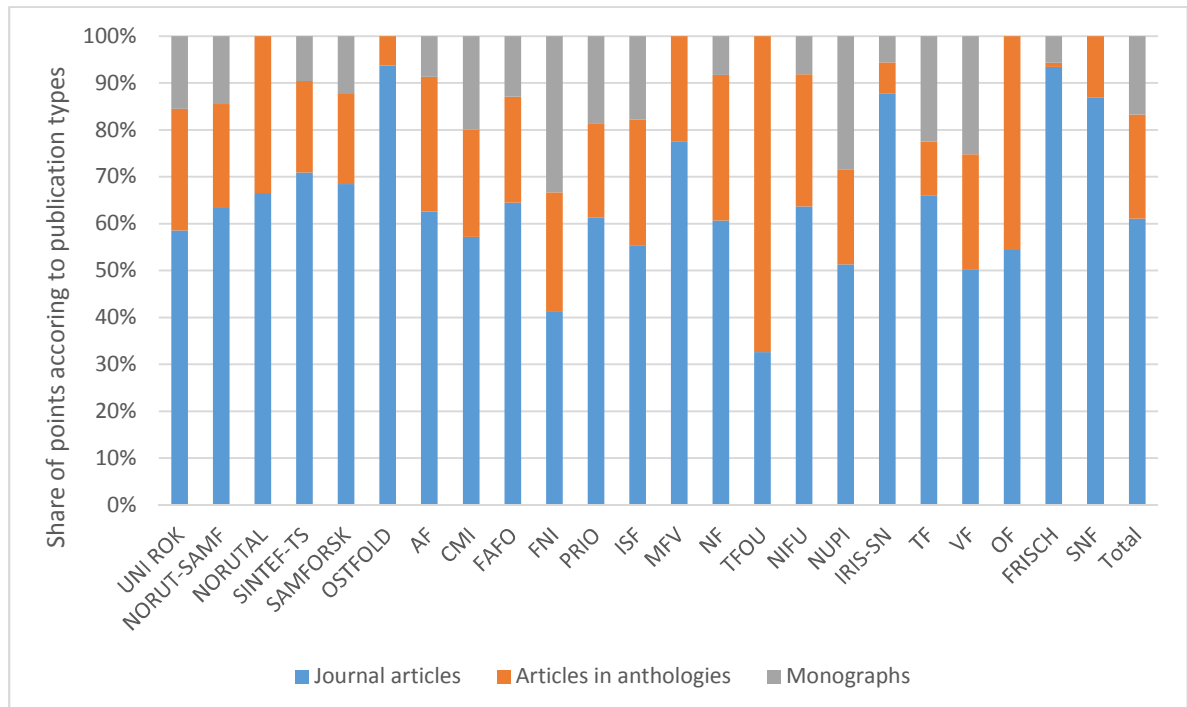
Source: <http://www.foustatistikbanken.no/>

Figure 2A. Publication profiles for the institutes. The profiles are the relative share of publication output among the three publication types eligible for points in the NPI. The figure should be compared with Figure 3A where the share of points distributed on publication types are shown.



Source: <http://www.foustatistikbanken.no/>

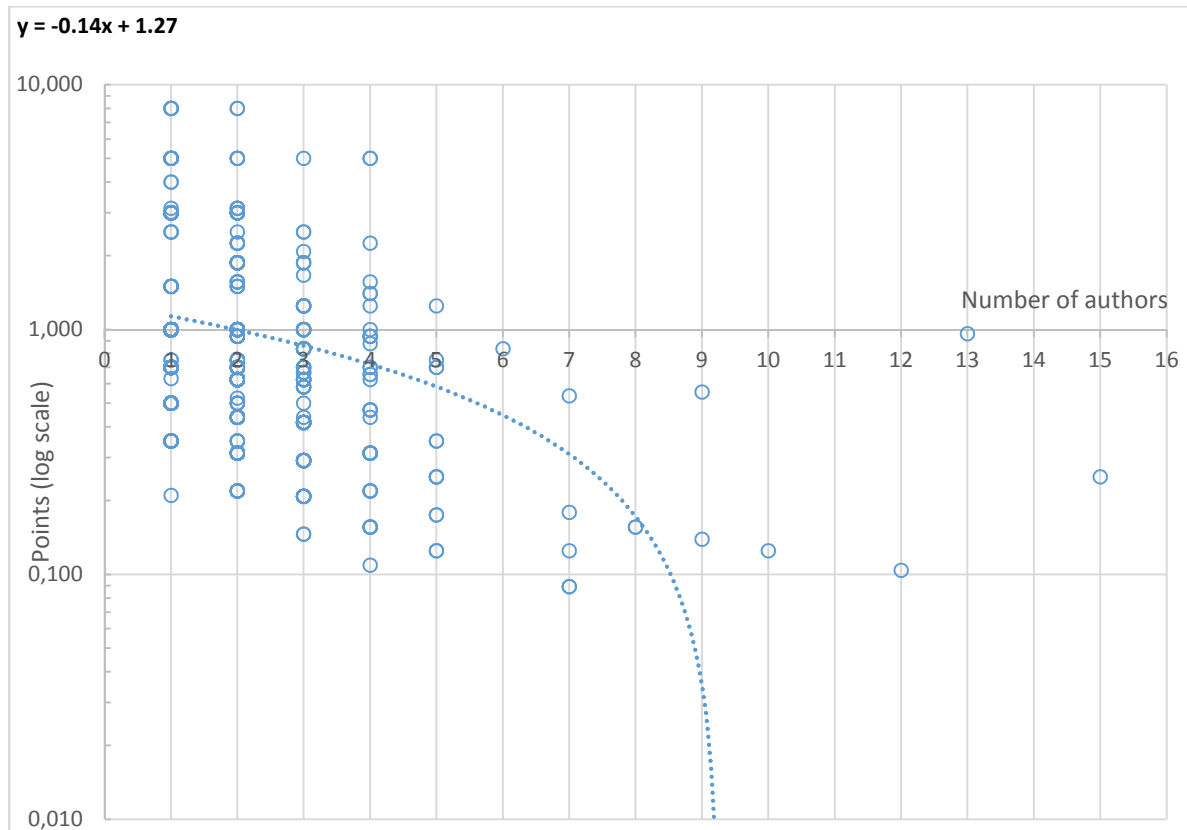
Figure 3A. Publication profiles for the institutes. The profiles are the relative share of points distributed among the three publication types eligible for points in the NPI. The figure should be compared with Figure 2A where the share of publication output distributed on publication types are shown.



Source: <http://www.foustatistikbanken.no/>

Collaboration patterns

Figure 4A. Publication points as a function of number of authors per publication (2007-10). Notice, publication points are on a log-scale. The fitted linear function shows the estimated drop in points for each additional author.



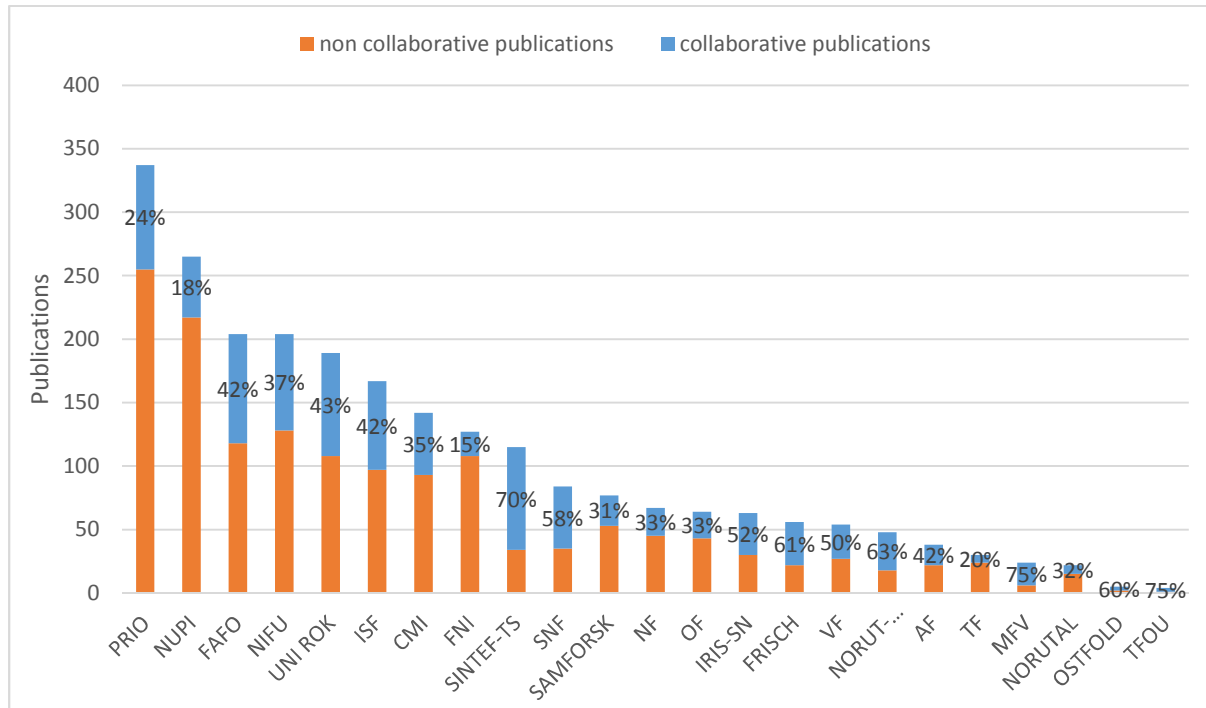
Source: <http://www.foustatistikbanken.no/>

Table 4A. Descriptive statistics supporting Figure 4A.

	points 1 author	points 2 authors	points 3 authors	points 4 authors	points 5 authors	points 6 authors	points 7 authors	points 8 authors	points 9 authors	points 10 authors	points 12 authors	points 13 authors	points 15 authors
Nbr. of observations	528	326	134	50	16	2	5	4	2	1	1	1	1
Minimum	0.21	0.22	0.15	0.11	0.13	0.73	0.09	0.16	0.14	0.13	0.10	0.96	0.25
Maximum	8.00	8.00	5.00	5.00	1.25	0.83	0.54	0.16	0.56	0.13	0.10	0.96	0.25
1st Quartile	0.70	0.50	0.29	0.24	0.23	0.76	0.09	0.16	0.24	0.13	0.10	0.96	0.25
Median	1.00	0.63	0.58	0.31	0.35	0.78	0.13	0.16	0.35	0.13	0.10	0.96	0.25
3rd Quartile	1.00	1.00	0.83	0.83	0.55	0.81	0.18	0.16	0.45	0.13	0.10	0.96	0.25
Mean	1.18	0.97	0.69	0.72	0.42	0.78	0.20	0.16	0.35	0.13	0.10	0.96	0.25
Variance (n-1)	1.20	0.93	0.35	0.98	0.09	0.01	0.04	0.00	0.09				
Standard deviation (n-1)	1.09	0.97	0.59	0.99	0.30	0.07	0.19	0.00	0.30				

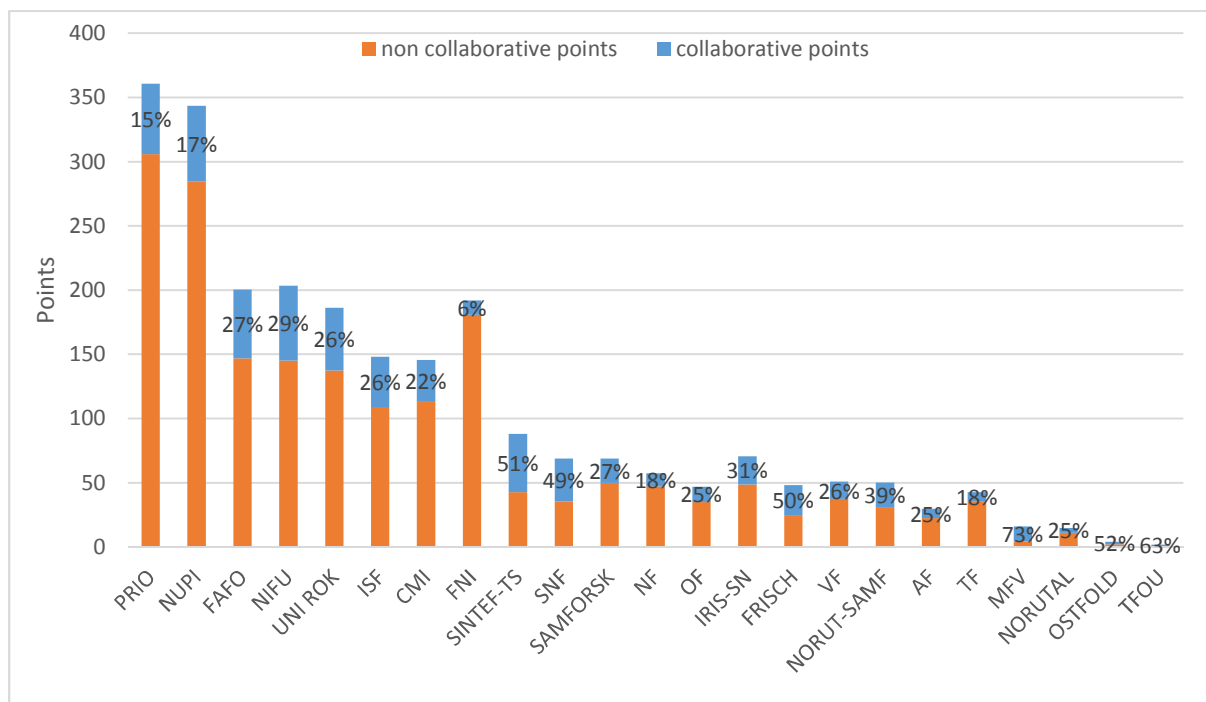
Source: <http://www.foustatistikbanken.no/>

Figure 5A. Number of collaborative and non-collaborative publications for the institutes cumulated for the period 2007-10. Proportion of collaborative publications of the total institutional output is shown as a percentage; the institutes are ranked according to cumulated output for period.



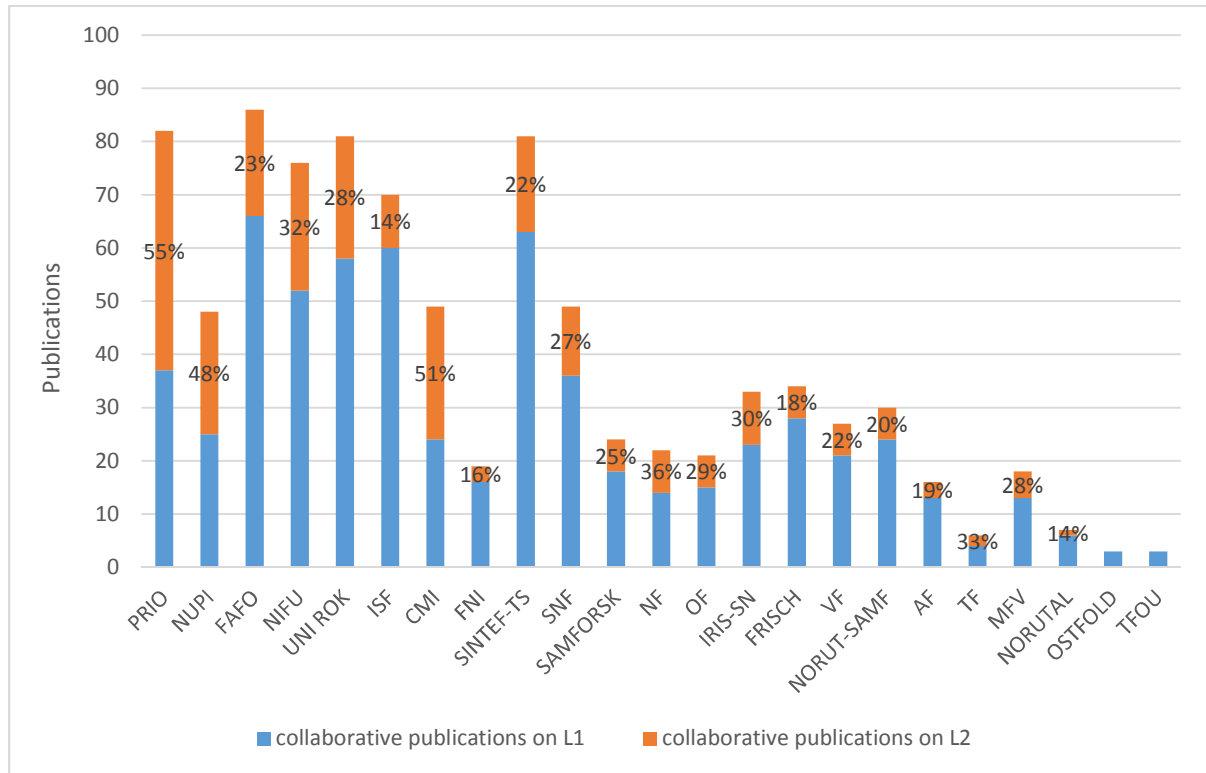
Source: Individual publication data from NIFU

Figure 6A. Number of collaborative and non-collaborative publication points for the institutes cumulated for the period 2007-10. Proportion of collaborative points of the total institutional output of points is shown as a percentage; the institutes are ranked according to cumulated publication output for period.



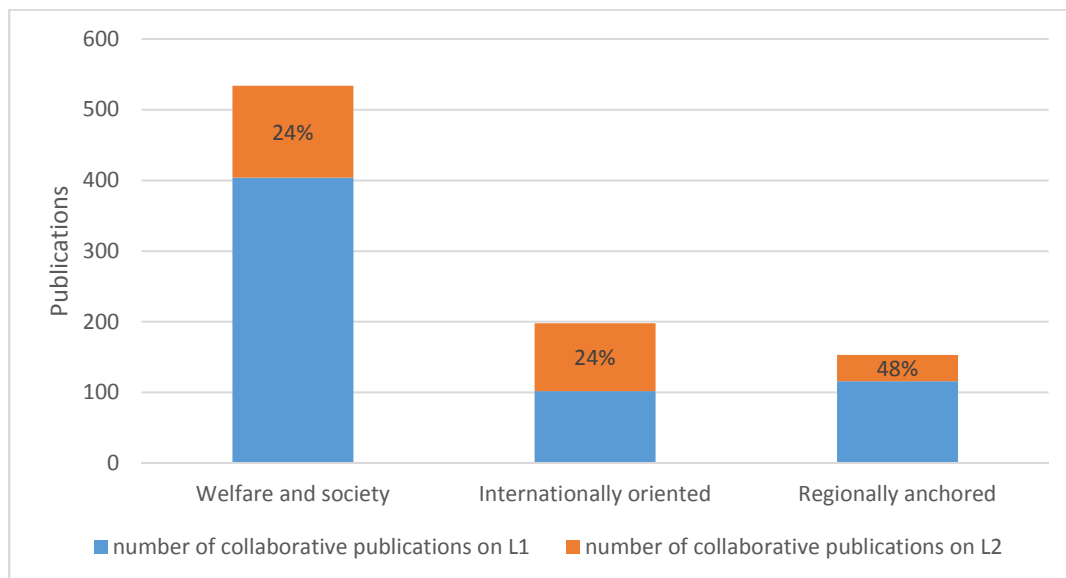
Source: Individual publication data from NIFU

Figure 7A. Number of collaborative and non-collaborative publications for the institutes on level 1 and level 2 cumulated for the period 2007-10. Proportion of collaborative publications of the total institutional output is shown as a percentage; the institutes are ranked according to cumulated output for period.



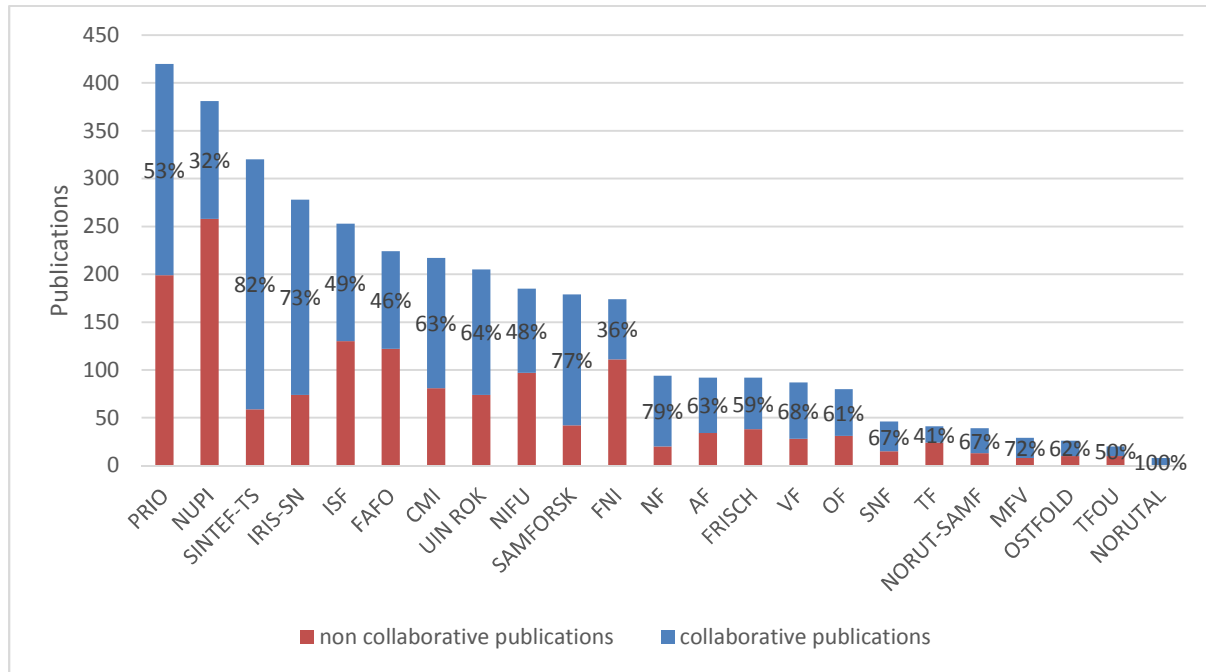
Source: Individual publication data from NIFU

Figure 8A. Number of collaborative and non-collaborative publications for the groups on level 1 and level 2 cumulated for the period 2007-10. Proportion of collaborative publications of the total group output is shown as a percentage.



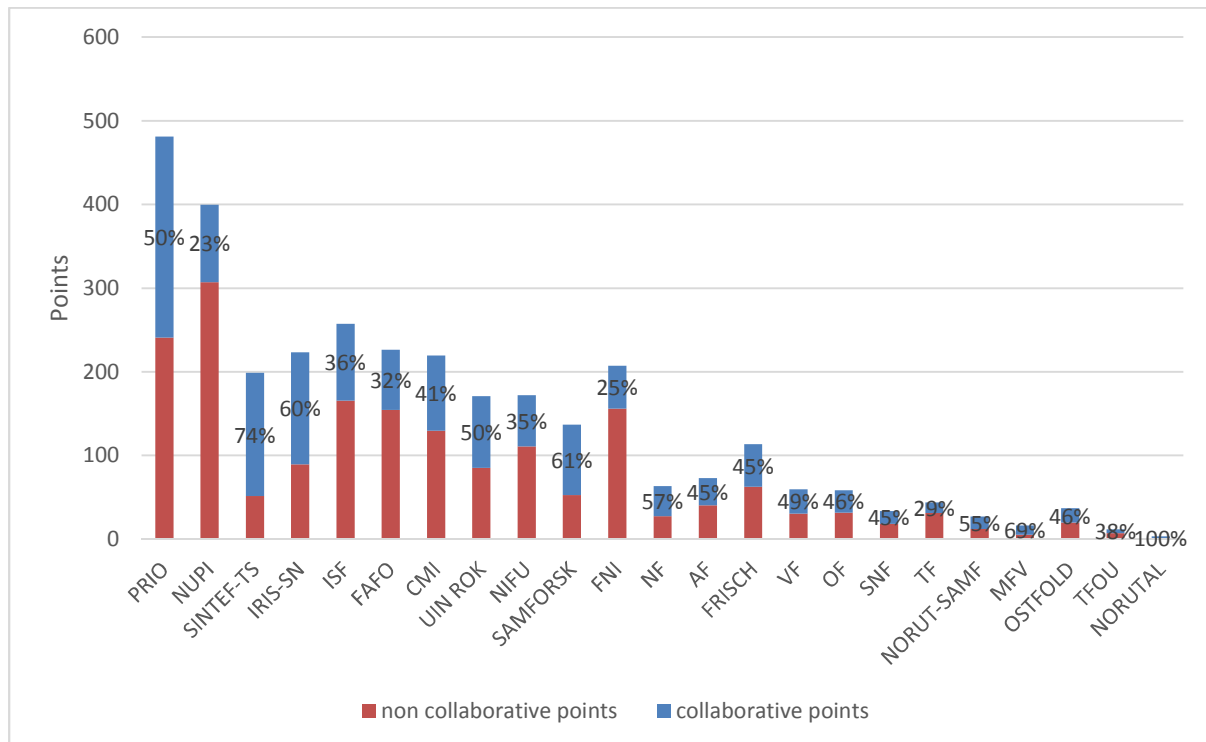
Source: Individual publication data from NIFU

Figure 9A. Number of collaborative and non-collaborative publications for the institutes cumulated for the period 2011-15. Proportion of collaborative publications of the total institutional output is shown as a percentage; the institutes are ranked according to cumulated output for period.



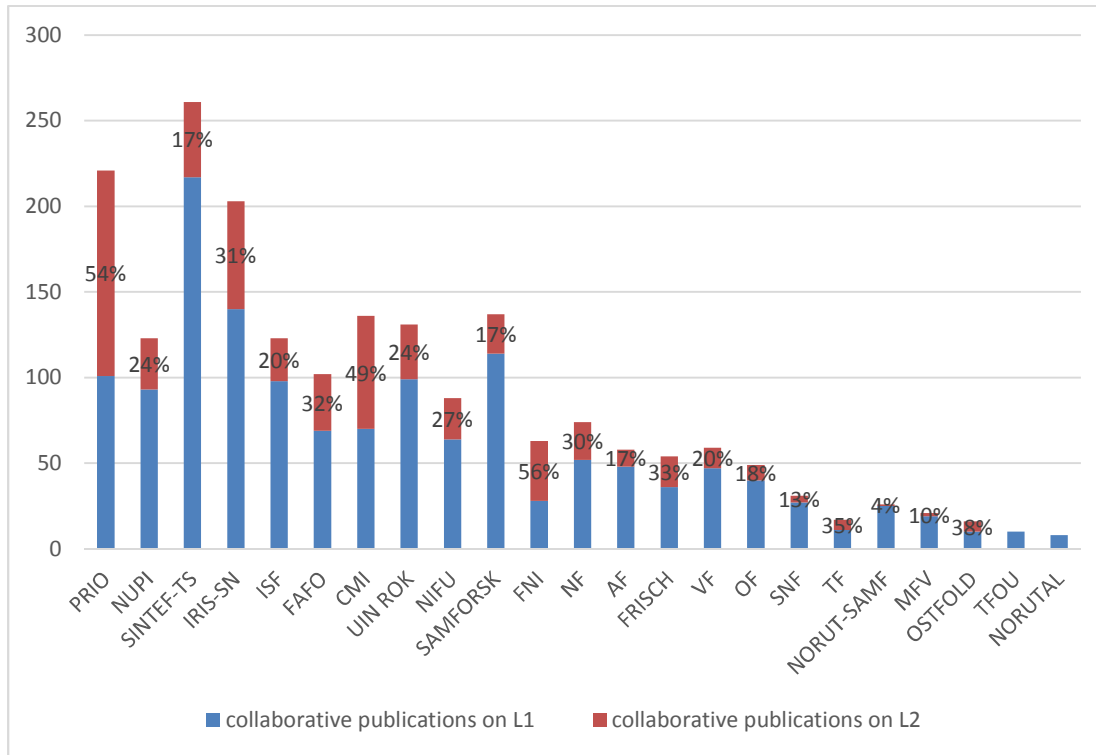
Source: Individual publication data from Cristin

Figure 10A. Number of collaborative and non-collaborative publication points for the institutes cumulated for the period 2011-15. Proportion of collaborative publication points of the total institutional output is shown as a percentage; the institutes are ranked according to cumulated output for period.



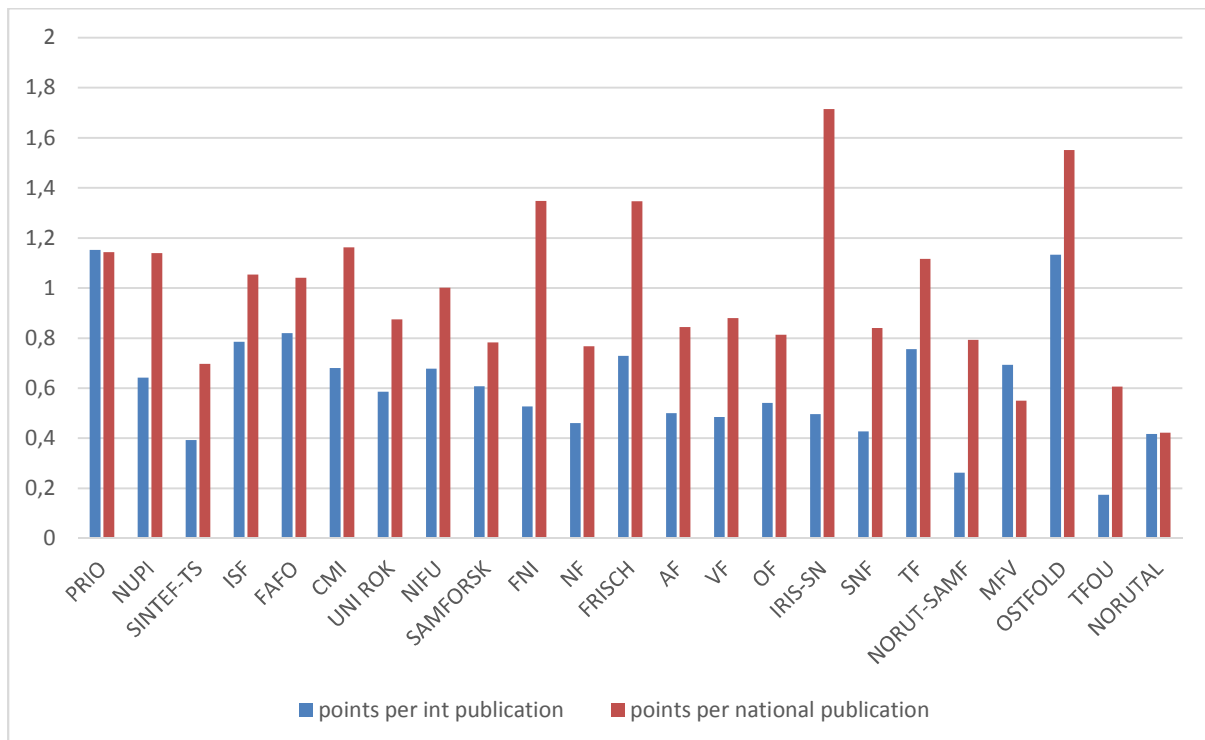
Source: Individual publication data from Cristin

Figure 11A. Number of collaborative and non-collaborative publications for the institutes on level 1 and level 2 cumulated for the period 2011-15. Proportion of collaborative publications of the total institutional output is shown as a percentage; the institutes are ranked according to cumulated output for period.



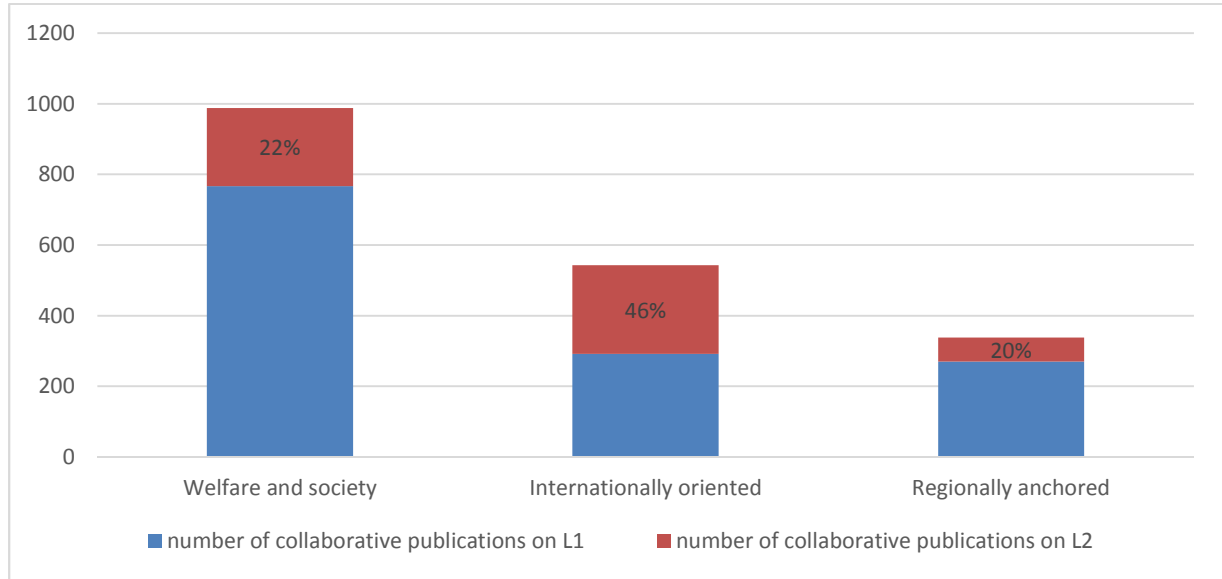
Source: Individual publication data from Cristin

Figure 12A. Comparison of publication points per national versus international publication for the institutes for the period 2001-15.



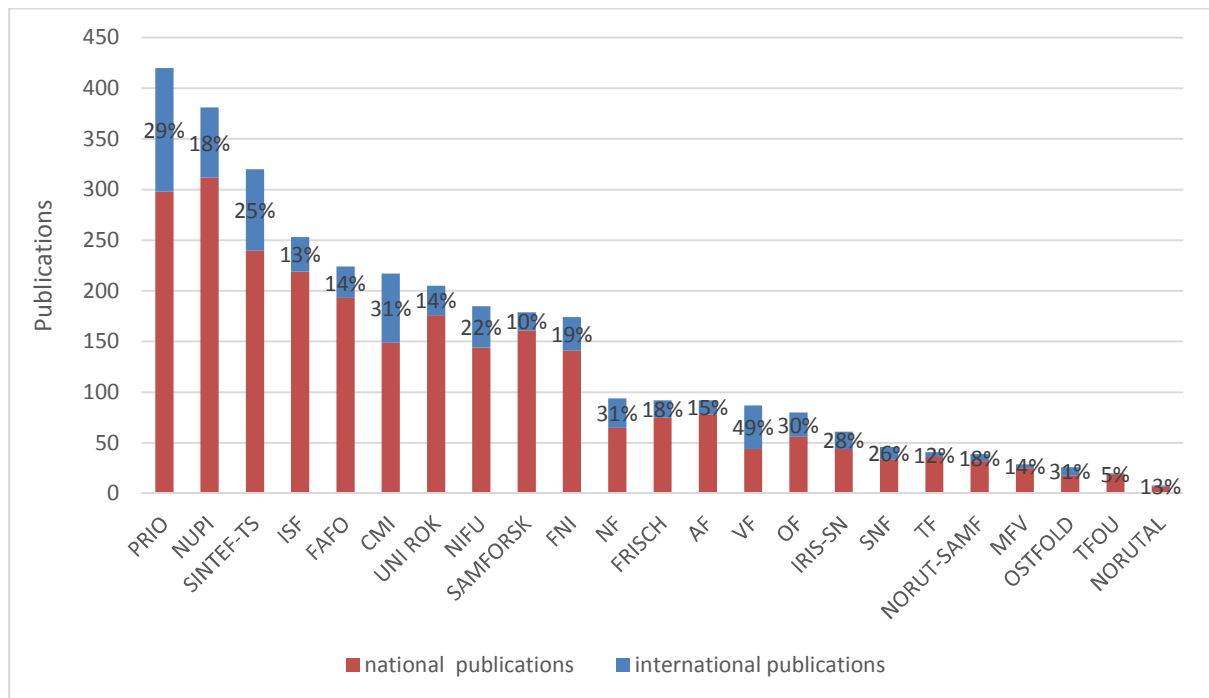
Source: Individual publication data from Cristin

Figure 13A. Number of collaborative and non-collaborative publications for the groups on level 1 and level 2 cumulated for the period 2011-15. Proportion of collaborative publications of the total group output is shown as a percentage.



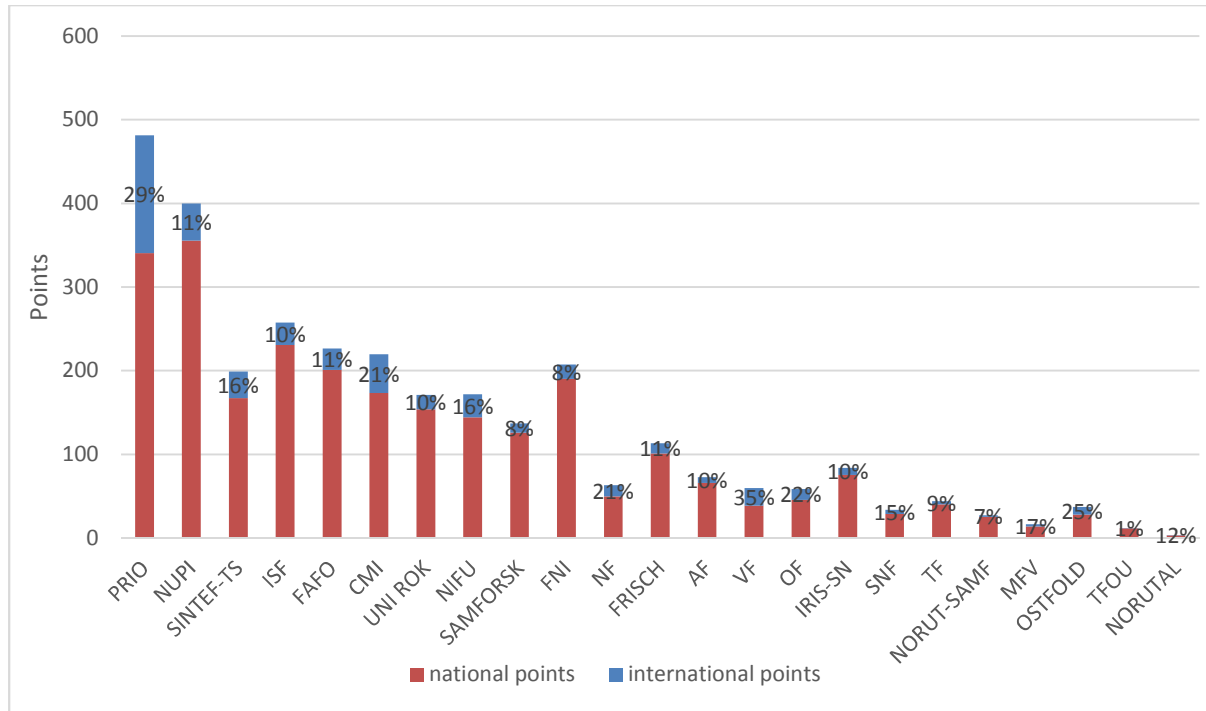
Source: Individual publication data from Cristin

Figure 14A. Proportion of national and international publications in the period 2011-14. The institutes are ordered according to publication volume.



Source: Individual publication data from Cristin

Figure 15A. Proportion of national and international publication points in the period 2011-14. The institutes are ordered according to publication volume.



Source: Individual publication data from Cristin

Visibility in the international citation database Web of Science

Table 5A. Distribution of languages in the visible Web of Science publications from the institutes.

	Article	Article; Book Chapter	Article; Proceedings Paper	Biographical-Item	Book Review	Editorial Material	Letter	Meeting Abstract	Proceedings Paper	Review	Review; Book Chapter	Total
Danish	5			1	1							7
Dutch	1											1
English	1072	5	63		56	17	1	9	7	33	2	1265
Norwegian	51			1	8	6				4		70
Spanish						1	1					2
Swedish	1											1
Total	1130	5	63	2	65	24	2	9	7	37	2	1346

Source: Web of Science®, CWTS, Leiden University

Appendix 2: Analysis of individual institutes

UNI ROK: Uni Research Rokkan (only 305.61.01.00) - Group: Welfare and society

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	43	26	17	23	13	10	18	12	6	2	1	1
2008	50	43	7	32	26	6	16	15	1	2	2	
2009	64	48	16	31	23	8	28	21	7	5	4	1
2010	32	25	7	19	14	5	12	10	2	1	1	
2011	64	51	13	30	20	10	34	31	3			
2012	30	20	10	24	18	6	6	2	4			
2013	76	57	19	35	27	8	39	29	10	2	1	1
2014	35	25	10	20	16	4	12	6	6	3	3	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	42.1	15.6	26.5	26.3	8.7	17.6	9.6	6.9	2.7	6.2		6.2
2008	44.3	32	12.3	27.3	16	11.3	10.4	9.4	1	6.6	6.6	
2009	68.7	40.6	28.1	36.3	17.8	18.4	15.3	9.6	5.6	17.1	13.1	4
2010	30.8	19.4	11.4	20.6	10.8	9.8	5.2	3.6	1.6	5	5	
2011	48	29.1	18.9	29.6	13	16.6	18.3	16.1	2.2			
2012	26.8	12.4	14.3	23.6	11.3	12.2	3.2	1.1	2.1			

2013	64.4	35.5	28.8	29.8	18.4	11.4	24.5	15	9.5	10.1	2.1	8
2014	32.4	23	9.4	15.7	9.8	5.9	6.2	2.7	3.4	10.5	10.5	0

Source: <http://www.foustatistikkbanken.no/>

NORUT-SAMF: Northern Research Institute Tromso (only 6002.10.20.00) – Group: Regionally anchored

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	7	3	4	4	3	1	3		3			
2008	7	6	1	3	3		4	3	1			
2009	18	15	3	13	10	3	3	3		2	2	
2010	16	11	5	13	8	5	3	3				
2011	13	12	1	10	9	1	3	3				
2012	11	11		3	3		7	7		1	1	
2013	13	12	1	7	6	1	6	6				
2014	2	2	0	1	1	0	1	1	0	0	0	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	4.8	1.9	2.9	2.2	1.9	0.2	2.6		2.6			
2008	4.7	4	0.6	2.5	2.5		2.2	1.6	0.6			
2009	22.8	14.9	7.9	12.8	5	7.9	1.8	1.8		8.1	8.1	

2010	18	6.2	11.8	16.1	4.3	11.8	1.8	1.8				
2011	8.9	7	1.9	7.1	5.3	1.9	1.8	1.8				
2012	7.3	7.3		1.1	1.1		3.1	3.1		3.1	3.1	
2013	9.9	6.9	3	6.9	3.9	3	3	3				
2014	1.1	1.1	0	0.4	0.4	0	0.7	0.7	0	0	0	0

Source: <http://www.foustatistikkbanken.no/>

NORUTAL: Northern Research Institute Alta – Group: Regionally anchored

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	4	4		4	4							
2008	12	11	1	11	10	1	1	1				
2009	2	2		1	1		1	1				
2010	8	8					8	8				
2011	7	6	1	2	1	1	5	5				
2012	3	3		2	2		1	1				
2013	6	6		3	3		3	3				
2014	8	7	1	7	7	0	1	0	1	0	0	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2

2007	3.1	3.1		3.1	3.1							
2008	8.7	7.8	0.9	8	7.1	0.9	0.7	0.7				
2009	0.5	0.5		0.2	0.2		0.4	0.4				
2010	5.6	5.6					5.6	5.6				
2011	5.8	2.8	3	3.6	0.6	3	2.2	2.2				
2012	1.3	1.3		0.8	0.8		0.4	0.4				
2013	4	4		2.6	2.6		1.4	1.4				
2014	4.8	4.2	0.6	4.2	4.2	0	0.6	0	0.6	0	0	0

Source: <http://www.foustatistikkbanken.no/>

SINTEF-TS: SINTEF Technology and Society (only 7401.60.xx.xx) – Group: Welfare and society

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	14	13	1	7	6	1	7	7				
2008	19	18	1	3	2	1	15	15		1	1	
2009	51	41	10	36	27	9	14	13	1	1	1	
2010	31	21	10	31	21	10						
2011	65	52	13	48	37	11	16	15	1	1		1
2012	89	77	12	55	44	11	32	31	1	2	2	
2013	89	76	13	67	62	5	22	14	8			
2014	108	93	15	87	74	13	19	17	2	2	2	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	8.7	6.8	1.9	5.7	3.8	1.9	3	3				
2008	15.4	14.5	0.9	2	1	0.9	8.4	8.4		5	5	
2009	39.9	28.7	11.2	26.2	16	10.2	8.7	7.7	1	5	5	
2010	24	9.3	14.7	24	9.3	14.7						
2011	41.3	21.2	20.1	29.4	15	14.4	6.9	6.2	0.6	5		5
2012	66.8	47.9	19	43.9	25.6	18.4	16.1	15.5	0.6	6.8	6.8	
2013	45.1	36.6	8.5	33.6	30	3.5	11.6	6.6	5			
2014	71.5	54.4	17.1	57	41	16.1	6.4	5.3	1	8.1	8.1	0

Source: <http://www.foustatistikkbanken.no/>

SAMFORSK: NTNU Social Research – Group: Welfare and society

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	17	12	5	7	5	2	9	6	3	1	1	
2008	8	7	1	7	6	1				1	1	
2009	27	20	7	17	11	6	7	6	1	3	3	
2010	25	22	3	21	18	3	4	4		0	0	
2011	30	28	2	20	19	1	9	8	1	1	1	
2012	56	50	6	30	25	5	25	24	1	1	1	
2013	36	26	10	26	17	9	9	9		1		1
2014	50	38	12	29	18	11	21	20	1	0	0	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	10.8	5.7	5.1	6.5	3.7	2.8	4.3	2.1	2.2			
2008	10.5	7.5	3	7.3	4.3	3				3.1	3.1	
2009	24.1	14.6	9.5	14.1	5.1	9	2.5	2	0.5	7.5	7.5	
2010	22	15.2	6.8	19.9	13.1	6.8	2.1	2.1				
2011	21.3	19	2.4	14.2	12.3	1.9	4	3.5	0.5	3.1	3.1	
2012	37.9	27.9	10	23.2	13.6	9.6	11.5	11.2	0.3	3.1	3.1	
2013	34.4	13.8	20.6	23	10.4	12.6	3.3	3.3		8		8
2014	43.3	22.1	21.2	31.4	10.8	20.6	11.9	11.3	0.6	0	0	0

Source: <http://www.foustatistikkbanken.no/>

OSTFOLD: Ostfold Research Institute – Group: Regionally anchored

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	1	1		1	1							
2008												
2009	1	1		1	1							
2010	3	3		3	3							
2011	8	4	4	7	3	4	1	1				

2012	8	4	4	6	2	4	2	2				
2013	5	2	3	5	2	3						
2014	5	4	1	4	3	1	1	1	0	0	0	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	0.6	0.6		0.6	0.6							
2008												
2009	1	1		1	1							
2010	2.6	2.6		2.6	2.6							
2011	14.5	2.5	12	13.8	1.8	12	0.7	0.7				
2012	12	2.8	9.2	10.8	1.6	9.2	1.2	1.2				
2013	7.5	1.2	6.2	7.5	1.2	6.2						
2014	3	2.4	0.6	2.3	1.7	0.6	0.7	0.7	0	0	0	0

Source: <http://www.foustatistikkbanken.no/>

AF: Agder research – Group: Regionally anchored

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	5	3	2	3	2	1	2	1	1			
2008	4	2	2				4	2	2			

2009	16	12	4	5	2	3	10	9	1	1	1	
2010	13	9	4	11	7	4	2	2				
2011	13	11	2	7	5	2	6	6				
2012	23	15	8	11	8	3	11	6	5	1	1	0
2013	38	33	5	15	12	3	23	21	2			
2014	18	17	1	8	7	1	9	9	0	1	1	0

Source: <http://www.foustatistikbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	4.1	2.2	1.9	3	1.5	1.5	1.1	0.7	0.4			
2008	2.1	0.6	1.5				2.1	0.6	1.5			
2009	12.4	6.2	6.2	7.2	1.5	5.8	2.8	2.4	0.4	2.3	2.3	
2010	11.1	4.6	6.5	10.9	4.4	6.5	0.2	0.2				
2011	12.1	7.2	4.9	8.9	4	4.9	3.2	3.2				
2012	21.5	13	8.5	11.2	5.4	5.8	5.2	2.6	2.6	5	5	
2013	26.4	18.3	8.2	15.1	7.7	7.4	11.3	10.6	0.8			
2014	12.9	9.9	3	7.8	4.8	3	3.5	3.5	0	1.6	1.6	0

Source: <http://www.foustatistikbanken.no/>

CMI: Chr. Michelsen Institute – Group: Internationally oriented

Publications

Year	All pubs	Journal articles	Articles in anthologies	Monographies
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	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	33	26	7	17	13	4	16	13	3			
2008	24	14	10	14	13	1	10	1	9			
2009	46	26	20	32	19	13	12	5	7	2	2	
2010	40	19	21	17	11	6	21	8	13	2		2
2011	52	26	26	27	24	3	21	1	20	4	1	3
2012	49	38	11	27	22	5	21	16	5	1		1
2013	57	29	28	36	22	14	19	6	13	2	1	1
2014	49	23	26	28	20	8	19	2	17	2	1	1

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	26.4	17.2	9.2	17.7	10.6	7.1	8.7	6.5	2.1			
2008	21.4	11.6	9.8	13.9	10.9	3	7.5	0.7	6.8			
2009	60.7	25.9	34.8	43.8	15.2	28.5	9.4	3.1	6.3	7.5	7.5	
2010	37.7	12	25.7	15.6	7.8	7.8	13.1	4.2	8.9	9		9
2011	62.3	23.5	38.9	21.5	18	3.5	11.8	0.4	11.4	29	5	24
2012	43.1	24.2	18.9	24.1	16.4	7.7	11	7.8	3.2	8		8
2013	59.4	21.8	37.5	42.4	15.5	26.9	10.5	3.2	7.3	6.5	3.1	3.3
2014	54.7	17.6	37	30	11.8	18.2	11.6	0.8	10.8	13	5	8

Source: <http://www.foustatistikkbanken.no/>

FAFO: Fafo Research Foundation – Group: Welfare and society

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	43	40	3	19	17	2	22	21	1	2	2	
2008	47	32	15	40	28	12	5	2	3	2	2	
2009	66	60	6	41	37	4	25	23	2			
2010	48	35	13	34	28	6	13	7	6	1		1
2011	58	44	14	35	27	8	22	17	5	1		1
2012	61	47	14	39	32	7	17	11	6	5	4	1
2013	52	33	19	28	23	5	22	10	12	2		2
2014	53	33	20	27	22	5	24	9	15	2	2	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	32.7	26.2	6.5	19.9	13.9	6	12.8	12.3	0.5			
2008	60.1	28.9	31.2	49.7	20.9	28.8	3.8	1.4	2.4	6.6	6.6	
2009	56.4	47.3	9.1	41.4	33.5	7.9	15.1	13.8	1.2			
2010	43	22.2	20.8	27	18	9	8	4.2	3.8	8		8
2011	47.5	28.4	19.1	32	19.2	12.8	13	9.2	3.8	2.5		2.5
2012	72.6	43.9	28.8	39.6	23.6	16	12.2	7.5	4.8	20.8	12.8	8
2013	52.8	24.8	28.1	30.5	18.7	11.8	14.3	6	8.2	8		8
2014	53.4	30	23.4	29.9	17.5	12.4	15.4	4.3	11	8.1	8.1	0

Source: <http://www.foustatistikkbanken.no/>

FNI: Fridtjof Nansen Institute – Group: Internationally oriented

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	35	25	10	26	24	2	8		8	1	1	
2008	24	19	5	14	13	1	4	2	2	6	4	2
2009	27	20	7	16	14	2	10	5	5	1	1	
2010	41	32	9	27	25	2	8	3	5	6	4	2
2011	23	10	13	12	9	3	11	1	10			
2012	33	15	18	11	11		19	3	16	3	1	2
2013	67	30	37	18	17	1	45	10	35	4	3	1
2014	51	25	26	27	22	5	21	2	19	3	1	2

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	34.3	20.3	14	26.3	20.3	6	8		8			
2008	49.8	29.2	20.6	14.2	11.2	3	3	1.4	1.6	32.6	16.6	16
2009	32.6	20.8	11.8	19.6	13.6	6	8	2.2	5.8	5	5	
2010	70.2	44.9	25.2	27.1	22.8	4.2	7.1	2.1	5	36	20	16
2011	24.8	7.3	17.5	15.6	6.6	9	9.2	0.7	8.5			
2012	41.4	13.9	27.4	9.1	9.1		16.1	1.7	14.4	16.1	3.1	13
2013	71.4	33	38.4	17	14	3	33.6	6.2	27.4	20.8	12.8	8
2014	69.9	26.3	43.5	34.2	20.3	13.9	14.7	1	13.7	21	5	16

Source: <http://www.foustatistikkbanken.no/>

PRIO: Peace Research Institute Oslo (PRIO) – Group: Internationally oriented

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	57	37	20	33	21	12	22	14	8	2	2	
2008	97	54	43	44	29	15	46	22	24	7	3	4
2009	85	53	32	54	36	18	26	17	9	5		5
2010	97	59	38	59	39	20	33	17	16	5	3	2
2011	114	47	67	54	32	22	55	14	41	5	1	4
2012	108	59	49	76	47	29	30	12	18	2		2
2013	102	61	41	65	46	19	32	13	19	5	2	3
2014	96	51	45	66	45	21	26	6	20	4	0	4

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	50.1	23.6	26.5	37.4	15.7	21.7	12.7	7.9	4.8			
2008	112.4	40.8	71.6	52.7	21.3	31.4	29.2	12.9	16.2	30.6	6.6	24
2009	102.3	38.4	63.9	58.8	30.4	28.4	14.5	8	6.5	29		29
2010	91.4	41.9	49.6	61.1	28.8	32.3	19.1	7.5	11.6	11.3	5.6	5.7
2011	133.9	36.9	97.1	69.3	24	45.3	33.6	7.9	25.7	31	5	26
2012	120.7	43.8	76.9	92.9	37.4	55.5	18.7	6.4	12.3	9		9
2013	112.4	50.9	61.4	64.8	35.3	29.5	23.2	7.5	15.6	24.5	8.1	16.3

2014	114.2	36.1	78.1	76.6	33	43.6	17.6	3.1	14.5	20	0	20
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Source: <http://www.foustatistikkbanken.no/>

ISF: Institute for Social Research – Group: Welfare and society

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	69	58	11	39	33	6	23	19	4	7	6	1
2008	34	33	1	19	18	1	12	12		3	3	
2009	69	60	9	30	27	3	37	31	6	2	2	
2010	64	53	11	33	26	7	30	26	4	1	1	
2011	57	47	10	25	18	7	30	28	2	2	1	1
2012	61	51	10	34	26	8	27	25	2			
2013	74	62	12	47	38	9	24	21	3	3	3	
2014	61	44	17	38	26	12	21	16	5	2	2	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	84.2	37.5	46.7	36.5	25.7	10.8	15.3	11.8	3.5	32.4		32.4
2008	35.6	33.7	1.9	16.2	14.3	1.9	6.3	6.3		13.1	13.1	
2009	58.9	47.2	11.8	31.3	22.3	9	19.5	16.7	2.8	8.1	8.1	
2010	53.7	39.4	14.4	17.3	13.8	3.5	31.4	20.5	10.9	5	5	

2011	57.2	32.6	24.6	28.8	13.8	14.9	17.9	16.3	1.6	10.5	2.5	8
2012	51.6	33.6	18	37.2	20.7	16.5	14.4	13	1.5			
2013	80.1	53.2	26.9	55.9	31.7	24.2	14.5	11.9	2.6	9.7	9.7	
2014	68.6	37.5	31.1	47.6	20.1	27.5	12.9	9.3	3.6	8.1	8.1	0

Source: <http://www.foustatistikkbanken.no/>

MFV: Moreforskning – Group: Regionally anchored

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	5	5		4	4		1	1				
2008	1	1		1	1							
2009	6	5	1	6	5	1						
2010	12	7	5	8	6	2	4	1	3			
2011	4	4		2	2		2	2				
2012	8	7	1	7	6	1	1	1				
2013	7	7		3	3		4	4				
2014	10	9	1	6	5	1	4	4	0	0	0	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	3.3	3.3		2.6	2.6		0.7	0.7				

2008	0.6	0.6		0.6	0.6								
2009	5.8	3.9	1.9	5.8	3.9	1.9							
2010	6.3	3.1	3.3	4.5	2.4	2.1	1.8	0.7	1.1				
2011	1.8	1.8		1.2	1.2		0.5	0.5					
2012	3.5	3.2	0.3	3	2.7	0.3	0.4	0.4					
2013	3.6	3.6		2.1	2.1		1.5	1.5					
2014	7.7	5.8	1.9	5.3	3.4	1.9	2.4	2.4	0	0	0	0	0

Source: <http://www.foustatistikkbanken.no/>

NF: Nordland Research Institute – Group: Regionally anchored

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	13	11	2	6	6		7	5	2			
2008	11	11		2	2		8	8		1	1	
2009	12	9	3	6	6		5	2	3	1	1	
2010	31	22	9	10	8	2	21	14	7			
2011	16	12	4	11	9	2	5	3	2			
2012	19	18	1	13	12	1	6	6				
2013	33	19	14	16	11	5	17	8	9			
2014	23	17	6	19	17	2	4	0	4	0	0	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs	Journal articles	Articles in anthologies	Monographies
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	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	9.7	8	1.6	5.3	5.3		4.3	2.7	1.6			
2008	10.4	10.4		1.2	1.2		4.2	4.2		5	5	
2009	14	11.8	2.1	5.6	5.6		3.4	1.2	2.1	5	5	
2010	23.3	12.4	10.9	12.1	6.1	6	11.3	6.3	4.9			
2011	13	6.9	6.1	10.6	5.7	4.9	2.4	1.2	1.2			
2012	12.5	11.2	1.2	9.8	8.5	1.2	2.7	2.7				
2013	24.6	8.6	16	17.7	5.6	12.1	6.9	3	3.9			
2014	13.2	10.3	2.9	10.9	10.3	0.6	2.3	0	2.3	0	0	0

Source: <http://www.foustatistikkbanken.no/>

TFOU: Trondelag R&D Institute – Group: Regionally anchored

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007												
2008												
2009	2	2		2	2							
2010	2	2					2	2				
2011	3	3		1	1		2	2				
2012	12	12		2	2		10	10				
2013												
2014	6	6	0	3	3	0	3	3	0	0	0	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007												
2008												
2009	0.7	0.7		0.7	0.7							
2010	1.1	1.1					1.1	1.1				
2011	1.2	1.2		0.6	0.6		0.6	0.6				
2012	7.4	7.4		1.2	1.2		6.2	6.2				
2013												
2014	4.1	4.1	0	2.2	2.2	0	1.8	1.8	0	0	0	0

Source: <http://www.foustatistikkbanken.no/>

NIFU: NIFU Nordic Institute for Studies in Innovation, Research and Education – Group: Welfare and society

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	52	38	14	29	21	8	23	17	6			
2008	48	29	19	18	14	4	30	15	15			
2009	47	34	13	19	13	6	24	17	7	4	4	
2010	57	47	10	33	25	8	19	17	2	5	5	
2011	43	31	12	32	23	9	11	8	3			
2012	39	30	9	19	14	5	20	16	4			
2013	45	34	11	32	21	11	13	13				

2014	58	50	8	33	27	6	24	22	2	1	1	0
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Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	46.5	23	23.5	32.2	13.7	18.5	14.3	9.3	5			
2008	44.1	21.6	22.5	19.6	11.9	7.7	24.5	9.7	14.8			
2009	45.4	25.6	19.9	25.9	10.7	15.2	14.5	9.9	4.6	5	5	
2010	67.4	52.8	14.7	33.4	19.8	13.6	11.7	10.7	1	22.3	22.3	
2011	50.2	23.2	27	43	18.2	24.8	7.2	5	2.2			
2012	30.7	21.1	9.6	17.5	11	6.5	13.1	10.1	3			
2013	43.4	23.9	19.5	36.8	17.4	19.5	6.6	6.6				
2014	47.7	37.2	10.5	30.6	21.3	9.2	14	12.7	1.2	3.1	3.1	0

Source: <http://www.foustatistikkbanken.no/>

NUPI: Norwegian Institute of International Affairs – Group: Internationally oriented

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	56	38	18	32	31	1	21	6	15	3	1	2
2008	54	37	17	39	31	8	13	5	8	2	1	1
2009	83	62	21	34	32	2	40	24	16	9	6	3
2010	73	48	25	42	39	3	22	4	18	9	5	4

2011	92	68	24	65	60	5	23	6	17	4	2	2
2012	96	71	25	55	47	8	36	22	14	5	2	3
2013	76	57	19	52	50	2	19	5	14	5	2	3
2014	88	61	27	61	52	9	23	6	17	4	3	1

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	59.7	27.7	32	27.6	24.6	3	15.9	3	12.9	16.1		16.1
2008	70.1	33.4	36.8	50.6	28.9	21.8	9.4	2.4	7	10.1	2.1	8
2009	105.2	72.4	32.8	33.6	30	3.6	26.2	15.5	10.7	45.4	26.9	18.5
2010	109.1	61.7	47.4	42.6	36.8	5.8	19.7	2.8	16.9	46.8	22.1	24.7
2011	105.3	63.1	42.2	65.2	52.2	12.9	19.7	3.4	16.2	20.5	7.5	13
2012	115.5	62.4	53.1	59	40.1	18.9	27.3	14.1	13.2	29.1	8.1	21
2013	90	53.5	36.5	47.9	42.4	5.5	15.5	3	12.5	26.6	8.1	18.5
2014	88.9	56.7	32.2	55.3	39.1	16.2	17	2.7	14.3	16.7	15	1.7

Source: <http://www.foustatistikkbanken.no/>

IRIS-SN: IRIS Samfunnsforskning (not 7473.01.00.00) – Group: Welfare and society

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	8	6	2	7	5	2	1	1				

2008	18	15	3	16	13	3				2	2		
2009	21	12	9	21	12	9							
2010	16	13	3	16	13	3							
2011	27	22	5	24	19	5	3	3					
2012	24	18	6	21	16	5	3	2	1				
2013	24	16	8	17	12	5	7	4	3				
2014	70	50	20	54	34	20	16	16	0	0	0	0	0

Source: <http://www.foustatistikbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	10.2	5.4	4.8	9.5	4.8	4.8	0.7	0.7				
2008	19.2	16.1	3.1	9.2	6.1	3.1				10	10	
2009	22.7	8.1	14.6	22.7	8.1	14.6						
2010	18.4	9.4	9	18.4	9.4	9						
2011	21.9	13	8.9	21.1	12.2	8.9	0.8	0.8				
2012	20.5	11.2	9.3	19	10.3	8.7	1.5	0.9	0.6			
2013	21.5	7.7	13.8	18.3	6.5	11.8	3.2	1.2	2			
2014	44.9	20.9	24	39.1	15	24	5.8	5.8	0	0	0	0

Source: <http://www.foustatistikbanken.no/>

TF: Telemark Educational Research – Group: Regionally anchored

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	8	6	2	4	2	2	1	1		3	3	
2008	5	2	3	5	2	3						
2009	11	11		4	4		7	7				
2010	6	6		4	4		1	1		1	1	
2011	9	6	3	7	4	3	1	1		1	1	
2012	12	9	3	8	6	2	4	3	1			
2013	8	8		8	8							
2014	11	8	3	7	6	1	4	2	2	0	0	

Source: <http://www.foustatistikbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	16.5	11.6	4.9	6.9	2	4.9	0.2	0.2		9.4	9.4	
2008	8.9	2	6.9	8.9	2	6.9						
2009	7.8	7.8		3.8	3.8		4.1	4.1				
2010	9.5	9.5		3.8	3.8		0.7	0.7		5	5	
2011	17.3	9.4	7.9	11.9	4	7.9	0.4	0.4		5	5	
2012	9	5.9	3.1	7.3	4.8	2.5	1.7	1.1	0.6			
2013	8	8		8	8							
2014	9.2	5.9	3.3	6.4	4.5	1.9	2.8	1.4	1.4	0	0	0

Source: <http://www.foustatistikbanken.no/>

VF: Western Norway Research Institute – Group: Regionally anchored

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	10	9	1	8	8		1	1		1		1
2008	7	4	3	2	1	1	5	3	2			
2009	17	15	2	6	6		9	7	2	2	2	
2010	20	16	4	11	10	1	8	6	2	1		1
2011	15	12	3	11	9	2	4	3	1			
2012	27	22	5	15	14	1	10	7	3	2	1	1
2013	23	21	2	11	11		11	9	2	1	1	
2014	22	17	5	15	13	2	7	4	3	0	0	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	13.1	5.1	8	4.4	4.4		0.7	0.7		8		8
2008	5.3	2.7	2.6	1.9	0.6	1.2	3.4	2.1	1.3			
2009	15	14.5	0.4	4.4	4.4		4	3.6	0.4	6.6	6.6	
2010	17.4	10.4	7.1	8.7	6.8	1.9	4.7	3.5	1.2	4		4
2011	9.9	7.7	2.2	7.8	5.8	2	2.1	1.9	0.2			
2012	18.4	14.7	3.6	8.6	8.1	0.6	5.5	3.6	1.9	4.2	3.1	1.1
2013	16.9	16.1	0.8	7	7		4.9	4.1	0.8	5	5	
2014	14.4	10.4	4	12.7	9.1	3.6	1.7	1.3	0.4	0	0	0

Source: <http://www.foustatistikkbanken.no/>

OF: Eastern Norway Research Institute – Group: Regionally anchored

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	16	14	2	7	5	2	9	9				
2008	10	9	1	5	4	1	5	5				
2009	28	23	5	9	4	5	19	19				
2010	10	8	2	8	7	1	2	1	1			
2011	18	15	3	6	5	1	12	10	2			
2012	29	24	5	8	6	2	21	18	3			
2013	12	10	2	9	8	1	3	2	1			
2014	21	14	7	11	8	3	10	6	4	0	0	0

Source: <http://www.fostatistikbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	11.1	8.8	2.3	5.5	3.2	2.3	5.6	5.6				
2008	5.8	4.9	0.9	3.4	2.5	0.9	2.4	2.4				
2009	21.3	14.6	6.7	9.4	2.7	6.7	11.9	11.9				
2010	8.7	5.4	3.3	8	5	3	0.7	0.4	0.3			
2011	11.1	7.3	3.9	4.5	2.7	1.9	6.6	4.6	2			
2012	23	14.4	8.6	9.7	3.7	6	13.3	10.7	2.6			
2013	8.5	6.3	2.2	6.1	4.9	1.2	2.4	1.4	1			

2014	15.8	8.6	7.3	10.7	4.9	5.8	5.1	3.7	1.5	0	0	0
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Source: <http://www.foustatistikkbanken.no/>

FRISCH: Frisch Centre – Group: Welfare and society

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2008	21	17	4	18	16	2				3	1	2
2009	17	15	2	17	15	2						
2010	18	15	3	18	15	3						
2011	21	18	3	21	18	3						
2012	28	20	8	28	20	8						
2013	24	12	12	23	12	11	1		1			
2014	19	10	9	18	9	9	1	1	0	0	0	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2008	22.5	13.8	8.6	13.3	11.3	2				9.2	2.5	6.7
2009	12.1	9.9	2.2	12.1	9.9	2.2						
2010	13.6	8.3	5.2	13.6	8.3	5.2						

2011	18.6	11.8	6.8	18.6	11.8	6.8							
2012	35.4	15.6	19.8	35.4	15.6	19.8							
2013	31.8	8.8	23	30.8	8.8	22	1		1				
2014	27.6	7.8	19.8	27.3	7.5	19.8	0.4	0.4	0	0	0	0	0

Source: <http://www.foustatistikkbanken.no/>

SNF: Samfunns- og næringslivsforskning AS – Group: Welfare and society

Publications

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	46	37	9	29	21	8	17	16	1			
2008	8	8		8	8							
2009	15	12	3	13	10	3	2	2				
2010	15	8	7	12	7	5	3	1	2			
2011	14	13	1	11	10	1	3	3				
2012	9	7	2	8	6	2	1	1				
2013	12	11	1	12	11	1						
2014	11	9	2	9	8	1	2	1	1	0	0	0

Source: <http://www.foustatistikkbanken.no/>

Points

Year	All pubs			Journal articles			Articles in anthologies			Monographies		
	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2	Sum	L1	L2
2007	34.8	19.7	15.1	26.2	11.7	14.5	8.6	8	0.6			

2008	5.8	5.8		5.8	5.8								
2009	10.3	6.3	4	9.8	5.8	4	0.5	0.5					
2010	18.1	6.4	11.7	16.3	5.9	10.4	1.8	0.4	1.3				
2011	9	7.1	1.9	7.1	5.3	1.9	1.8	1.8					
2012	7.8	4.1	3.8	7.5	3.8	3.8	0.3	0.3					
2013	10.8	7.8	3	10.8	7.8	3							
2014	6.1	4	2.1	5.7	3.8	1.9	0.4	0.2	0.2	0	0	0	

Source: <http://www.fostatistikkbanken.no/>