



Research Mobility in Swedish Higher Education Institutions from 2016 to 2022



STINT

Stiftelsen för internationalisering av
högre utbildning och forskning

The Swedish Foundation for International
Cooperation in Research and Higher Education

R 24:01
ISSN 1404-7209

Preface

The mission of STINT, the Swedish Foundation for International Cooperation in Research and Higher Education, is to internationalise Swedish higher education and research. STINT promotes knowledge and competence development within internationalisation and invests in internationalisation projects proposed by researchers, educators, and leaderships at Swedish universities.

Scientific collaborations, and especially international ones, are well known to enhance the quality of research and the mobility of researchers is an integral part of such collaborations. Researcher mobility typically results in win-win situations, both in the short and long term. On the one hand, an inflow of researchers facilitates the flow of ideas and knowledge to a country, despite some of the researchers only staying for short or infrequent periods. On the other hand, although a country or institution may ‘lose’ some of its research talent elsewhere, many researchers return with enhanced skills. Even permanent migration out of a country is not necessarily negative, as those abroad often maintain strong ties to their previous place of study or employment. Through such connections, researchers can strengthen collaboration ties between countries and institutions and improve the quality of their research.

It is thus of interest to study, understand, and track the mobility of researchers over time. To that end, STINT in 2016 published a study prepared by Elsevier’s Analytical Services on the researcher mobility at Swedish higher education institutions in the period 1995–2016.¹ This report follows up on the previous study, covering the years 2016–2022. Changes since the last report are discussed in Chapter 4.

As the 2016 report, the current study was also conducted by Elsevier’s Analytical Services and the report was written by Elisa Chaudet, Thomas A. Collins, and Jörg Hellwig. The analysis, conclusions, and recommendations are those of Elsevier’s Analytical Services team and STINT does not take a position on these. It is our hope that this report may serve as a reference to the scientific community on researcher mobility in Sweden.

*Dr Andreas Göthenberg,
Executive Director, STINT
February 2024*

¹ STINT. (2016). *Researcher Mobility in Swedish Higher Education Institutions* (R 16:01, ISSN 1404–7209).

Contents

Preface.....	
Contents.....	
Executive Summary.....	
Key Findings	
Key changes from 1996–2015 to 2016–2022.....	
Introduction	
1 Introduction to Methodology	
1.1 Defining researcher mobility groups and indicators.....	
1.2 Defining researcher mobility.....	
2 Overall Researcher Mobility	
2.1 Key findings for the big 10 institutions.....	
2.2 General comparisons of the big 10	
2.3 Overall mobility analysis of the 10 largest institutions by publication volume.....	
3 National & International Mobility.....	
3.1 Key findings for the big 10 institutions.....	
3.2 General comparison of the big 10.....	
3.3 National and international mobility analysis of the 10 largest institutions by publication volume	
4 Comparison of the period of the current report (2023) with the previous report (2016).....	
APPENDIX A: Methodology and Data.....	
A.1 Methodology and rationale	
A.2 Overall researcher mobility charts of HEIs (excluding the big 10)	
A.3 National researcher mobility charts of HEIs (all).....	
A.4 International researcher mobility charts of HEIs (all)	

APPENDIX B: Defining Authors and Mobility.....

Assigning articles

References.....

Executive Summary

In 2016, a report commissioned by the Swedish Foundation for International Cooperation in Research and Higher Education (STINT) examined the extent to which researchers at 28 Swedish higher education institutions (HEIs) are internationally or nationally mobile. To examine and analyse trends, the current report presents an update of the previous report with the more current period 2016–2022. This should allow for some high-level comparisons of possible overall trends in researcher mobility.

Overall, all 28 HEIs display a high degree of mobility—only 24% of all researchers displayed no mobility at all, which in turn means that more than three-quarters of Swedish HEI researchers were mobile. The overall share of sedentary (not mobile) researchers is slightly lower than in the previous report, and it seems that the mobility pattern has moved towards longer-term mobility. Transitory researchers (inflowing or outflowing from the country with stays of less than two years) are the largest group of researchers in both reports, although the share went down from 49% in 1996–2015 to 46% in the period 2016–2022. In contrast to this, the group of outflow researchers rose from 15% to 19% in 2016–2022 and the inflow researcher group declined to 11%.

These changes may not be large, but they could signal some change in the overall landscape. Various studies have shown that mobile researchers tend to be more productive (i.e., publishing more publications on average) and more impactful (i.e., receiving higher citation counts on average), with the highest values for transitory researchers. One possible explanation for this may be that transitory researchers build new connections and networks throughout their mobile phase, while at the same time keeping the ties with their old groups, therefore effectively building collaboration networks. For long-term mobility, the ties to the previous groups may “weaken” slightly, so these indicators drop slightly. However, there is much debate about these effects and the differences between the mobile groups are usually not very strong.

In the case of the Swedish researchers, the citation impact (assessed through the field-weighted citation impact, FWCI), went down overall from the first period (1996–2015) to the second period (2016–2022). Again, this was mainly due to a decline in the FWCI for the transitory researcher group, which went down from 1.98 to 1.86. Since this group of researchers was the largest, the weighted average across all mobility groups was affected the most by this decline. The size of the institutions varied from 200 active researchers for the Stockholm School of Economics (and even fewer for Kristianstad University) up to more than 11,000 for Karolinska Institutet within the current period.

For all institutions, the mobility pattern was similar, with transitory researchers forming the largest group, between 40% (Karlstad University) and 55% (University of Borås). The shares of sedentary researchers were between 16% (Dalarna University) and 30% (Umeå University). All the research groups displayed an FWCI above world level. Even the sedentary researchers, the least impactful group (FWCI = 1.57), have been cited on average 57% more than the world average, which highlights the general quality of Swedish research.

Within the group of the 10 largest institutions (by number of active researchers as well as by number of publications), Karolinska Institutet remains the largest contributor by both measures. It was also the only institution that was able to increase its FWCI from the previous period to the current one. Like the overall trends, amongst the big 10 institutions, the mobility pattern seemed to shift from short-term to long-term mobility with the transitory group declining for some of the institutions and the outflow and inflow groups increasing. Again, this may signal a shift in mobility which should be carefully monitored.

Key Findings

High international mobility

76.2% of the researchers at the 28 HEIs have been mobile.

Transitory mobility is the majority

The largest cohort of researchers are transitory.

Mobile researchers are more impactful

Mobile researchers have a higher FWCI.

Key changes from 1996–2015 to 2016–2022

Higher mobility in the second period

Both outflow and inflow groups in 2016–2022 were larger than in 1996–2015.

Overall lower citation impact in the second period

Overall citation impact for Swedish research output dropped slightly.

Long-term mobility patterns increased citation impact

Citation impact for both outflow and inflow groups increased, but it dropped for transitory researchers.

Only small shifts in institutional rankings

The big 10 institutions (the 10 largest by publication volume), remained the same in both analyses, though the ranked order of institutions shifted.

Karolinska Institutet on the rise

The only institution that raised its overall FWCI was Karolinska Institutet.

Introduction

This report has been commissioned by STINT, The Swedish Foundation for International Cooperation in Research and Higher Education to examine the extent to which researchers at 28 Swedish higher education institutions (HEIs) have international research experience. The report studies the mobility of researchers, answering questions such as whether an institution is attractive to researchers and how various mobility classes contribute to each institution's research output and impact.

To measure researcher mobility, Elsevier's Analytical Services made use of the affiliations registered in author profile data in Scopus. Using publication data from 2016 to 2022, we use the different affiliations with which an author has published during this period to calculate the number of "moves" a researcher makes. For our analyses, we divide researcher mobility into four categories: Sedentary, Inflow, Outflow, and Transitory. These will be further explained in Chapter 1.

For each of the 28 HEIs in this report, three mobility charts were created: an analysis of total researcher mobility, the mobility involving only moves within Sweden, and the mobility of those moving outside of Sweden. To provide further insights into the data, the 10 largest institutions (by publication output) were selected by STINT for written analysis. Through the report, these shall be referred to as the "big 10." From largest to smallest, these are:

- Karolinska Institutet
- Lund University
- Uppsala University
- KTH Royal Institute of Technology
- Stockholm University
- University of Gothenburg
- Chalmers University of Technology
- Linköping University
- Umeå University
- Swedish University of Agricultural Sciences²

² See Appendices for full methodology. See Appendix B for the complete list of HEIs.

Chapter 1: Introduction to Methodology

This chapter explains the different types of researcher mobility analysed in this report, the categories into which researchers are divided based on their publication history, and the indicators used to characterise each category.

1.1 Defining researcher mobility groups and indicators

To define the initial number of researchers in this study, researchers were identified as belonging to a specific higher education institution (HEI) if they listed it as their affiliation on at least one publication (article, review, or conference paper) published across the sources included in Scopus during the period 2016–2022. It is important to note that these thusly defined researchers are not necessarily currently in the employment of their affiliated HEI.

For the analysis in this report, only “active” researchers have been considered. Researchers are considered active if they produced at least one publication in the last 5 years.

To measure researcher mobility, researchers are divided into four main mutually exclusive categories, based on publication affiliation data:

1. **Sedentary:** researchers who have been affiliated with only one institution during the period 2016–2022.
2. **Inflow:** researchers coming to a target institution from another institution. This is divided into:
 - Inflow: researchers who have moved to this institution and remained there.
 - Returnees Inflow: researchers who left this institution for more than two years but then returned.
3. **Outflow:** researchers leaving a target institution for another institution. This is divided into:
 - Outflow: researchers who have left the institution and did not return.
 - Returnees Outflow: researchers who came to the institution from other institutions or countries and stayed for more than two years but then left again.
4. **Transitory:** researchers who stay at the target institution or elsewhere for less than two years before moving to other institutions or countries or returning to the institution, respectively. This is divided into:
 - Mainly with the target institution: researchers for whom the count of

publications with a particular affiliation is greater than the count of publications elsewhere.

- Mainly outside of the target institution: researchers for whom the count of publications with other affiliations is greater than the count of publications with this institution.

For each of these categories, the analysis looks at the following four metrics to answer key questions:

1. **Group size:** what percentage of the institution’s total researchers belong to each category?
2. **Relative Productivity:** how much research is being published by researchers in each category, compared to the institution’s average? This indicator compares the publications per year since the first appearance of each researcher as an author (during the period 2016–2022), relative to all the institution’s researchers in the same period. A value above 1.0 means that a group is relatively more productive than the average researcher, while a value below 1.0 means they are less productive than the average.
3. **Relative Age:** how “senior” are the researchers, comparatively? This is not an actual age in years, but rather the length of their publishing history, as measured by the appearance of their first publication in Scopus. While not a definitive answer, it can be used to gauge whether they are early-career researchers or more established ones. Here a value above 1.0 means that a group is relatively more senior than the average researcher in the institution, while a value below 1.0 means they are more junior than the average.
4. **Field-Weighted Citation Impact (FWCI):** how impactful is the research, as measured by relative citation rates? FWCI is a normalised measure of citation impact that accounts for differences in citation behavior between fields, document types, and publication years. This metric is benchmarked against the global average, set at 1.00, meaning that a FWCI of more than 1.00 indicates that the group’s publications have been cited more than would be expected based on the global average for similar publications. For example, a FWCI of 1.5 would mean that a publication is cited 50% more often, whereas an FCWI of 0.5 would mean that it is cited 50% less often.³

³ See Appendix B for more details on this methodology.

1.2 Defining researcher mobility

In Chapter 3, a distinction is made between researchers who move between institutions within Sweden, and those who move between institutions in Sweden and institutions abroad. However, these are not mutually exclusive. The two types of mobility are defined as follows:

National mobility: researchers who have published in affiliation with two or more Swedish institutions, regardless of publications with non-Swedish institutions.

For example, researchers who published in affiliation with Chalmers University of Technology and with Uppsala University are regarded as showing national mobility, even if they also published in collaboration with an institution abroad.

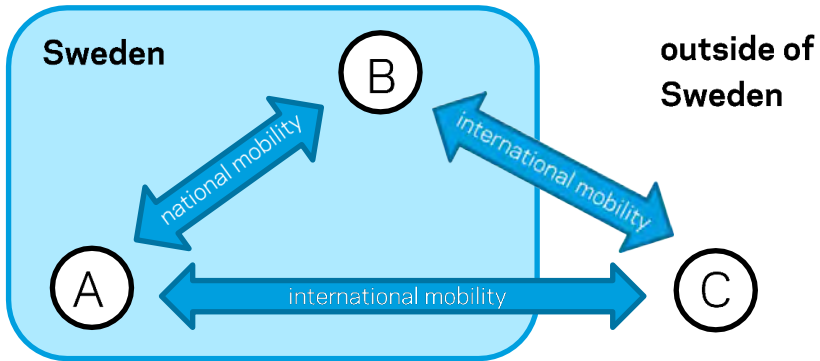
International mobility: authors who have published at least one publication at a Swedish institution and at least one publication at a non-Swedish affiliation, regardless of publications with multiple Swedish institutions.

For example, researchers who published in affiliation with Blekinge Institute of Technology and with an institution abroad are regarded as showing international mobility, even if they also published in affiliation with University West.

Transitory mobility: researchers who spend less than two years at a particular institution before moving on to other institutions or countries or returning to their original institution.

For example, researchers from Lund University who become affiliated with Karolinska Institutet and then after only one year return to Lund University show transitory mobility.

Figure 1.0: Example diagram of national and international mobility



- A researcher who has worked at A and B shows only national mobility: (s)he was affiliated with two Swedish institutions, but no non-Swedish ones.
- A researcher who has worked at A and C shows only international mobility: (s)he was affiliated with a non-Swedish institution, but only one Swedish institution.
- A researcher who has worked at A, B, and C would be counted for both national and international mobility.
- A researcher who has worked only at A, B, or C does not show mobility at all and would not be included in this analysis.

Please note:

- Using the above definitions of national and international mobility means there is overlap between the two groups, as an author may have published in affiliation with multiple affiliations both in Sweden and outside of Sweden.
- The percentages of each mobility category are based on the institution's total number of active researchers. As Chapter 3 excludes sedentary researchers, the percentages in those analyses do not add up to 100%.

In Chapter 3, the groups of researchers showing national or international mobility are then divided into outflow, inflow, and transitory groups to better identify trends and patterns.

- For example, examining all the nationally mobile researchers at Stockholm University, this group is divided into those who left for other Swedish universities (national outflow), those who came from other Swedish universities to Stockholm University (national inflow), and those who left for other Swedish universities but returned within 2 years (national transitory).
- Along the same lines, the group of internationally mobile researchers (as defined above) would be divided into international outflow (those who left

Stockholm University for a university outside Sweden), international inflow (those who came to Stockholm University from a university outside Sweden), and transitory (those who left for an international university but returned within 2 years).

Chapter 2: Overall Researcher Mobility

This chapter examines in depth the overall researcher mobility of 10 Swedish higher education institutions (HEIs), referred to here as the big 10. Researcher mobility is divided into four categories (sedentary, outflow, transitory, inflow) for which the (relative) group size, productivity, seniority, and citation impact are calculated. For another 18 HEIs, mobility charts are provided (see Appendix A).

2.1 Key findings for the big 10 institutions

Transitory mobility is the largest group

For the big 10 HEIs, 46.2% of researchers have transitory mobility. Researchers with transitory mobility form the largest category for all HEIs, averaging nearly half of their total researchers.

Sedentary researchers are least productive and impactful

For the big 10, 23.3% of researchers are sedentary. At all HEIs, researchers who have not moved between institutions are the most junior, the least productive, and have the lowest citation impact.

Highest number of active researchers

During the period 2016–2022, 11,694 different currently active researchers have at least once authored a publication with Karolinska Institutet.

Highest number of publications by active researchers

Karolinska Institutet with 346,778 publications

Most impactful sedentary group

Karolinska Institutet with an FWCI of 1.89

Most impactful outflow group

Stockholm University with an FWCI of 2.18

Most impactful transitory group

Karolinska Institutet with an FWCI of 2.06

Most impactful inflow group

Karolinska Institutet with an FWCI of 2.23

2.2 General comparisons of the big 10

From the 28 Swedish HEIs included in this report, the 10 largest institutions (by overall publication output) have been selected for a detailed analysis. They will be referred to as the “big 10.”

Sedentary

Sedentary researchers comprise between 16% and 30% of researchers at Sweden’s big 10 universities. Among the big 10 universities, Stockholm University holds the lowest percentage, with only 16.1% of researchers classified as sedentary, and Umeå University has the highest percentage, with 30% of researchers falling into the sedentary category. When it comes to citation impact within this category, of the big 10, Chalmers University of Technology records the lowest FWCI value, at 1.43, while Karolinska Institutet demonstrates the highest FWCI value, at 1.89.

Outflow

The outflow category examines the percentage of researchers leaving their institutions for other institutions. The range of outflow researchers across universities in Sweden spans from approximately 15% to 25%. Umeå University has the lowest percentage, with only 15.2% of researchers classified as outflow. In contrast, the University of Gothenburg stands out with the highest percentage, as 25.4% of researchers fall into the outflow category. In terms of citation impact within the outflow category, among the big 10, Chalmers University of Technology records the lowest FWCI value, at 1.51, while Stockholm University has the highest FWCI value at 2.18.

Transitory

The transitory category identifies researchers who make short-term or temporary relocations, moving between institutions with stays of less than two years. Across the big 10 universities in Sweden, transitory researchers constitute between 42% and 49% of researchers. Among the big 10, Linköping University exhibits the lowest percentage, with 42.9% of researchers classified as transitory, and, in contrast, Stockholm University leads the way with the highest percentage, as 48.9% of researchers fall into the transitory category. In terms of citation impact within the transitory category, Chalmers University of Technology records the lowest FWCI value in the big 10 at 1.45, while Karolinska Institutet demonstrates the highest FWCI value of all institutions at 2.06.

Inflow

The inflow category focuses on the percentage of researchers joining institutions from other institutions. Inflow researchers constitute between about 9% and 13% of researchers at the big 10 universities in Sweden. Of the big 10, Lund University exhibits the lowest percentage, with only 9.4% of researchers classified as inflow, and the KTH Royal Institute of Technology achieves the highest percentage, with 12.4% of researchers falling into the inflow category. In terms of citation impact within the inflow category, Chalmers University of Technology records the lowest FWCI value of the big 10 at 1.56, while Karolinska Institutet demonstrates the highest FWCI value of the big 10 at 2.23.

Overall

When considering the overall FWCI across all categories, Chalmers University of Technology has the lowest FWCI value of the big 10 at 1.46, indicating that its researchers' publications have a relatively lower citation impact. In contrast, Karolinska Institutet emerges with the highest FWCI value of all the institutions at 2.06, demonstrating a stronger citation impact across all categories.

Tables 2.1 and 2.2 present the count of total active researchers and the shares for each mobility category for the 28 Swedish institutions included in this analysis.

Table 2.1: The count of total active researchers and the share of the total researchers per mobility category (2016–2022). The big 10 institutions are shaded in blue.

Institution	Active Researchers, 2016–2022	Sedentary %	Outflow %	Transitory %	Inflow %
Karolinska Institutet	11,694	21.0	19.4	48.4	11.2
Lund University	8,540	28.9	15.6	46.1	9.4
Uppsala University	8,372	23.4	18.9	46.7	10.9
KTH Royal Institute of Technology	6,905	16.9	22.6	48.2	12.4
Stockholm University	6,362	16.1	22.7	48.9	12.3
University of Gothenburg	5,944	19.1	25.4	45.1	10.4
Chalmers University of Technology	3,724	22.2	20.1	45.6	12.1
Linköping University	3,522	28.2	19.0	42.9	9.9
Umeå University	3,266	30.0	15.2	45.1	9.7
Swedish University of Agriculture	2,559	27.3	17.0	45.4	10.3
Luleå University of Technology	1,290	29.8	18.0	43.0	9.1
Örebro University	1,198	24.8	18.9	46.7	9.6
Mälardalen University	835	20.4	18.6	49.6	11.3
Linnaeus University	811	14.3	24.9	47.8	12.9
Malmö University	581	23.9	14.8	48.4	12.9
Jönköping University	530	17.7	26.8	45.3	10.2
Karlstad University	495	31.9	16.8	40.0	11.3
Mid Sweden University	463	33.0	17.5	40.8	8.6
Halmstad University	288	18.4	16.7	51.4	13.5
University of Gävle	272	25.7	20.6	43.4	10.3
University of Borås	249	22.9	14.9	54.6	7.6
Dalarna University	243	15.6	23.5	52.3	8.6

University of Skövde	237	30.8	21.9	40.5	6.8
Blekinge Institute of Technology	235	25.1	23.0	39.6	12.3
Södertörn University	221	25.3	16.3	46.2	12.2
University West	216	25.9	14.4	46.8	13.0
Stockholm School of Economics	210	22.4	19.0	51.4	7.1
Kristianstad University	115	27.0	17.4	41.7	13.9

Table 2.2: **The total publications by active researchers and field-weighted citation impact (FWCI) per mobility group (2016–2022). The big 10 institutions are shaded in blue.**

Institution	Publications by active researchers	Sedentary FWCI	Outflow FWCI	Transitory FWCI	Inflow FWCI	Overall FWCI
Karolinska Institutet	346,778	1.89	2.17	2.06	2.23	2.06
Lund University	275,767	1.56	1.77	2.04	1.95	1.80
Uppsala University	222,414	1.53	1.82	1.86	1.81	1.76
KTH Royal Institute of Technology	217,010	1.50	1.95	1.81	1.89	1.78
Stockholm University	180,819	1.65	2.18	1.93	2.03	1.94
University of Gothenburg	141,911	1.55	1.79	2.00	1.86	1.82
Chalmers University of Technology	86,758	1.43	1.51	1.45	1.56	1.46
Linköping University	82,649	1.45	1.81	1.64	1.80	1.63
Umeå University	72,724	1.43	1.95	1.71	1.80	1.67
Swedish University of Agriculture	47,320	1.48	1.59	1.57	1.58	1.55
Örebro University	32,486	1.31	1.89	1.78	1.75	1.65
Luleå University of Technology	30,092	1.13	1.46	1.35	1.75	1.32
Linnaeus University	15,119	1.06	1.35	1.40	1.57	1.34
Mälardalen University	12,703	1.16	1.39	1.46	1.38	1.36
Mid Sweden University	11,627	1.03	1.53	1.59	1.36	1.34
Jönköping University	11,024	1.14	1.50	1.66	1.48	1.46
Malmö University	10,504	1.16	1.56	1.38	1.52	1.36
Karlstad University	9,559	1.25	1.78	1.54	1.35	1.46
University of Gävle	5,756	1.10	1.34	1.24	1.17	1.21
Blekinge Institute of Technology	5,487	1.15	1.41	1.26	1.37	1.26
Halmstad University	5,464	1.28	1.43	1.34	1.26	1.32
Dalarna University	5,430	1.24	1.77	1.55	2.30	1.65
University of Skövde	5,265	1.11	1.62	1.38	1.29	1.31

University of Borås	4,975	1.47	2.76	1.61	1.81	1.68
University West	4,072	1.80	1.49	1.37	1.40	1.50
Stockholm School of Economics	2,983	1.35	2.53	2.10	2.51	2.03
Södertörn University	2,928	1.30	2.24	1.35	1.43	1.46
Kristianstad University	2,051	1.10	1.42	1.26	1.18	1.19

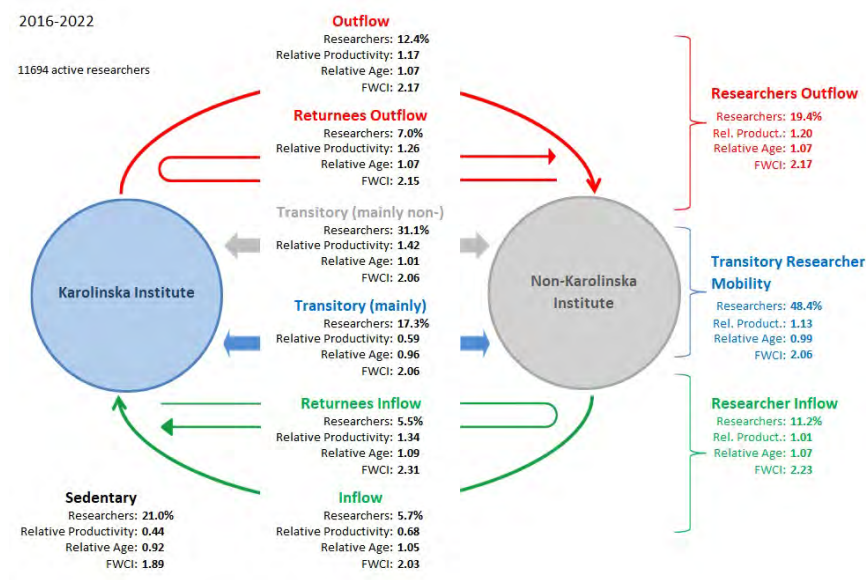
2.3 Overall mobility analysis of the 10 largest institutions by publication volume

In the following section the HEIs are listed from largest to smallest publication output.

Please note: the percentages for each mobility category are based on the institution's total number of active researchers.

Karolinska Institutet (KI)

Figure 2.1: Overall researcher mobility for Karolinska Institutet, 2016–2022.



- Excels in terms of researcher productivity, publication impact, and overall FWCI.
- Ranks highest in FWCI categories among the big 10 institutions, except for outflow researchers, where it ranks second.

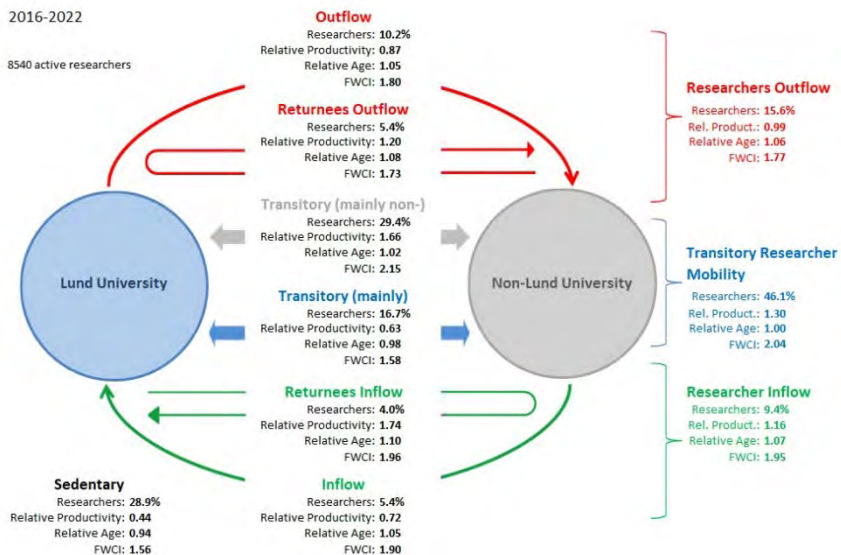
Karolinska Institutet (KI) stands out in several areas compared to the other institutions. It ranks highest in terms of the number of active researchers and the number of publications by active researchers among the big 10 institutions, as well as all the 28 HEIs. Of the big 10, KI has the second-highest percentage (48.4%) of transitory researchers, after Stockholm University.

In terms of the percentage of sedentary researchers, KI has a smaller percentage than most of the big 10, ranking seventh (21%). Sedentary researchers at KI have the highest FWCI (1.89) among the big 10 institutions. This indicates that their publications are cited 89% more than the global average. KI ranks fifth among the big 10 institutions for outflow mobility, with 19.4% of its researchers. Like sedentary researchers and FWCI, despite not having the highest outflow, KI's outflow researchers exhibit the second highest FWCI (2.17) among the big 10 institutions, surpassed only by Stockholm University. Outflow researchers are also the most productive group at KI, with a productivity level that is 20% above the institutional average.

Transitory researchers at KI comprise 48.4% of total researchers, the second-highest percentage among the big 10 institutions, again following Stockholm University. These researchers have a high FWCI, ranking highest (2.06) among the big 10 institutions. When it comes to inflow researchers, KI ranks fourth (11.2%) among the big 10 institutions in proportional size. However, like other groups, inflow researchers at KI exhibit the highest FWCI (2.23) among the big 10 institutions. Overall, researchers at KI achieved the highest FWCI (2.06) again among the big 10 institutions. It ranks first in all FWCI categories except for outflow researchers, where it ranks second after Stockholm University. This indicates that researchers joining KI from other institutions or countries produce research with a high citation impact. This is still true for KI's outflow researchers, even if KI does not rank first.

Lund University (LU)

Figure 2.2: Overall researcher mobility for Lund University, 2016–2022.



- Ranks second in terms of the number of active researchers among the big 10 institutions and excels in certain categories.
- Performs well in terms of FWCI, with sedentary researchers ranking third, transitory researchers ranking second, and inflow researchers ranking third in the big 10.
- The proportion of outflow and inflow researchers is low relative to the other big 10 institutions and the other HEIs.

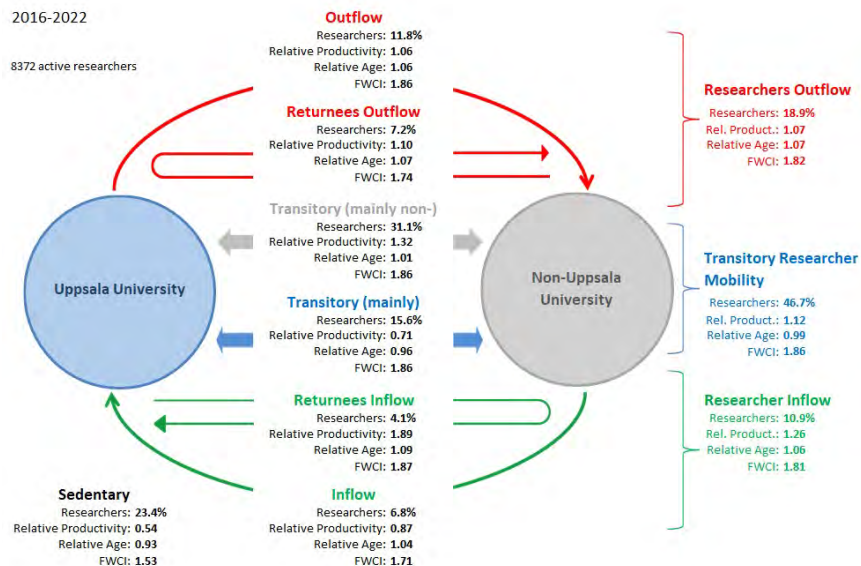
LU holds a prominent position among the big 10 institutions, ranking second in terms of the number of active researchers and publications by active researchers, behind only Karolinska Institutet. When examining sedentary researchers, LU stands in second place (28.9%) among the big 10 institutions. However, sedentary researchers exhibit the lowest productivity at LU, 56% below the institutional average. Nevertheless, in the big 10, LU's sedentary researchers rank third in terms of FWCI (1.56). For outflow researchers, LU not only has one of the smallest shares among the big 10 (15.6%), but among the smallest for all the HEIs (24th out of 28). The FWCI of this group at LU ranks eighth (1.77) among the big 10 institutions.

Among the big 10 institutions, LU has the fifth-largest proportion (46.1%) of transitory researchers. This group of researchers displays the highest

productivity at LU, 30% above the average. Furthermore, the transitory group's FWCI (2.04) is the second highest of the big 10 institutions, only exceeded by Karolinska Institutet. For inflow researchers, LU has the smallest proportion (9.4%) among the big 10 institutions and 22nd among the 28 HEIs. Regardless, inflow researchers at LU still exhibit a relatively high FWCI, ranking third (1.95) among the big 10 institutions. These researchers are also the most senior cohort, 7% above the average. Overall, LU ranks fourth in terms of overall FWCI (1.80) among the big 10 institutions.

Uppsala University (UU)

Figure 2.3: Overall researcher mobility for Uppsala University, 2016–2022.



- Ranks high in number of active researchers and publications by active researchers, holding the third position among the big 10 institutions.
- Ranks moderately in terms of FWCI.

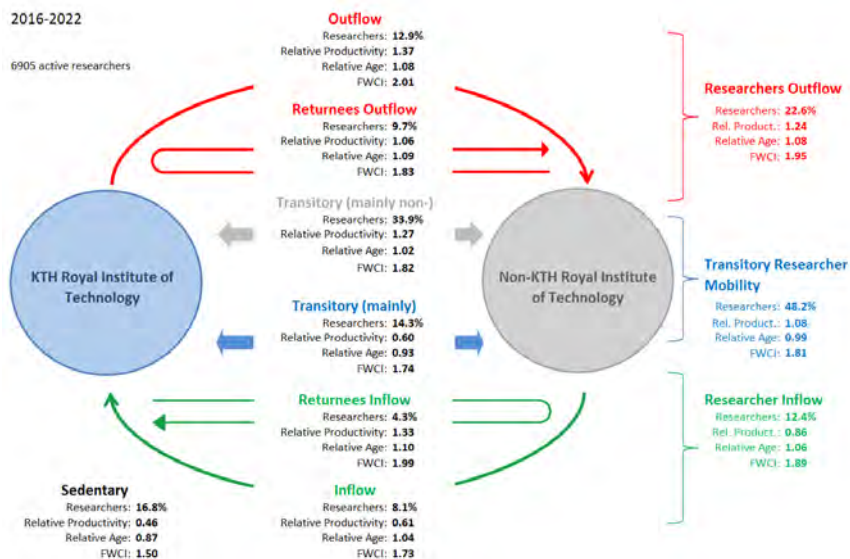
UU ranks highly among the big 10 institutions, placing third in terms of the number of active researchers and publications by active researchers. In terms of overall FWCI, UU ranks sixth (1.76) among the big 10 institutions. UU's share of sedentary researchers (23.4%) ranks fifth among the big 10 institutions. However, this group of researchers exhibits the lowest productivity at UU, 46% below the institutional average. The FWCI of the sedentary group is 1.53, fifth among the big 10 institutions.

Regarding outflow researchers, UU ranks seventh (18.9%) in relative size of this group among the big 10 institutions. This group of researchers is the most senior at UU, 7% above the average. The FWCI of UU's outflow group ranks fifth (1.82) among the big 10 institutions. UU's share of transitory researchers is moderately high, in fourth position among the big 10 (46.7%), and the FWCI for that group is fifth (1.86) among the big 10.

Regarding inflow researchers, UU ranks fifth in the proportion of researchers in this group (10.9%) among the big 10 institutions. This group of researchers is the most productive at UU, 26% above the average.

KTH Royal Institute of Technology (KTH)

Figure 2.4: Overall researcher mobility for the KTH Royal Institute of Technology, 2016–2022.



- Ranks moderately in terms of number of active researchers among the big 10 institutions and exhibits strengths in certain categories.
- Excels in FWCI of publications by outflow researchers, ranking third (tied with Umeå University at 1.95) among the big 10 institutions.
- Compared to the other big 10 institutions it has a relatively low share of sedentary researchers and a relatively high share of transitory researchers.

KTH ranks fourth among the big 10 institutions in terms of the number of active researchers and publications by active researchers. In terms of FWCI, KTH ranks fifth among the big 10. KTH's share of sedentary researchers is one of the smallest among the big 10 institutions (16.9%, ranking ninth). This group of researchers exhibits the lowest productivity at KTH, 54% below the institutional average. In terms of FWCI for sedentary researchers, KTH ranks sixth (1.50) of the big 10 institutions.

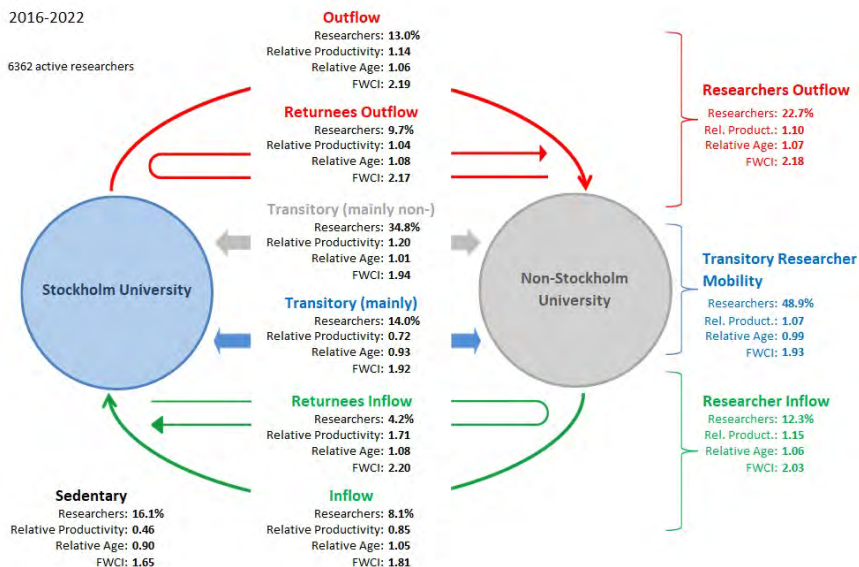
The size of the share of outflow researchers at KTH (22.6%) is the third largest among the big 10 institutions. This group of researchers also has the highest productivity (1.24) at KTH. In addition to this, outflow researchers are the most senior at KTH.

Among the big 10 institutions, KTH has the third-largest proportion (48.2%)

of transitory researchers. In terms of FWCI, for this group, KTH comes in sixth (1.81) among the big 10 institutions. In comparison, for inflow researchers, KTH has the largest proportion (12.4%) of the big 10 institutions. KTH ranks fourth among the big 10 institutions in terms of inflow FWCI (1.89). Overall, KTH ranks fifth in terms of FWCI (1.78) among the big 10 institutions.

Stockholm University (SU)

Figure 2.5: Overall researcher mobility for Stockholm University, 2016–2022.



- Excels in sedentary and inflow FWCI, ranking second among the big 10 institutions.
- Outflow researchers have the highest FWCI among the big 10 institutions.

SU ranks fifth in terms of the number of active researchers and publications by active researchers. When it comes to sedentary researchers, SU has the smallest proportion (16.1%) among the big 10 institutions. This group of researchers at SU exhibits the lowest productivity, 54% below the institutional average. For FWCI, SU follows Karolinska Institutet, coming in second among the big 10 institutions for sedentary FWCI (1.65). In terms of overall FWCI, SU ranks second (1.94) after Karolinska Institutet (2.06) among the big 10 institutions and third among the 28 HEIs.

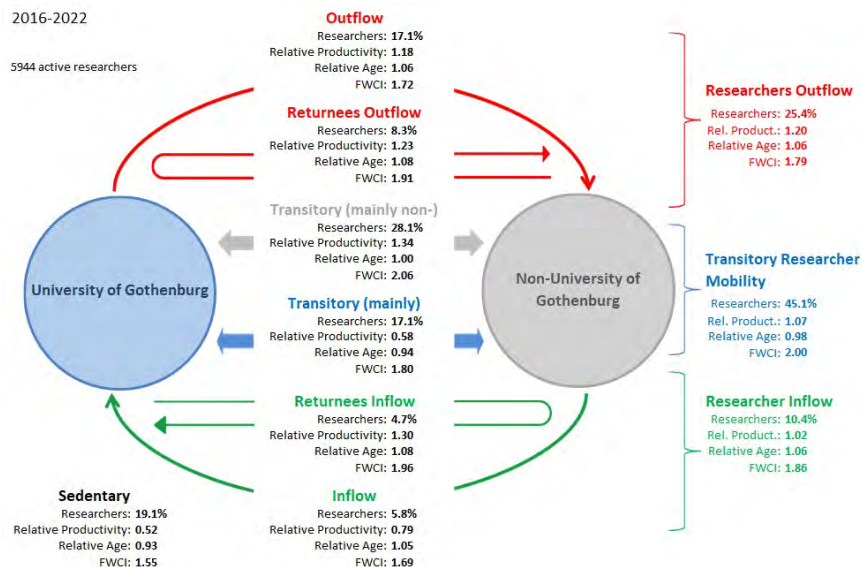
SU has the second-largest proportion of outflow researchers (22.7%) among the big 10 institutions, after University of Gothenburg. This group of researchers is also the most senior at SU, 7% above the average. Outflow researchers at SU also have the highest FWCI (2.18) among the big 10 institutions. Among the 28 HEIs, SU ranks fourth in terms of FWCI for outflow researchers.

SU has the largest proportion of transitory researchers among the big 10, with

48.9% of its researchers falling into this category. However, in terms of FWCI, this group at SU ranks fourth (1.93) among the big 10 institutions. When looking at inflow researchers, SU ranks second in relative size of this group (12.3%) among the big 10 institutions, falling behind KTH Royal Institute of Technology. Among the 28 HEIs, SU ties for seventh with Blekinge Institute of Technology in this regard. Inflow researchers are also the most productive at SU, 15% above the institutional average. Overall, SU ranks second in terms of overall FWCI among the big 10 institutions, with a value of 1.94, following Karolinska Institutet. Among the 28 HEIs, SU ranks third in terms of overall FWCI.

University of Gothenburg (GU)

Figure 2.6: Overall researcher mobility for Gothenburg University, 2016–2022.



- Produces a moderate publication output compared to the other universities in the big 10.
- The high FWCI of GU's transitory researchers contributes to GU's high overall FWCI (ranking third among the big 10).

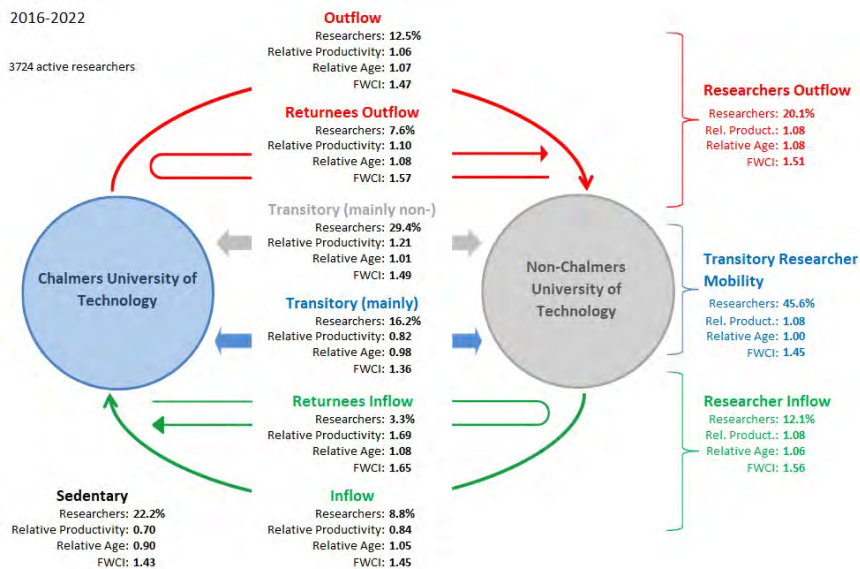
GU is ranked sixth among the big 10 universities in terms of the number of active researchers and publications by active researchers. When it comes to sedentary researchers, GU has one of the smallest shares among the big 10 universities, with 19.1% of its researchers so categorised. The FWCI of this group is moderate, placing fourth among the big 10 with a value of 1.55. GU also has the highest percentage of outflow researchers among the big 10 universities, at 25.4%. Furthermore, this group scores highest in productivity at GU, achieving a value of 1.20. However, in terms of FWCI, the university's outflow group ranks seventh among the big 10 with a value of 1.79.

The university ranks eighth among the big 10 universities (tying with Umeå University) in percentage of researchers with transitory mobility; only 45.1% of its researchers are transitory. However, this group demonstrates a remarkable performance in FWCI, ranking third among the big 10 for transitory researchers with a score of 2.00. This shows the impact and influence of the group's research. GU's share of inflow researchers is

moderate among the big 10 universities, with 10.4% of its researchers categorised as inflow. Additionally, the FWCI of GU's inflow researchers ranks fifth among the big 10 with a value of 1.86. For overall citation impact, GU ranks third among the big 10 universities, with an FWCI of 1.82.

Chalmers University of Technology (CTH)

Figure 2.7: Overall researcher mobility for Chalmers University of Technology, 2016–2022.



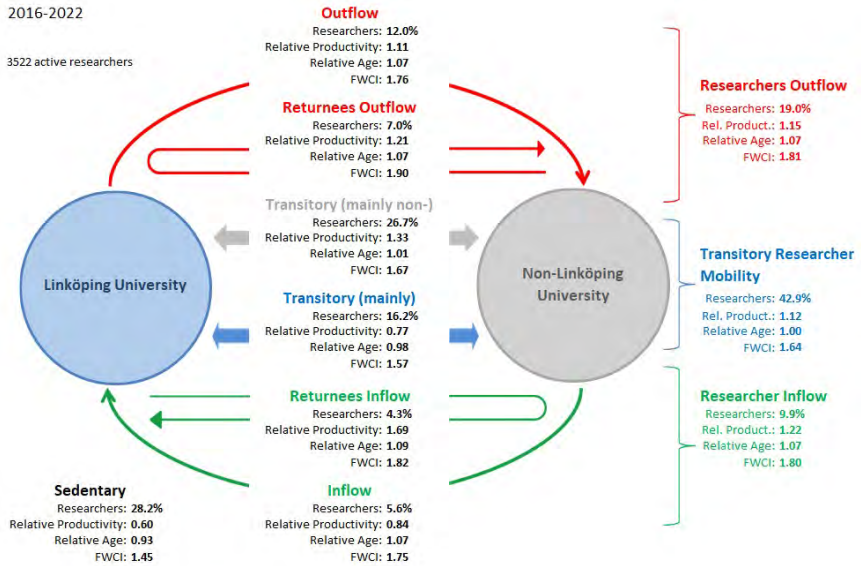
- Last among the big 10 and 15th among the 28 HEIs in terms of overall FWCI (1.46).

CTH is seventh among the big 10 universities in terms of the number of active researchers and publications by active researchers. CTH ranks the lowest of the big 10 in terms of citation impact, ranking last in all FWCI categories. Among the big 10, CTH ranks sixth for sedentary researchers, with 22.2% falling into this category. Sedentary researchers at CTH also have a FWCI of 1.43, which is the lowest among the big 10.

CTH performs in the midrange for outflow research mobility, ranking fourth among the big 10 universities with 20.1% of researchers. This group is also the most senior at the university. However, the university's outflow FWCI ranking is the lowest among the big 10, with a value of 1.51. In terms of transitory mobility, CTH ranks sixth of the big 10, with 45.6% of its researchers being a part of this group. The university's transitory FWCI ranking is the lowest among the big 10, with a value of 1.45. CTH ranks third among the big 10 universities for inflow researchers, with 12.1%. However, the university's inflow FWCI ranking is again the lowest among the big 10, with a value of 1.56.

Linköping University (LiU)

Figure 2.8: Overall researcher mobility for Linköping University, 2016–2022.



- Ranks in the middle or lower among the big 10 institutions in most categories.
- Has a larger proportion of sedentary researchers, and a smaller proportion of transitory researchers, compared to other universities in the big 10.

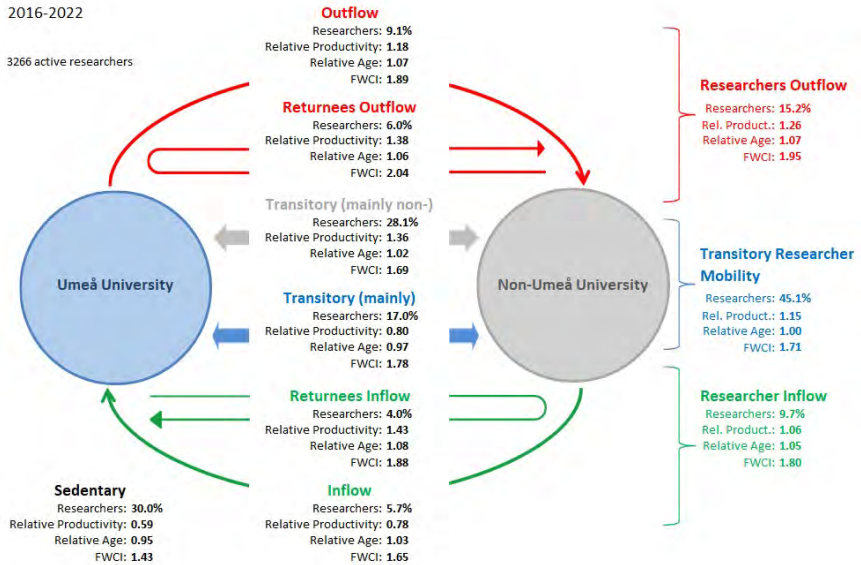
LiU ranks eighth of the big 10 institutions in terms of the number of active researchers and publications by active researchers. At LiU, the share of sedentary researchers is third in size (28.2%) among the big 10 institutions. However, sedentary researchers exhibit the lowest productivity at LiU, 40% below the institutional average, and rank eighth in FWCI (1.45) among the big 10 institutions.

Outflow researchers make up 19% of LiU's researchers, and these researchers are also one of the most senior groups at LiU. This group ranks sixth for FWCI (1.81) among the big 10 institutions. Among the big 10 institutions, LiU has the lowest proportion of transitory researchers, with 42.9%. This indicates that researchers at LiU are more likely to stay at the institution or have limited mobility compared to other universities in Sweden. Furthermore, LiU transitory researchers rank eighth in FWCI (1.64) among the big 10 institutions.

Just under 10% of LiU's researchers fall into the inflow category, a relatively small share among the big 10 institutions. However, inflow researchers display the highest productivity (1.22) of the groups at LiU and have an FWCI of 1.80. They are tied with outflow researchers as the most senior group, 7% above the institutional average. Overall, LiU ranks eighth in terms of FWCI (1.63) among the big 10 institutions, showing that the university has a lower citation impact than the other institutions in the analysis.

Umeå University (UmU)

Figure 2.9: Overall researcher mobility for Umeå University, 2016–2022.



- Ranks low among the big 10 institutions in number of active researchers and publications, holding the ninth position.
- Has the lowest FWCI for sedentary researchers among the big 10, and its transitory, inflow, and overall FWCI are low compared to most big 10 institutions.
- Ties with KTH Royal Institute of Technology for the third-highest outflow FWCI among the big 10 institutions.

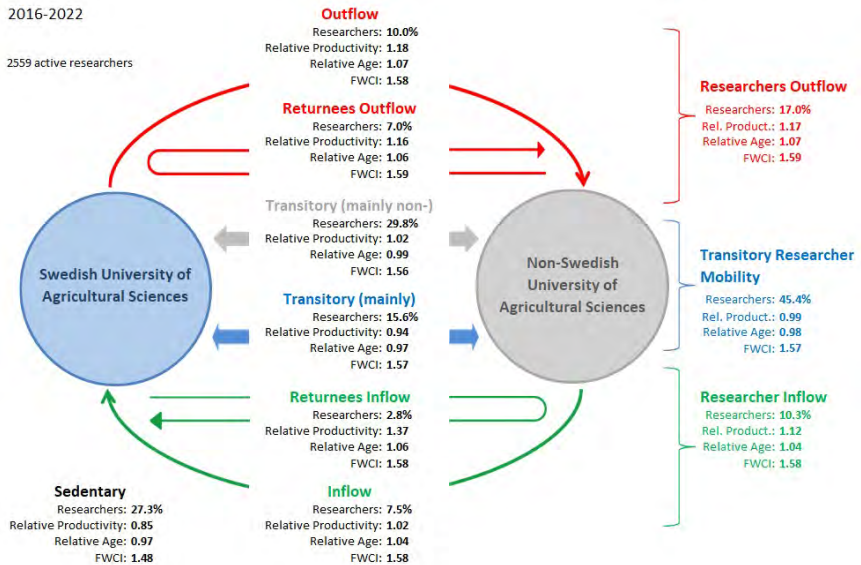
UmU holds a lower position among the big 10 institutions, ranking ninth in number of active researchers and publications by active researchers. Overall, UmU ranks seventh for overall FWCI among the big 10 institutions, with a value of 1.67. The university has the largest proportion of sedentary researchers (30%) among the big 10 institutions, and its sedentary group exhibits the lowest productivity at UmU, 41% below the institutional average. UmU's sedentary group has an FWCI of 1.43, the lowest sedentary FWCI among the big 10 institutions, and ranking 12th among the 28 HEIs.

As might be expected for an institution with a large proportion of sedentary researchers, UmU has smaller proportions of outflow, inflow, and transitory

researchers than the other big 10 institutions. In terms of outflow researchers, UmU has the smallest proportion (15.2%) among the big 10 institutions. However, this group of researchers is the most productive at UmU, 26% above the average. They are also the most senior group at UmU, 7% above the average. Comparing the FWCI of outflow researchers, UmU ranks third among the big 10 institutions, tying with the KTH Royal Institute of Technology, with a value of 1.95. Just over 45% of UmU's researchers are categorised as transitory, a share that ranks eighth (tying with the University of Gothenburg) among the big 10. The transitory FWCI is 1.71, ranking UmU seventh (1.71) among the big 10 institutions. Only 9.7% of UmU's researchers are categorised as inflow, ranking the university ninth among the big 10 institutions for the relative size of that category. In terms of inflow FWCI, UmU ranks seventh (1.80) among the big 10 institutions.

Swedish University of Agricultural Sciences (SLU)

Figure 2.10: Overall researcher mobility for Swedish University of Agricultural Sciences, 2016–2022.



- Has the least number of active researchers among the big 10 institutions.
- Ranks ninth in terms of FWCI for outflow, transitory, inflow, and overall categories.
- Ranks seventh among the big 10 institutions for sedentary FWCI.
- Ranks lower compared to the other big 10 institutions in terms of size and FWCI.

SLU ranks last among the big 10 in terms of number of active researchers and publications by active researchers. Nevertheless, SLU has the fourth-largest share of sedentary researchers among the big 10 institutions, comprising 27.3% of all SLU's researchers. In terms of these sedentary researchers' FWCI, SLU ranks seventh (1.48) among the big 10 institutions.

SLU ranks eighth among the big 10 institutions in the relative size of its outflow share, with 17% of its researchers in that group. This group of researchers is also the most senior at SLU, 7% above the institutional average. In terms of productivity, outflow researchers at SLU have a value of 1.17, making them the most productive group at SLU. However, among the big 10 institutions, SLU ranks ninth in terms of FWCI for research outflow mobility, with a value of 1.59. Among the 28 HEIs, SLU ranks 16th in terms of FWCI

for outflow researchers.

Of SLU's researchers, 45.4% show transitory mobility, a rank of seventh for SLU compared to the big 10. In terms of transitory FWCI, SLU ranks ninth (1.57) among the big 10 institutions. Researchers with inflow mobility are 10.3% of SLU's researchers. For inflow FWCI, SLU is ninth of the big 10, and 14th of the 28 HEIs, with a value of 1.58. SLU also ranks ninth (1.55) in terms of overall FWCI among the big 10 institutions and 13th among the 28 HEIs.

Chapter 3: National & International Mobility

This chapter analyses only those researchers who show national and/or international mobility. Hence, there is no “sedentary” category. As defined in Section 1.2, researchers showing national mobility are those who have published in affiliation with at least two Swedish institutions. Researchers identified as internationally mobile are those who have published at least once with a Swedish affiliation, and at least once with a non-Swedish affiliation. Researchers classified as showing either national or international mobility are further divided into outflow, inflow, and transitory groups to give greater insight into mobility patterns.

3.1 Key findings for the big 10 institutions

More than a third of researchers show national mobility

On average, 37% of researchers at the big 10 institutions show national mobility.

Highest national outflow FWCI

Stockholm University (2.17)

Highest national inflow FWCI

Lund University (2.12)

Highest national overall FWCI

Stockholm University (1.99)

More than half of researchers show international mobility

On average, 51% of researchers at the big 10 institutions show international mobility.

Highest international outflow FWCI

Karolinska Institutet (2.31)

Highest international inflow FWCI

Karolinska Institutet (2.38)

Highest national overall FWCI

Karolinska Institutet (2.19)

3.2 General comparison of the big 10

National and international outflow

In the national outflow category, for big 10 institutions, the percentage of researchers moving to another Swedish institution during the time period studied falls between 19% and 35%. The Swedish University of Agriculture has the lowest percentage of researchers moving to other Swedish universities, only 19.9%. On the other hand, the University of Gothenburg stands out with the highest percentage, as 34.5% of its researchers fall into this category. Within the national outflow category, Chalmers University of Technology records the lowest citation impact, with an FWCI of 1.42, while Stockholm University demonstrates the highest, with an FWCI of 2.20.

Within the international outflow category, the percentage of researchers leaving Swedish institutions to pursue opportunities abroad ranges from 18% to 23%. Umeå University represents the lowest percentage, with 18% of researchers categorised as international outflow. In contrast, the KTH Royal Institute of Technology stands out with the highest percentage, as 23% of researchers fall into this category. When examining citation impact, Chalmers University of Technology records the lowest FWCI for international outflow, at 1.59, while the Karolinska Institutet demonstrates the highest FWCI, at 2.31.

National and international transitory mobility

The national transitory category explores the percentage of researchers in transition within Sweden, moving between institutions within the country. Across universities, the range of transitory researchers falls between 52% and 66%. The University of Gothenburg exhibits the lowest percentage, with 52% of its researchers classified as national transitory. In contrast, the Swedish University of Agriculture leads the way with the highest percentage, as 65.1% of researchers fall into this category. In terms of citation impact within the national transitory category, Chalmers University of Technology records the lowest FWCI value at 1.43, while Stockholm University demonstrates the highest FWCI value at 1.99.

The international transitory category indicates the percentage of researchers in transition between different international institutions. Across universities, the range of transitory researchers falls between 60% and 68%. Chalmers University of Technology had the smallest ratio of international transitory researchers (60.4%) while Lund University had the largest (67.9%). In terms of citation impact within the international transitory category, Chalmers University of Technology records the lowest FWCI value at 1.49, while the

University of Gothenburg demonstrates the highest FWCI value at 2.33.

National and international inflow

The national inflow category focuses on the percentage of researchers joining institutions within Sweden. The range of inflow researchers across universities spans from about 11% to 17%. Chalmers University of Technology exhibits the lowest percentage, with only 11.6% of researchers classified as national inflow. Conversely, the Karolinska Institutet achieves the highest percentage, with 16.7% of researchers falling into this category. In terms of citation impact within the national inflow category, Chalmers University of Technology records the lowest FWCI value at 1.55, while Lund University demonstrates the highest FWCI value at 2.12.

The international inflow category focuses on the percentage of researchers coming from institutions outside Sweden. The range of inflow researchers across universities spans from about 13% to 19%. The University of Gothenburg exhibits the lowest percentage, with only 13.5% of researchers classified as international inflow. In contrast, Chalmers University of Technology achieves the highest percentage, with 18.1% of researchers falling into this category. In terms of citation impact within the international inflow category, Chalmers University of Technology records the lowest FWCI value at 1.59, while the Karolinska Institutet demonstrates the highest FWCI value at 2.38.

Overall

When considering the overall FWCI for researchers with national mobility, Chalmers University of Technology maintains the lowest FWCI value at 1.43. In contrast, Stockholm University emerges with the highest FWCI value at 1.99, demonstrating the strongest overall citation impact of the big 10.

When considering the overall FWCI for researchers with international mobility, Chalmers University of Technology maintains the lowest FWCI value at 1.51. On the other hand, the Karolinska Institutet emerges with the highest FWCI value at 2.19, signifying the strongest overall citation impact of the big 10.

Tables 3.1 to 3.4 present the count of total active researchers who show national and international mobility (i.e., “sedentary” researchers are excluded) and the shares for each mobility category for the 28 Swedish institutions included in this analysis.

Table 3.1: The count of total active researchers who show national or international mobility, and the share of this total per mobility category nationally (2016–2022). The big 10 institutions are shaded in blue.

Institution	Active Researchers, 2016–2022	Outflow %	Transitory %	Inflow %
Karolinska Institutet	4,056	25.50	57.80	16.70
Stockholm University	3,413	24.30	63.70	13.60
Uppsala University	2,948	23.10	62.40	14.50
University of Gothenburg	2,907	34.50	52.00	13.50
KTH Royal Institute of Technology	2,646	25.40	59.50	15.00
Lund University	2,259	23.10	62.90	14.10
Linköping University	1,271	27.30	60.10	12.60
Chalmers University of Technology	1,260	26.20	62.20	11.60
Umeå University	1,054	20.90	64.70	14.40
Swedish University of Agriculture	723	19.90	65.10	14.90
Örebro University	573	23.20	63.50	13.30
Linnaeus University	458	25.50	60.30	14.20
Luleå University of Technology	346	23.40	65.30	11.30
Jönköping University	292	30.10	57.20	12.70
Malmö University	288	17.70	65.60	16.70
Mälardalen University	254	26.40	58.70	15.00
Karlstad University	162	24.70	61.10	14.20
Dalarna University	161	28.00	63.40	8.70
Mid Sweden University	160	28.80	60.60	10.60
University of Gävle	156	25.60	59.60	14.70
Halmstad University	150	18.00	68.70	13.30
Södertörn University	123	22.00	61.80	16.30

University of Borås	117	21.40	69.20	9.40
University of Skövde	112	30.40	60.70	8.90
University West	102	19.60	63.70	16.70
Blekinge Institute of Technology	90	28.90	52.20	18.90
Stockholm School of Economics	85	20.00	67.10	12.90
Kristianstad University	63	25.40	55.60	19.00

Table 3.2: **The total publications by active researchers who show national or international mobility, and field-weighted citation impact (FWCI) per mobility group nationally (2016–2022). The big 10 institutions are shaded in blue.**

Institution	Publications by active researchers	Outflow FWCI	Transitory FWCI	Inflow FWCI	Overall FWCI
Karolinska Institutet	114,121	2.00	1.86	2.11	1.94
KTH Royal Institute of Technology	83,085	1.94	1.83	2.02	1.87
Uppsala University	78,460	1.76	1.86	1.85	1.82
University of Gothenburg	69,324	1.75	1.79	1.94	1.78
Lund University	66,047	1.68	1.66	2.12	1.72
Stockholm University	65,713	2.17	1.94	1.99	1.99
Chalmers University of Technology	30,653	1.42	1.43	1.55	1.43
Linköping University	30,222	1.64	1.59	1.76	1.62
Umeå University	26,923	2.08	1.78	1.98	1.88
Örebro University	16,379	1.86	1.82	1.75	1.80
Swedish University of Agriculture	13,261	1.56	1.56	1.60	1.56
Luleå University of Technology	8,084	1.32	1.30	2.53	1.43
Linnaeus University	7,922	1.30	1.41	1.52	1.37
Mälardalen University	6,224	1.36	1.35	1.24	1.34
Jönköping University	5,636	1.35	1.56	1.45	1.42
Malmo University	5,304	1.55	1.30	1.49	1.35
Mid Sweden University	4,975	1.38	1.62	1.51	1.45
Dalarna University	3,917	1.81	1.59	2.73	1.78
University of Gävle	3,468	1.35	1.26	1.18	1.24
Karlstad University	3,101	1.53	1.63	1.29	1.52
University of Skövde	2,667	1.49	1.36	1.18	1.37
Halmstad University	2,531	1.48	1.18	1.21	1.22

Blekinge Institute of Technology	2,218	1.23	1.35	1.51	1.33
University of Borås	2,092	1.55	1.31	1.97	1.43
University West	1,874	1.58	1.26	1.53	1.34
Södertörn University	1,595	1.45	1.30	1.41	1.33
Stockholm School of Economics	1,381	3.48	1.90	2.43	2.21
Kristianstad University	1,208	1.40	1.29	1.14	1.20

Table 3.3: **The count of total active researchers who show national or international mobility, and the share of the total researchers per mobility category internationally (2016–2022). The big 10 institutions are shaded in blue.**

Institution	Active Researchers, 2016–2022	Outflow %	Transitory %	Inflow %
Karolinska Institutet	6,242	19.70	65.50	14.80
Lund University	4,454	18.20	67.90	13.90
Uppsala University	4,295	21.10	64.70	14.20
KTH Royal Institute of Technology	3,876	23.00	62.00	14.90
Stockholm University	3,413	22.70	63.70	13.60
University of Gothenburg	2,438	20.80	65.70	13.50
Chalmers University of Technology	1,930	21.60	60.40	18.10
Linköping University	1,558	20.70	63.00	16.30
Umeå University	1,532	18.00	67.70	14.40
Swedish University of Agriculture	1,307	22.30	64.10	13.60
Luleå University of Technology	647	23.30	62.80	13.90
Örebro University	462	20.30	67.70	11.90
Linnaeus University	324	26.20	56.50	17.30
Mälardalen University	213	15.50	68.50	16.00
Malmö University	211	16.60	67.80	15.60
Karlstad University	206	20.90	62.10	17.00
Jönköping University	188	28.70	60.60	10.60
Mid Sweden University	187	18.70	66.30	15.00
Halmstad University	110	19.10	62.70	18.20
University of Borås	104	11.50	76.00	12.50
Stockholm School of Economics	103	22.30	68.90	8.70
Blekinge Institute of Technology	102	27.50	56.90	15.70

University of Skövde	75	24.00	65.30	10.70
Dalarna University	74	16.20	74.30	9.50
University West	73	15.10	65.80	19.20
University of Gävle	67	23.90	64.20	11.90
Södertörn University	62	14.50	72.60	12.90
Kristianstad University	25	16.00	64.00	20.00

Table 3.4: The total publications by active researchers who show national or international mobility, and field-weighted citation impact (FWCI) per mobility group internationally (2016–2022). The big 10 institutions are shaded in blue.

Institution	Publications by active researchers	Outflow FWCI	Transitory FWCI	Inflow FWCI	Overall FWCI
Karolinska Institutet	250,209	2.31	2.15	2.38	2.19
Lund University	209,843	1.83	2.16	1.94	2.00
Uppsala University	152,932	1.86	1.89	1.86	1.87
KTH Royal Institute of Technology	152,363	1.96	1.87	1.94	1.87
Stockholm University	128,437	2.20	1.99	2.17	2.04
University of Gothenburg	81,121	1.87	2.23	1.99	2.10
Chalmers University of Technology	55,990	1.59	1.49	1.59	1.51
Linköping University	51,049	1.99	1.70	1.90	1.78
Umeå University	45,062	1.87	1.72	1.80	1.74
Swedish University of Agriculture	26,891	1.61	1.58	1.61	1.59
Luleå University of Technology	19,827	1.53	1.40	2.03	1.45
Örebro University	19,551	1.93	1.89	1.92	1.84
Linnaeus University	7,948	1.40	1.52	1.80	1.52
Mid Sweden University	7,838	1.67	1.84	1.40	1.70
Mälardalen University	6,962	1.47	1.57	1.59	1.52
Jönköping University	5,752	1.70	2.02	1.50	1.82
Karlstad University	5,621	2.04	1.47	1.37	1.57
Malmö University	5,237	1.58	1.46	1.84	1.53
Blekinge Institute of Technology	3,150	1.66	1.29	1.45	1.35
Halmstad University	2,960	1.38	1.56	1.31	1.48
Dalarna University	2,733	1.59	1.80	1.50	1.73
University of Borås	2,625	6.43	1.80	1.88	2.01

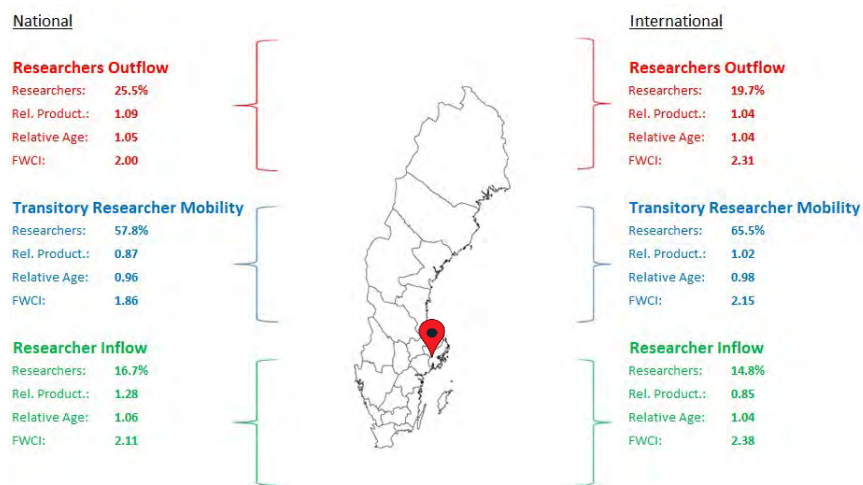
University of Gävle	2,415	1.27	1.22	1.24	1.30
University of Skövde	2,391	1.93	1.45	1.43	1.47
University West	1,819	1.26	1.49	1.62	1.49
Stockholm School of Economics	1,739	2.18	2.27	2.70	2.25
Södertörn University	1,179	5.13	1.49	1.60	1.85
Kristianstad University	583	1.54	1.40	1.53	1.39

3.3 National and international mobility analysis of the 10 largest institutions by publication volume

Please note: the percentages for each mobility category are based on the institution's total number of active researchers. As sedentary researchers are excluded and national and international are not mutually exclusive, the percentages do not add up to 100%.

Karolinska Institutet (KI)

Figure 3.1: National and international researcher mobility at Karolinska Institutet, 2016–2022.



- Most productive category of researchers at KI: national inflow researchers (1.28)
- Least productive group at KI: international inflow researchers (0.85)
- Highest FWCI among groups at KI: international inflow researchers (2.38)

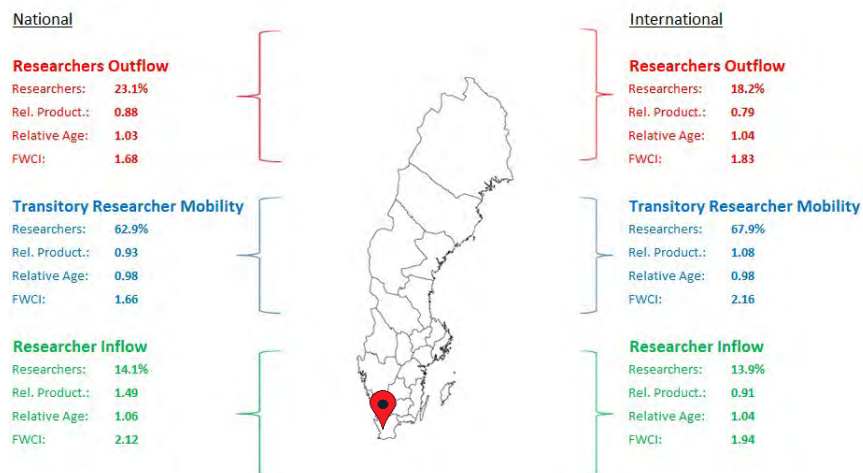
Of KI's nationally mobile researchers, the majority (57.8%) are transitory, a share that is still one of the smallest (ranking ninth) among the big 10 institutions. However, the FWCI of this group ranks second among the big 10 universities, showing high research impact. KI's national inflow group (researchers moving from other Swedish universities to KI) consists of 16.7% of KI's nationally mobile researchers and is the largest national inflow share of any big 10 institution, indicating how many researchers wish to come to KI.

For internationally mobile researchers, KI ranks eighth in terms of outflow size, meaning that a smaller proportion among the big 10 (19.7%) of researchers leave the institution. The FWCI of this group is the highest of the big 10, indicating exceptional research impact among researchers departing for other countries. In terms of inflow from other countries, KI ranks fourth for share size, with 14.8% of its internationally mobile researchers joining the institution. Most notably, the inflow FWCI is the highest among the big 10 universities. KI also excels in terms of the overall number of active researchers and publications by active researchers, with the most among the big 10 universities. This highlights KI's strong research capacity and output, emphasizing its position as a leading institution of higher education in Sweden.

In general, national inflow researchers exhibit the highest research productivity between the mobility groups at KI. The outflow, inflow, and overall, of international researchers rank exceptionally highly in terms of FWCI. Overall, KI stands out with a significantly high number of active researchers and publications.

Lund University (LU)

Figure 3.2: National and international researcher mobility at Lund University, 2016–2022.



- Most productive category of researchers at LU: national inflow researchers (1.49)
- Least productive category of researchers at LU: international outflow researchers (0.79)
- Highest FWCI among groups at LU: international transitory researchers (2.16)

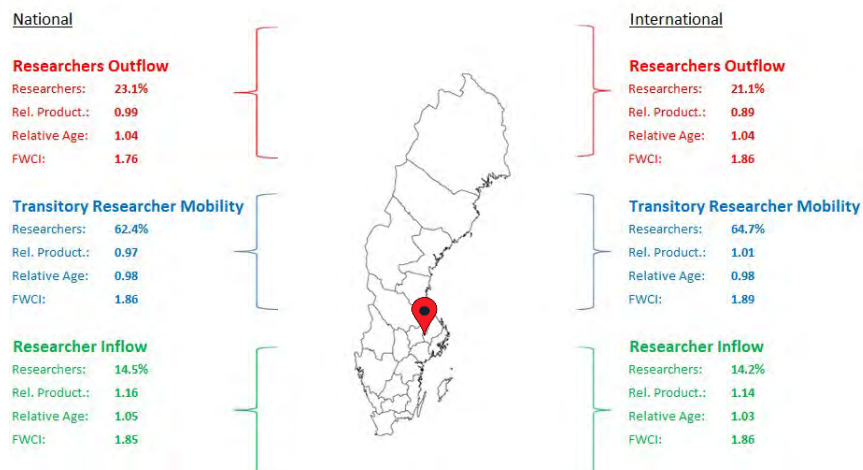
LU ranks sixth among the big 10 institutions for the relative size of its national inflow group, with 14.1% of nationally mobile researchers joining the institution. The inflow FWCI, however, ranks first among the big 10 universities, suggesting relatively high research impact for incoming national researchers. Turning to international researchers, LU ranks ninth in relative outflow size, with 18.2% of researchers leaving the university. Its outflow FWCI ranks eighth among the big 10 universities, indicating lower citation impact among departing international researchers. Additionally, the international transitory researchers at LU are the largest group among the big 10 universities, with a size of 67.9%. International transitory FWCI ranks second, suggesting higher rates of citation during their time at the university.

To summarise, at LU the national inflow group exhibits the highest research productivity, while the international outflow researchers demonstrate relatively lower productivity. The group with the highest FWCI at LU is the international transitory researchers, indicating exceptional research production

during their stay. In terms of rankings within the big 10, LU holds a noteworthy position in terms of inflow FWCI for national researchers.

Uppsala University (UU)

Figure 3.3: National and international researcher mobility at Uppsala University, 2016–2022.



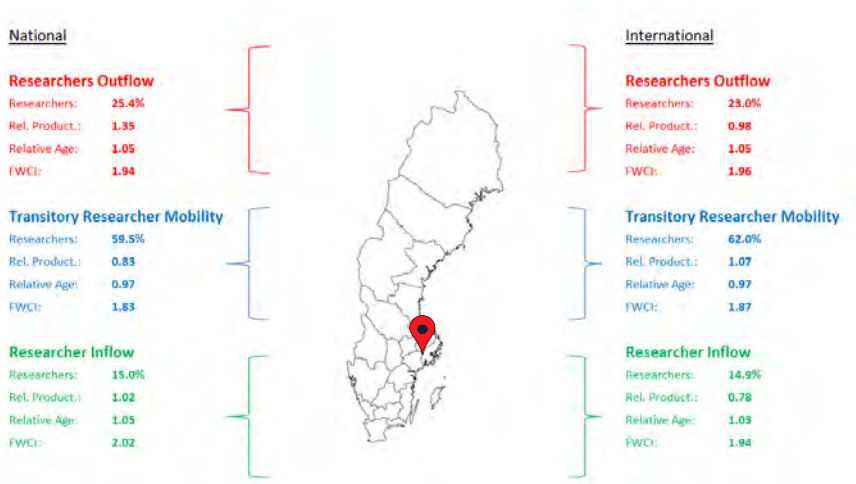
- Most productive category of researchers at UU: national inflow researchers (1.16)
- Least productive category of researchers at UU: international outflow researchers (0.89)
- Highest FWCI among groups at LU: international transitory researchers (1.89)

Among UU's nationally mobile researchers, 62.4% are classified as transitory, which is midrange for the big 10 institutions, ranking fifth. The FWCI of this group (1.86) is among the highest national transitory FWCI in the big 10. Regarding international researchers, UU ranks fifth in the big 10 in both transitory share (64.7%) and transitory FWCI (1.89), though FWCI is the highest of any group at the university.

Where productivity is concerned, at Uppsala University, the national inflow group shows the highest research productivity, while the international outflow group exhibits relatively lower productivity. In terms of rankings within the big 10, UU ranks moderately.

KTH Royal Institute of Technology (KTH)

Figure 3.4: National and international researcher mobility at the KTH Royal Institute of Technology, 2016–2022.



- Most productive category of researchers at KTH: national outflow researchers (1.35)
- Least productive category of researchers at KTH: international inflow researchers (0.78)
- Highest FWCI among groups at KTH: national inflow researchers (2.02)

Of KTH's nationally mobile researchers, KTH has relatively high inflow, ranking second among the big 10 institutions, with 15% of its nationally mobile researchers joining the institution. Its inflow FWCI ranks third among the big 10 universities, indicating relatively high research impact for incoming national researchers.

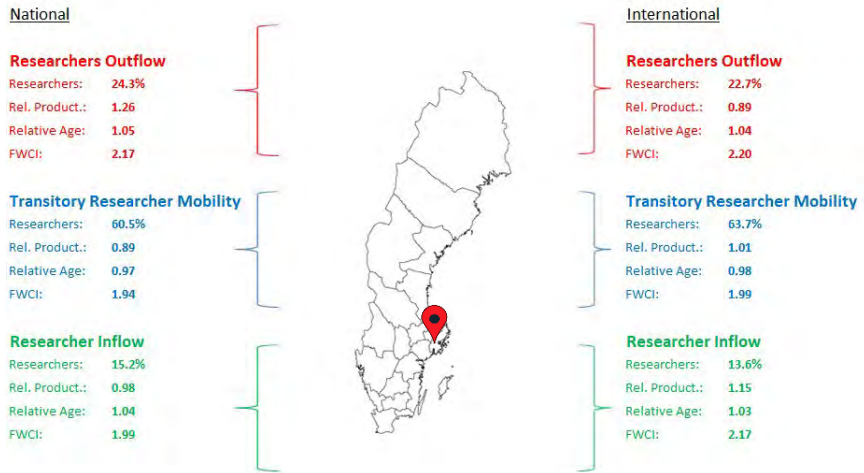
Among its internationally mobile researchers, KTH's outflow share was the largest in the big 10, with 23% of researchers leaving the university. The outflow FWCI ranks third among the big 10, suggesting moderate research impact among departing international researchers. Furthermore, the transitory group at KTH ranks ninth in terms of share size, comprising 62% of KTH's internationally mobile researchers. Their FWCI ranks sixth, indicating moderate research impact during their time at the university.

In terms of productivity, at The KTH Royal Institute of Technology, the national researcher outflow group demonstrates the highest research productivity, while the international inflow researchers show relatively lower

productivity. The national research inflow group stands out with the highest FWCI at the university. In terms of rankings within the big 10, KTH's share of inflow for nationally mobile researchers is relatively high.

Stockholm University (SU)

Figure 3.5: National and international researcher mobility at Stockholm University, 2016–2022.



- Most productive category of researchers at SU: national outflow researchers (1.26)
- Least productive categories of researchers at SU: national transitory researchers and international outflow researchers (0.89)
- Highest FWCI among groups at SU: international outflow researchers (2.20)

Of its nationally mobile outflow researchers, SU ranks sixth in the size of its outflow share, with 24.3%. Remarkably, SU excels in national outflow FWCI, obtaining the highest value among the big 10 universities at 2.17. Additionally, SU has a relatively large share of transitory researchers among its nationally mobile researchers, with 63.7% of researchers falling into this category. As with the outflow group, the transitory FWCI at SU is the highest among the big 10 universities, with a value of 1.94. In terms of inflow, SU's share ranks seventh in size with 13.6% of researchers, and it achieves a relatively high inflow FWCI at 1.99.

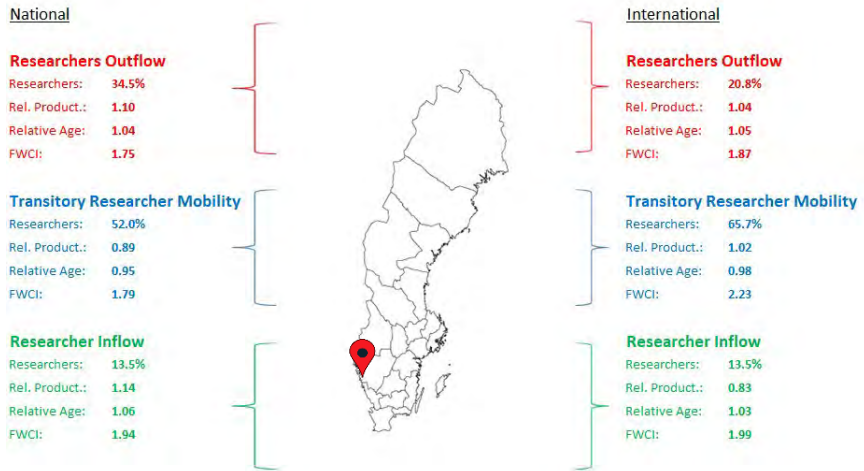
Regarding internationally mobile researchers, SU maintains a prominent position as well. In terms of international outflow, SU ranks second with 22.7% of researchers engaged in this category. Furthermore, SU secures the second-highest international outflow FWCI at 2.20. Although SU has one of the smallest shares among the big 10 for international inflow, with 13.6% of researchers falling into this category, this group demonstrates noteworthy

research impact with the second highest FWCI at 2.17.

To summarise, at Stockholm University, the national outflow group shows the highest research productivity, while the international outflow and national transitory groups show relatively lower productivity. The international outflow researchers, despite lower productivity, exhibit the highest FWCI at the university. In terms of rankings within the big 10, SU excels in terms of FWCI for nationally mobile outflow and transitory researchers and has the highest overall FWCI for nationally mobile researchers among the big 10.

University of Gothenburg (GU)

Figure 3.6: National and international researcher mobility at University of Gothenburg, 2016–2022.



- Most productive category of researchers at GU: national inflow researchers (1.14)
- Least productive category of researchers at GU: international inflow researchers (0.83)
- Highest FWCI among groups at GU: international transitory researchers (2.23)

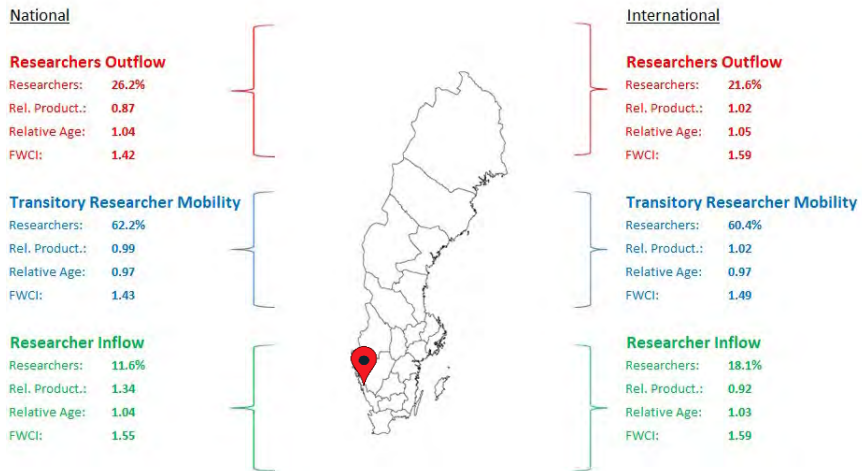
GU has the largest share of researchers moving on to other institutions in Sweden of any big 10 institution (34.5% for national outflow). However, its outflow FWCI ranks sixth among the big 10 institutions, suggesting that the departing national researchers' work is only moderately impactful. Conversely, GU has the smallest share of nationally transitory researchers among the big 10 universities, with 52% falling into this category. The group's FWCI ranks fifth, also indicating relatively moderate research impact.

For internationally mobile researchers, GU ranks third in terms of transitory share, with 65.7% of these researchers categorised as transitory. Notably, the international transitory researchers at GU have the highest FWCI among the big 10 universities, indicating their exceptional research impact. GU has the smallest share of international inflow researchers in the big 10, at 13.5%, but this group's FWCI ranks third, suggesting a relatively high citation impact compared to their counterparts at other universities.

In summary, when considering national and international mobility, there are certain variations in productivity and rankings within the big 10 that differentiate GU. For example, for nationally mobile researchers, GU's share of outflow researchers is the highest among the big 10 and its share of transitory researchers is the lowest. The inflow of international researchers, although a small share in comparison to other institutions, displays a comparatively high research impact.

Chalmers University of Technology (CTH)

Figure 3.7: National and international researcher mobility at Chalmers University of Technology, 2016–2022.



- Most productive category of researchers at CTH: national inflow researchers (1.34)
- Least productive category of researchers at CTH: national outflow researchers (0.87)
- Highest FWCI among groups at CTH: international outflow and inflow researchers (1.59)

CTH ranks third in terms of share of national outflow researchers, with 26.2% of its nationally mobile researchers leaving the university for other universities in Sweden. However, this group's FWCI is the lowest among the big 10 universities, which suggests that the research of this departing group is not as impactful as at other institutions. Also, CTH ranks sixth in terms of transitory share size, with 62.2% of its nationally mobile researchers falling into this category, but the transitory FWCI is the lowest among the big 10, indicating a lower level of research impact among this group. Finally, CTH's share of inflow researchers from other Swedish universities is the smallest among the big 10, at 11.6%, and this group's FWCI is also the lowest, highlighting that the incoming national researchers may have lower impact compared to their counterparts at other universities.

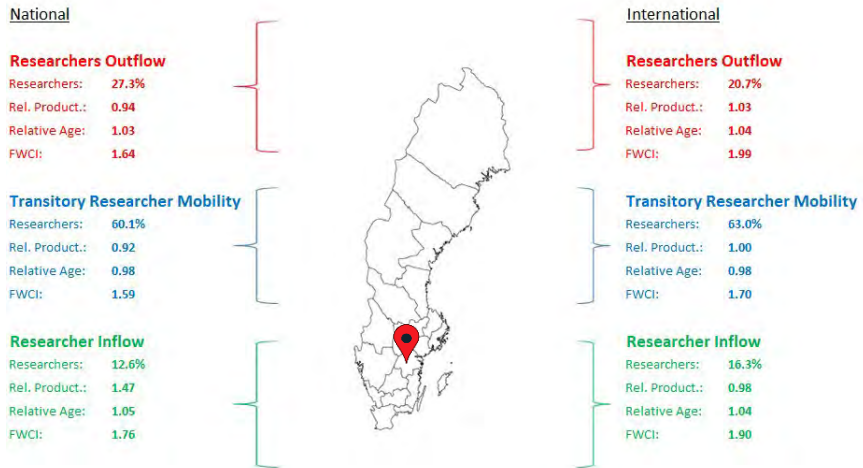
Turning to internationally mobile researchers, CTH again demonstrates lower rankings in terms of mobility. The university ranks fourth for the size of the

outflow share of international researchers, indicating a moderate proportion of international researchers leaving the university. However, this group's FWCI is the lowest among the big 10, suggesting that the departing international researchers' work is relatively unimpactful. Similarly, CTH has the smallest transitory share of international researchers at 60.4% and the lowest transitory FWCI, indicating a relatively lower research impact among this group. In contrast, CTH has the largest inflow size of international researchers at 18.1%, with an inflow FWCI that is the lowest among the big 10, implying that the incoming international researchers may have lower impact compared to their counterparts at other universities.

In summary, CTH ranks moderately to low compared to other big 10 institutions in scholarly impact, with the lowest overall FWCI for both internationally and nationally mobile researchers among the big 10.

Linköping University (LiU)

Figure 3.8: National and international researcher mobility at Linköping University, 2016–2022.



- Most productive category of researchers at LiU: national inflow researchers (1.47)
- Least productive category of researchers at LiU: national transitory group (0.92)
- Highest FWCI among groups at LiU: international outflow researchers (1.99)

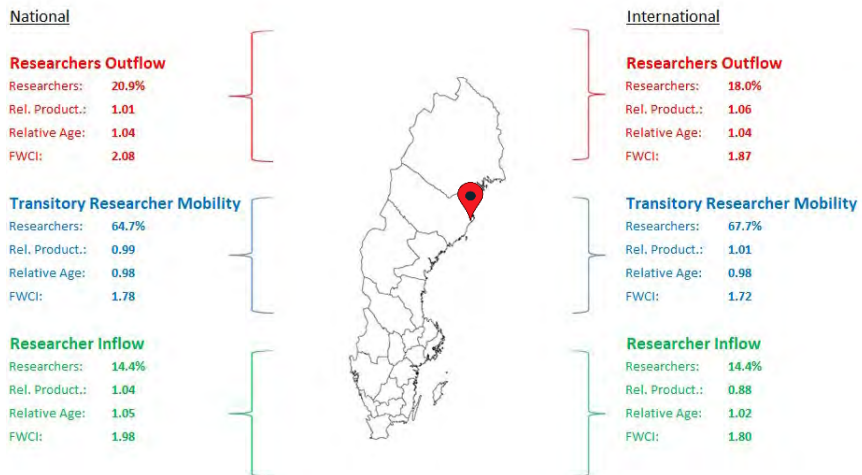
For nationally mobile researchers, LiU ranks second in terms of the size of its outflow share, with 27.3% of researchers leaving the university. However, the FWCI of this group ranks eighth among the big 10 universities, indicating relatively lower research impact among departing researchers. In terms of inflow, LiU ranks ninth in the size of the share of researchers joining LiU from other institutions in Sweden, with relatively few (12.6%) nationally mobile researchers joining the institution. The inflow FWCI also ranks eighth, suggesting lower research impact for incoming national researchers. Turning to internationally mobile researchers, LiU has a relatively large inflow share, ranking second, with 16.3% of its internationally mobile researchers joining the institution. This group's FWCI ranks sixth among the big 10 universities, suggesting a moderate research impact for incoming international researchers.

To summarise, at Linköping University (LiU), national inflow researchers exhibit the highest research productivity, while national transitory researchers

demonstrate relatively lower productivity. The group with the highest FWCI at LiU is the international outflow researchers, indicating exceptional research impact among departing international researchers. In terms of rankings within the big 10, LiU holds a noteworthy, relatively high position in terms of national outflow size and international inflow shares, while the research impact of inflow groups for both nationally and internationally mobile researchers is relatively low.

Umeå University (UmU)

Figure 3.9: National and international researcher mobility at Umeå University, 2016–2022.



- Most productive category of researchers at UmU: international outflow researchers (1.06)
- Least productive category of researchers at UmU: international inflow researchers (0.88)
- Highest FWCI among groups at UmU: national outflow researchers (2.08)

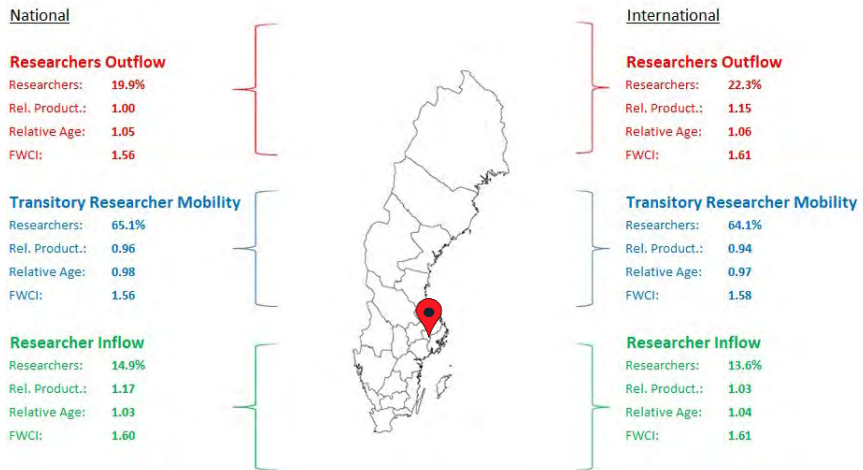
Of its nationally mobile researchers, UmU has one of the smallest outflow shares of the big 10 universities, with only 20.9% of researchers leaving the university for other Swedish institutions. However, this group's FWCI is the second highest national outflow FWCI among the big 10 universities, standing at 2.08, indicating a high level of research impact among these departing researchers. In contrast to a small share of outflow researchers, the share of nationally mobile transitory researchers at UmU is the second largest among the big 10 universities, comprising 64.7% of UmU's nationally mobile researchers. However, their FWCI ranks sixth at 1.78, suggesting moderate research impact during their time at the university. For internationally mobile researchers, UmU's outflow share, at 18%, was also the smallest among the big 10. However, internationally mobile transitory researchers at UmU rank second for share size among the big 10 universities, comprising 67.7% of the researchers.

In summary, at Umeå University, the international outflow group demonstrates moderate impact, and the national outflow researchers exhibit

the highest FWCI at the university. In terms of rankings within the big 10, UmU excels in terms of FWCI for the national outflow researchers. Additionally, UmU stands out in terms of its large share of transitory researchers, both nationally and internationally.

Swedish University of Agricultural Sciences (SLU)

Figure 3.10: National and international researcher mobility at Swedish University of Agricultural Science, 2016–2022.



- Most productive category of researchers at SLU: national inflow researchers (1.17)
- Least productive category of researchers at SLU: international transitory researchers (0.94)
- Highest FWCI among groups at SLU: international outflow and inflow researchers (1.61)

At SLU, for national mobility, the outflow share is relatively small, ranking last of the big 10, with 19.9% of researchers. Furthermore, the national outflow FWCI ranks ninth at 1.56. The share of national transitory researchers at SLU is the largest among the universities, with 65.1% of researchers falling into this category. However, this group's FWCI also ranks ninth at 1.56. In terms of inflow, SLU ranks third, with a share that accounts for 14.9% of its nationally mobile researchers, and the FWCI for that group ranks ninth at 1.60.

In terms of international mobility, SLU exhibits mobility shares comparable to the other big 10 universities with generally lower FWCI. The outflow share ranks third at 22.3%, and its FWCI ranks ninth at 1.61. Similarly, the transitory share ranks sixth at 64.1%, and the transitory FWCI ranks ninth at 1.58. For inflow, SLU ranks eighth in share size, with 13.6% of researchers falling into this category. The inflow FWCI also ranks ninth at 1.61, indicating lower citation impact for international inflow publications.

Overall, SLU's performance in terms of researcher mobility and productivity is relatively modest within the big 10 universities. Overall rankings in terms of publication activity and impact are comparatively lower across both national and international categories.

Chapter 4: Comparison of the period of the current report (2023) with the previous report (2016)

One of the aims of the current analysis is to give an idea of the trends in Swedish research mobility. In order to facilitate comparisons between the 2016 and 2023 reports, the methodology and definitions used in this report are the same as in the previous iteration. It should be noted, however, that an exact comparison is not possible, partly because the previous analysis captured a much longer period (1996–2015) than the current one (2016–2022). However, it is possible to draw some high-level conclusions based on both reports. On the aggregated level, across all 28 HEIs, there seems to be a trend towards long-term mobility at the expense of short-term or transitory mobility. Table 4.1 below shows some key numbers comparing mobility groups across all 28 HEIs. Both outflow and inflow groups were larger than in the 1996–2015 period. The overall FWCI went down slightly, mainly due to the decrease in the largest mobility group of transitory researchers.

Table 4.1: Overall comparison of 28 HEIs share of mobility groups and corresponding FWCI for the 2016–2022 period and the 1996–2015 period.

Mobility group	Share of researchers, 2016–2022	Share of researchers, 1996–2015	Weighted average FWCI, 2016–2022	Weighted average FWCI, 1996–2015
Sedentary	24%	26%	1.6	1.5
Outflow	19%	15%	1.9	1.8
Transitory	46%	49%	1.9	2.0
Inflow	11%	10%	1.9	1.8
Overall			1.8	1.9

The big 10 institutions remained the same in both analyses, both by the number of active researchers and by the number of publications (Table 4.2). Some small changes can be noted, however, in the ranked order of these institutions. University of Gothenburg dropped two positions when the institutions were ranked in order by active researchers, while Chalmers University of Technology rose by two places to overtake Linköping University and Umeå University. Similarly, in a ranking by publication output, University of Gothenburg changed position with Stockholm University while Chalmers

again overtook Linköping University. These changes, however, may be accounted to the different periods as well, but they may signal some subtle changes in the Swedish research landscape.

Table 4.2: Comparison of active researcher count and publication count ranking of 2016 and 2023 reports. Cell shading indicates changes of at least two places above (dark blue) or below (light blue) the 1996–2015 period.

Institution	Active researchers, 2016–2022	Rank by active researchers, 1995–2015	Publications by active researchers, 2016–2022	Rank by publication output, 1996–2015
Karolinska Institutet	11,694	1	19.4	1
Lund University	8,540	2	15.6	2
Uppsala University	8,372	3	18.9	3
KTH Royal Institute of Technology	6,905	5	22.6	4
Stockholm University	6,362	6	22.7	6
University of Gothenburg	5,944	4	25.4	5
Chalmers University of Technology	3,724	9	20.1	8
Linköping University	3,522	7	19.0	7
Umeå University	3,266	8	15.2	9
Swedish University of Agriculture	2,559	10	17.0	10.

A more detailed view provides an analysis of changes of the different mobility groups. Table 4.3 below highlights the changes between the two reports for the big 10 institutions. Five of the 10 institutions saw a decrease in the share of sedentary researchers of more than three percentage points, indicating increased mobility of their researchers. Only Lund University displayed an increase of three percentage points for sedentary researchers. But again, this may be an effect of the different periods of both reports. Interestingly, the mobility groups of inflow and outflow grew for almost all the big 10 institutions; six of them “grew” by more than three percentage points for the outflow and three of them for the inflow. This seemed to be at the expense of the transitory group—possibly the mobility pattern moved from short-term mobility (less than two years) to longer stays or leaves. Since the group of transitory researchers is often connected with higher productivity and higher impact, this is something that should be investigated more thoroughly for the

future.

Table 4.3: Comparison of shares of mobility groups for big 10 institutions for the period 2016–2022 and 1996–2015. Cell shading indicates changes of 3 or more percentage points above (dark blue) or below (light blue) the 1996–2015 period.

Institution	Sedentary %, 2016–2022	Sedentary %, 1996–2015	Outflow %, 2016–2022	Outflow %, 1996–2015	Transitory %, 2016–2022	Transitory %, 1996–2015	Inflow %, 2016–2022	Inflow %, 1996–2015
Karolinska Institutet	21%	24%	19%	15%	48%	50%	11%	11%
Lund University	29%	26%	16%	15%	46%	48%	9%	11%
Uppsala University	23%	23%	19%	17%	47%	50%	11%	10%
KTH Royal Institute of Technology	17%	25%	23%	17%	48%	50%	12%	8%
Stockholm University	16%	23%	23%	16%	49%	52%	12%	9%
University of Gothenburg	19%	26%	25%	14%	45%	48%	10%	11%
Chalmers University of Technology	22%	25%	20%	17%	46%	49%	12%	9%
Linköping University	28%	29%	19%	14%	43%	46%	10%	11%
Umeå University	30%	29%	15%	14%	45%	47%	10%	10%
Swedish University of Agriculture	27%	25%	17%	17%	45%	47%	10%	9%

To assess these effects in more detail, Table 4.4 highlights changes for the citation impact (FWCI) for the big 10 institutions per mobility group. The only institution that was able to raise its overall FWCI from the first to the second period was Karolinska Institutet. All other institutions experienced a drop in FWCI; the greatest drop was Stockholm University which dropped by 0.4 points. This was mainly due to a drop in the transitory FWCI of 0.5 points. Interestingly, as with the total shares of mobility groups, the longer-term mobility seemed to see an increase in FWCI whereas the transitory mobility seemed to drop more often.

Table 4.4: Comparison of FWCI per mobility group for the big 10 institutions for the period 2016–2022 and 1996–2015. Cell highlighting signals changes of at least 0.2 points change above (dark blue) or below (light blue) the 1996–2015 period.

Institution	Overall FWCI, 2016–2022	Overall FWCI, 1996–2015	Sedentary FWCI, 2016–2022	Sedentary FWCI, 1996–2015	Outflow FWCI, 2016–2022	Outflow FWCI, 1996–2015	Transitory FWCI, 2016–2022	Transitory FWCI, 1996–2015	Inflow FWCI, 2016–2022	Inflow FWCI, 1996–2015
Karolinska Institutet	2.1	1.9	1.9	1.6	2.2	1.7	2.1	2.0	2.2	1.9
Lund University	1.8	1.9	1.6	1.5	1.8	1.8	2.0	2.0	2.0	1.8
Uppsala University	1.8	2.1	1.5	1.5	1.8	1.8	1.9	2.2	1.8	1.9
Royal Institute of Technology	1.8	1.7	1.5	1.4	2.0	1.7	1.8	1.8	1.9	1.6
Stockholm University	1.9	2.3	1.7	1.6	2.2	2.2	1.9	2.4	2.0	2.0
University of Gothenburg	1.8	2.0	1.6	1.5	1.8	1.9	2.0	2.0	1.9	1.9
Chalmers University of Technology	1.5	1.5	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6
Linköping University	1.6	1.6	1.5	1.5	1.8	1.5	1.6	1.7	1.8	1.6
Umeå University	1.7	1.8	1.4	1.4	2.0	1.7	1.7	1.9	1.8	1.7
Swedish University of Agriculture	1.5	1.6	1.5	1.4	1.6	1.7	1.6	1.6	1.6	1.7

APPENDIX A: Methodology and Data

A.1 Methodology and rationale

Our methodology is based on the theoretical principles and best practices developed in the field of quantitative science and technology studies, particularly in science and technology indicators research. *The Handbook of Quantitative Science and Technology Research: The Use of Publication and Patent Statistics in Studies of S&T Systems* (Moed, Glanzel and Schmoch, 2004) gives a good overview of this field and is based on the pioneering work of Derek de Solla Price (1978), Eugene Garfield (1979) and Francis Narin (1976) in the US, and Christopher Freeman, Ben Martin and John Irvine in the UK (1981, 1987), and in several European institutions including the Centre for Science and Technology Studies at Leiden University, the Netherlands, and the Library of the Academy of Sciences in Budapest, Hungary.

The analyses of bibliometric data in this report are based on recognised advanced indicators (e.g., the concept of relative citation impact rates). Our base assumption is that such indicators are useful and valid, though imperfect and partial measures, in the sense that their numerical values are determined by research performance and related concepts, but also by other, influencing factors that may cause systematic biases. In the past decade, the field of indicators research has developed best practices that state how indicator results should be interpreted and which influencing factors should be considered. Our methodology builds on these practices.

Year range

All analyses in this report are based on data that range from 2016 to 2022. To measure trends in publication output over time, it is customary to group publications (and other indicators based on publication outputs, such as citations or co-authorships) based on the calendar year in which they were published.

Article types

For all bibliometric analysis, only the following document types are considered:

- Article (ar)
- Review (re)
- Conference Proceeding (cp)

In bibliometric studies, these article types are generally considered to be article types with scholarly content that has been peer reviewed. That is, such article types have been scrutinised by experts in the same field and were determined by said experts to be suitable for publication. In contrast, our analyses exclude document types such as letters, notes, editorials, etc. that are also published in journals and other serials titles but are not necessarily peer reviewed.

Field-weighted citation impact (FWCI)

Field-weighted citation impact (FWCI) indicates how the number of citations received by an entity's publications compares with the average number of citations received by all other similar publications in the data universe: how do the citations received by this entity's publications compare with the world average? A field-weighted citation impact of 1.00 indicates that the entity's publications have been cited exactly as would be expected based on the global average for similar publications, the FWCI of "World," or the entire Scopus database, is 1.00. A FWCI of more than 1.00 indicates that the entity's publications have been cited more than would be expected based on the global average for similar publications; for example, 2.11 means 111% more cited than the world average. A FWCI of less than 1.00 indicates that the entity's publications have been cited less than would be expected based on the global average for similar publications; for example, 0.87 means 13% less cited than world average.

The Field-Weighted Citation Impact (FWCI) for a set of N publications is defined as:

$$FWCI = \frac{1}{N} \sum \frac{c_i}{e_i}$$

c_i = citations received by publication i .

e_i = expected number of citations received by all similar publications in the publication year plus up to following 5 years.

Data sources

Scopus is Elsevier's abstract and citation database of peer-reviewed literature, covering 91 million documents published in over 27,950 journals, book series and conference proceedings by 7,000 publishers.

Scopus coverage is multi-lingual and global: approximately 46% of titles in Scopus are published in languages other than English (or published in both English and another language). In addition, more than half of Scopus content originates from outside North America, representing many countries in Europe, Latin America, Africa, and the Asia Pacific region.

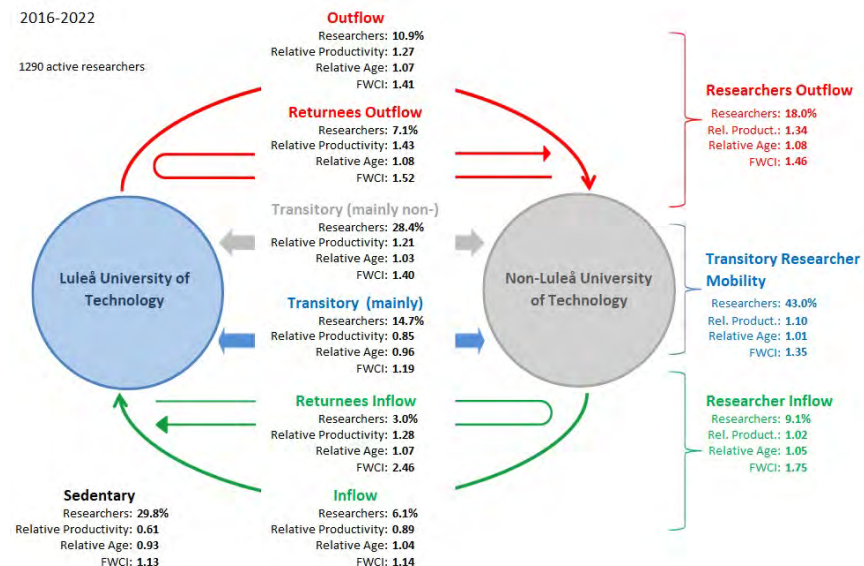
Scopus coverage is also inclusive across all major research fields, with 14,500 titles in the Physical Sciences, 15,000 in the Health Sciences, 7,800 in the Life Sciences, and 14,500 in the Social Sciences. Titles which are covered are predominantly serial publications (journals, trade journals, book series and conference material), but considerable numbers of conference papers are also covered from stand-alone proceedings volumes (a major dissemination mechanism, particularly in the computer sciences). Acknowledging that a great deal of important literature in all fields (but especially in the Social Sciences and Arts & Humanities) is published in books, Scopus began to increase book coverage in 2013, and currently covers more than 300,000 books.

More information can be found on www.elsevier.com/scopus.

A.2 Overall researcher mobility charts of HEIs (excluding the big 10)

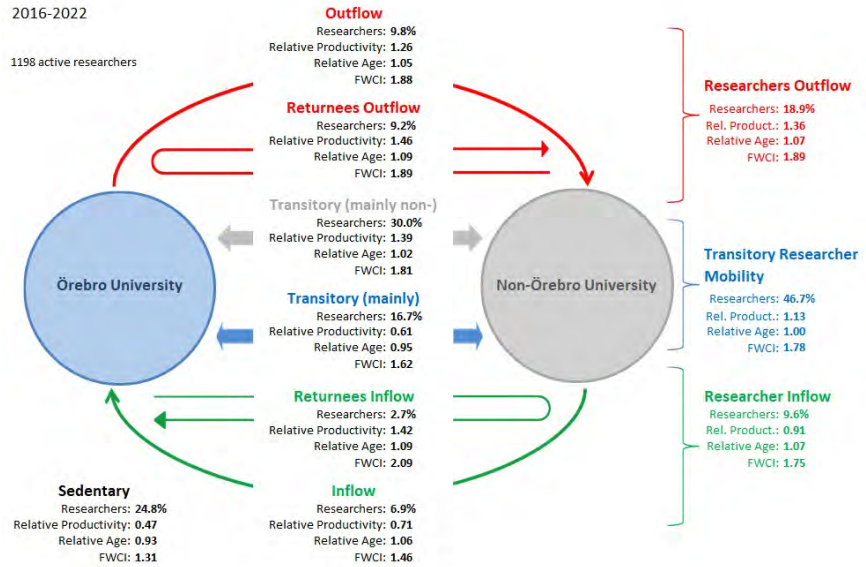
Luleå University of Technology (LTU)

Figure A.2.1: Overall researcher mobility at Luleå University of Technology, 2016–2022.



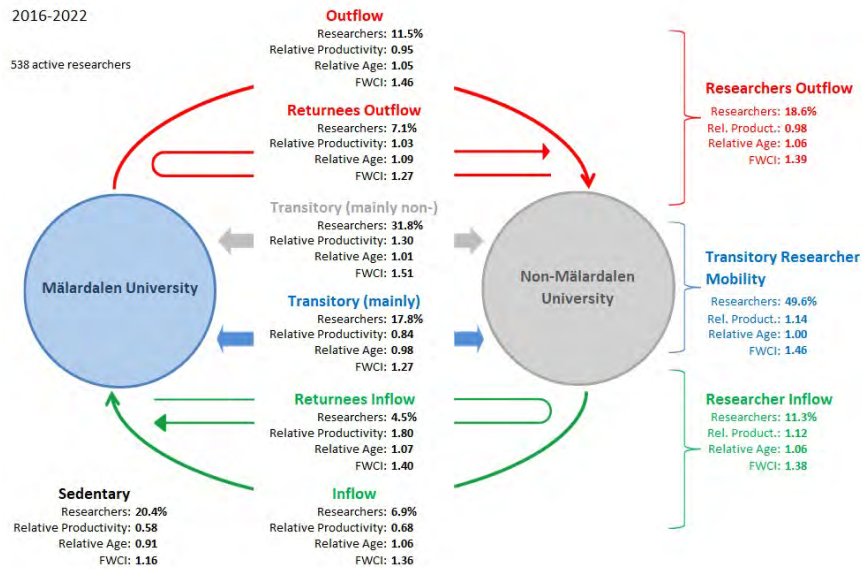
Örebro University (ÖU)

Figure A.2.2: Overall researcher mobility at Örebro University, 2016–2022.



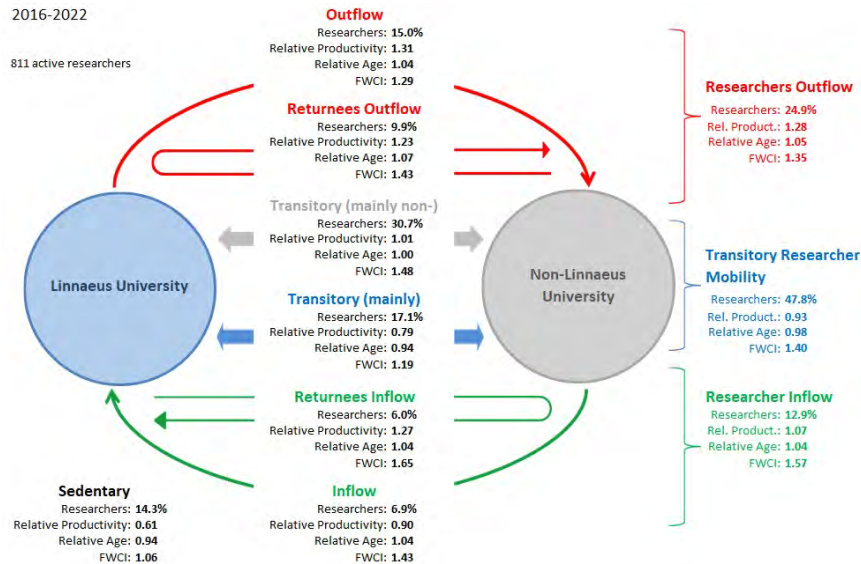
Mälardalen University (MdH)

Figure A.2.3: Overall researcher mobility at Mälardalen University, 2016–2022.



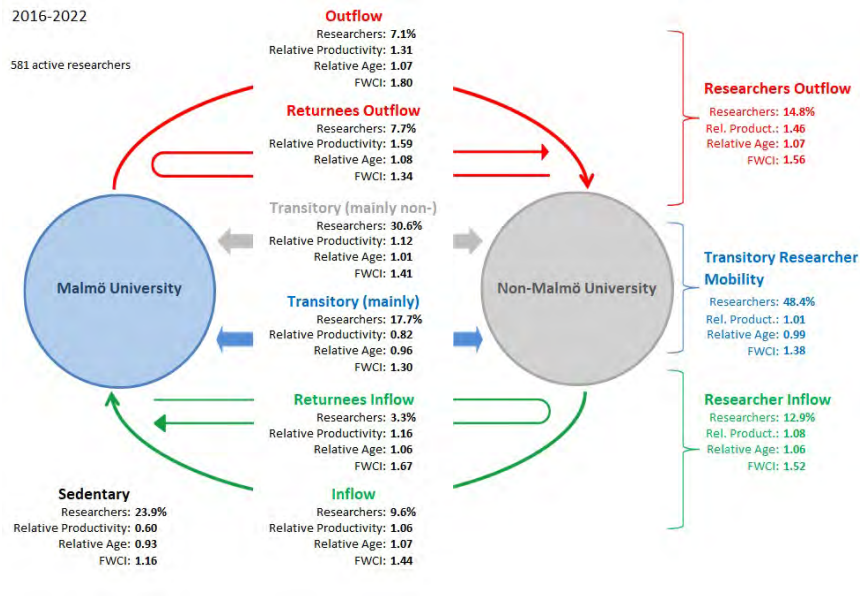
Linnaeus University (LNU)

Figure A.2.4: Overall researcher mobility at Linnaeus University, 2016–2022.



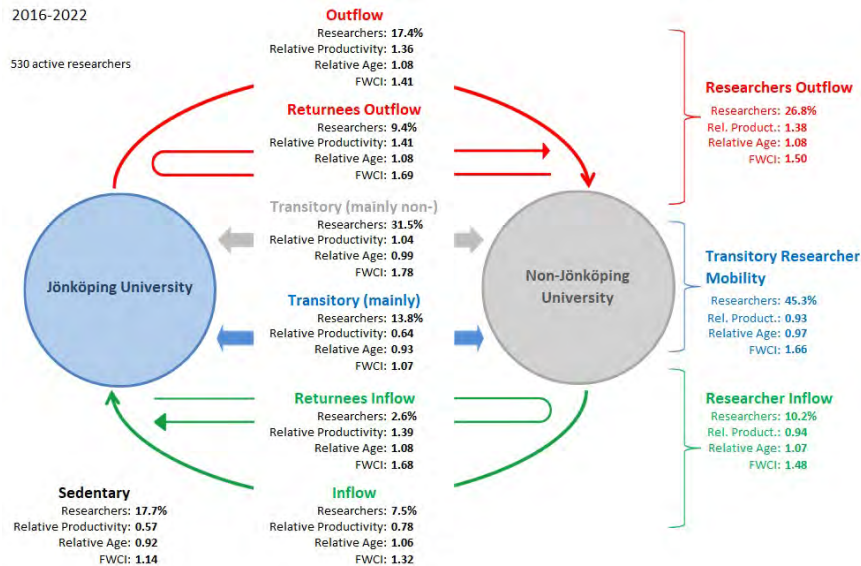
Malmö University (MaH)

Figure A.2.5: Overall researcher mobility at Malmö University, 2016–2022.



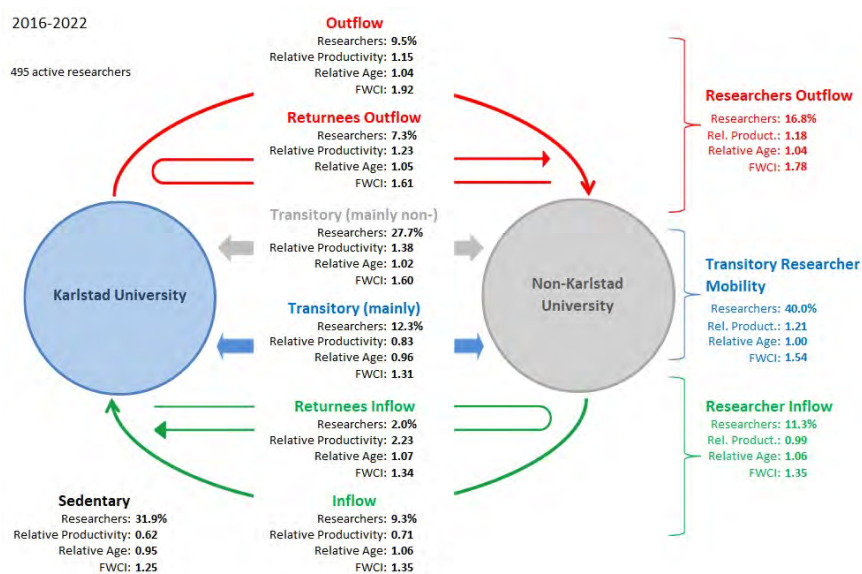
Jönköping University (JU)

Figure A.2.6: Overall researcher mobility at Jönköping University, 2016–2022.



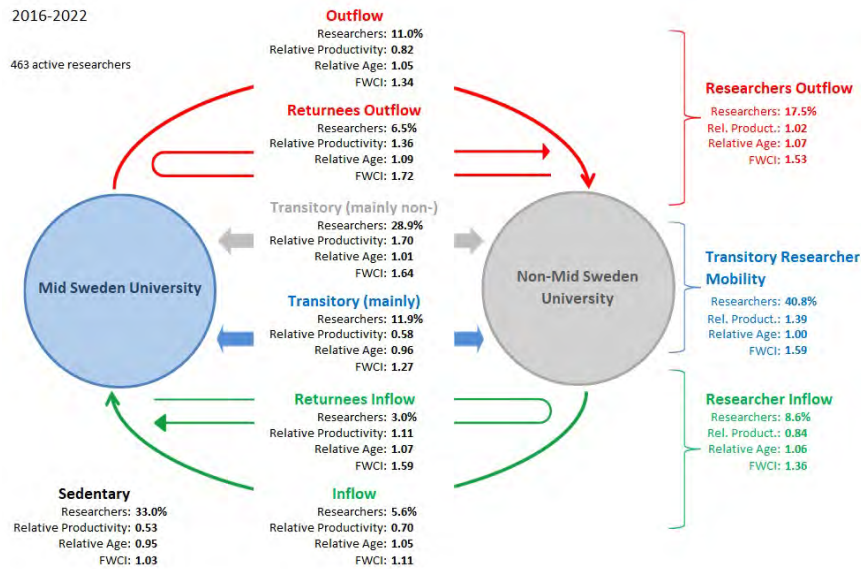
Karlstad University (KaU)

Figure A.2.7: Overall researcher mobility at Karlstad University, 2016–2022.



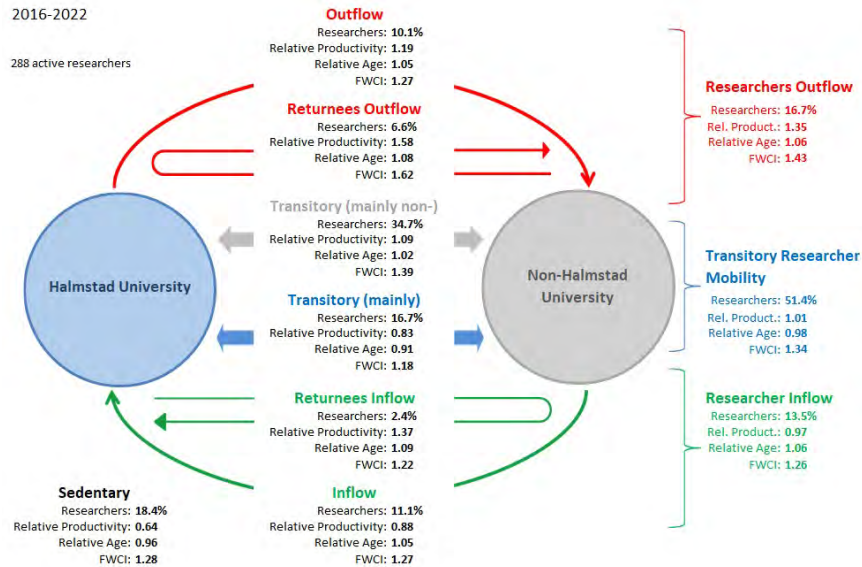
Mid Sweden University (MiU)

Figure A.2.8: Overall researcher mobility at Mid Sweden University, 2016–2022.



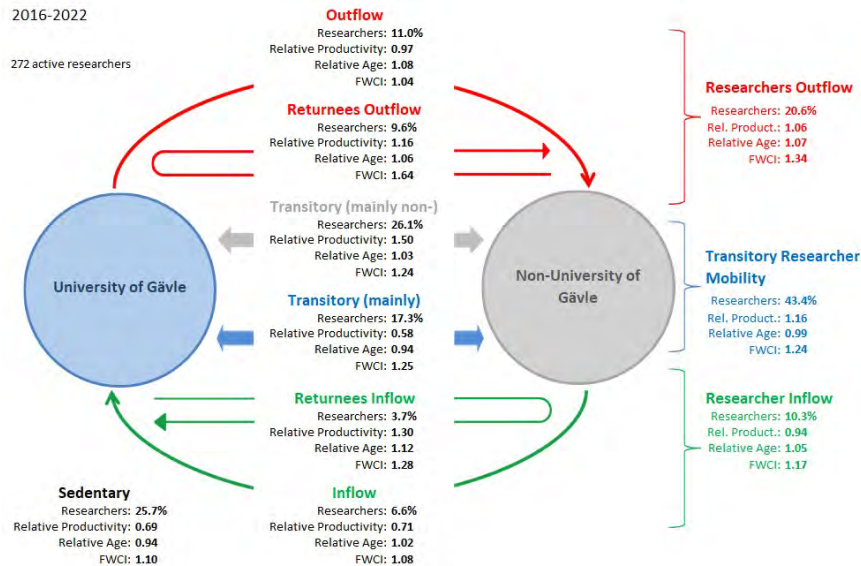
Halmstad University (HH)

Figure A.2.9: Overall researcher mobility at Halmstad University, 2016–2022.



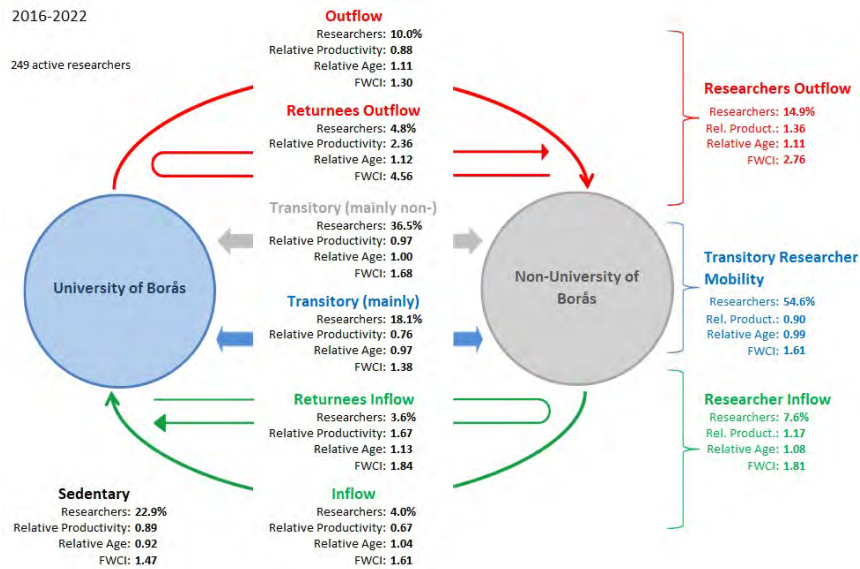
University of Gävle (HiG)

Figure A.2.10: Overall researcher mobility at University of Gävle, 2016–2022.



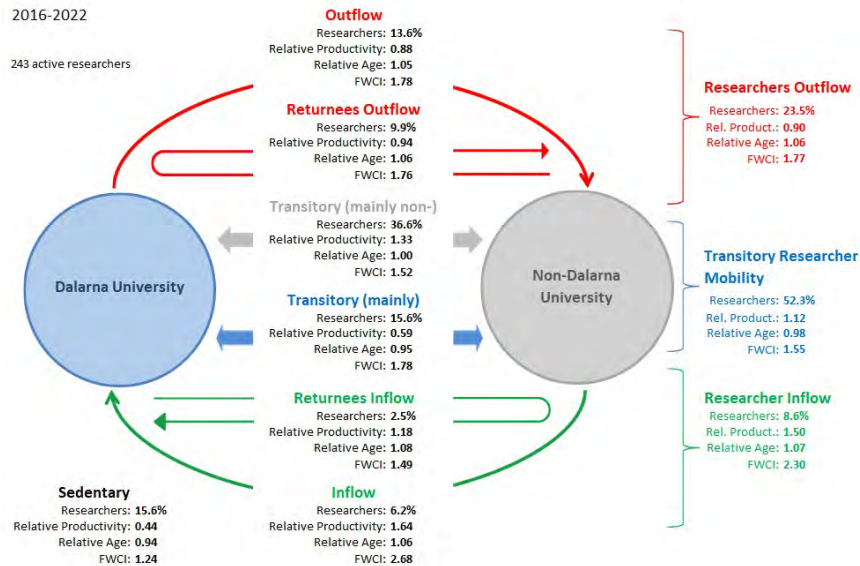
University of Borås (HB)

Figure A.2.11: Overall researcher mobility at University of Borås, 2016–2022.



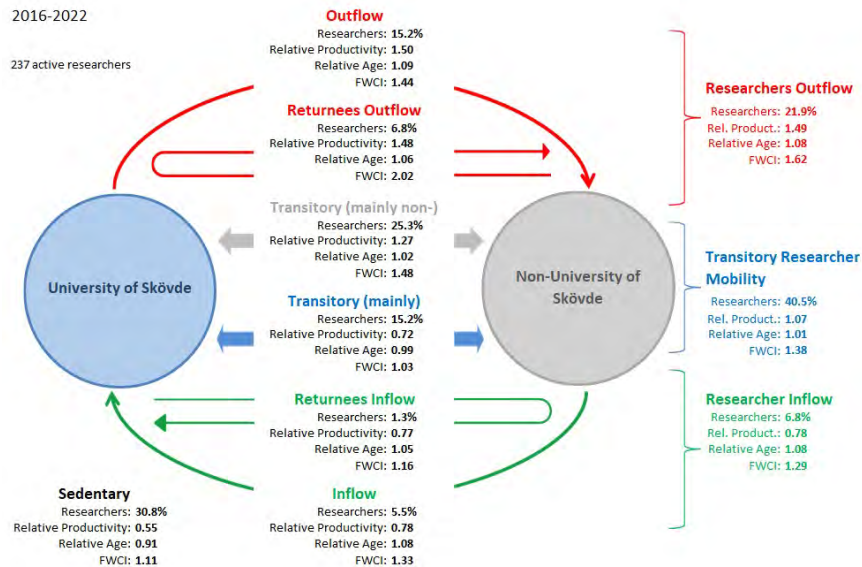
Dalarna University (Had)

Figure A.2.12: Overall researcher mobility at Dalarna University, 2016–2022.



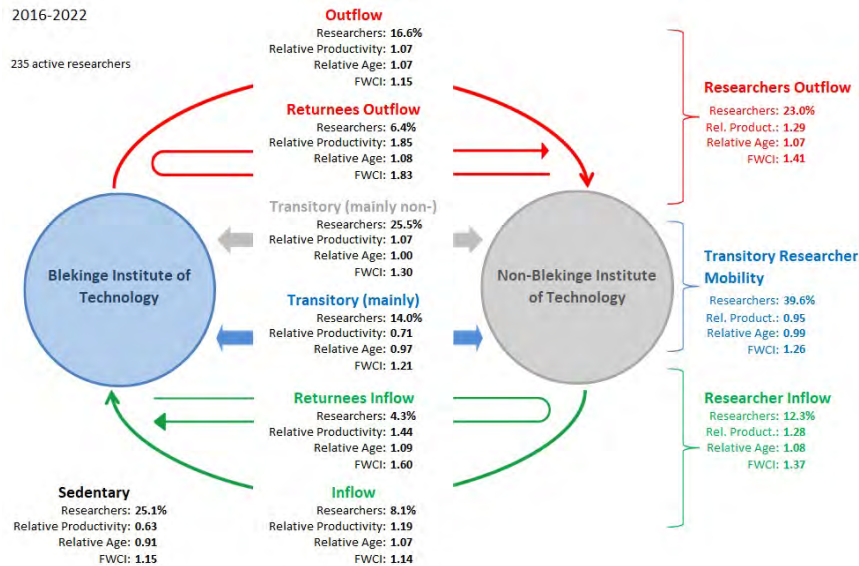
University of Skövde (HS)

Figure A.2.13: Overall researcher mobility at University of Skövde, 2016–2022.



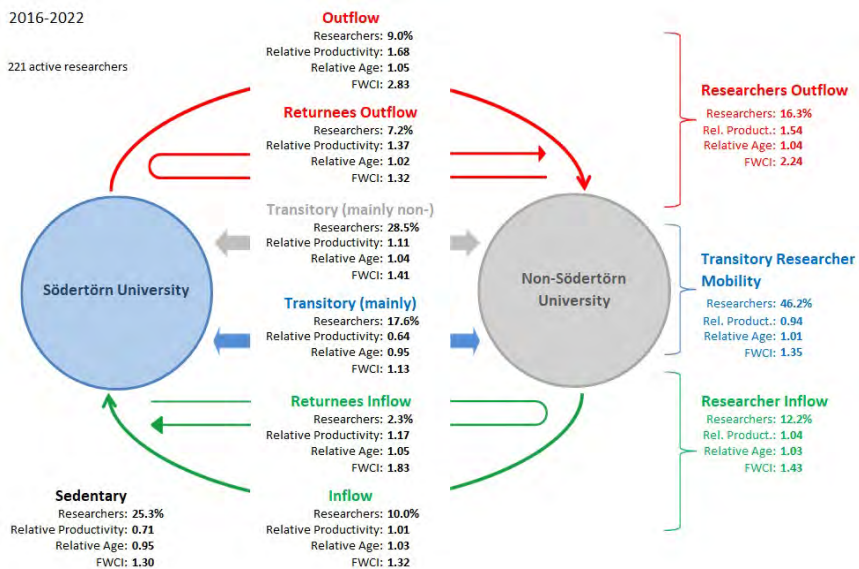
Blekinge Institute of Technology (BTH)

Figure A.2.14: Overall researcher mobility at Blekinge Institute of Technology, 2016–2022.



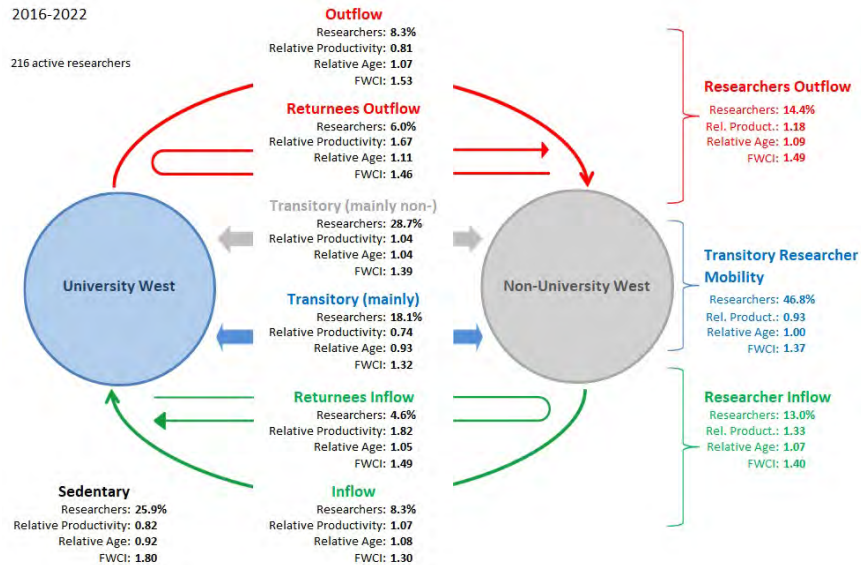
Södertörn University (SH)

Figure A.2.15: Overall researcher mobility at Södertörn University, 2016–2022.



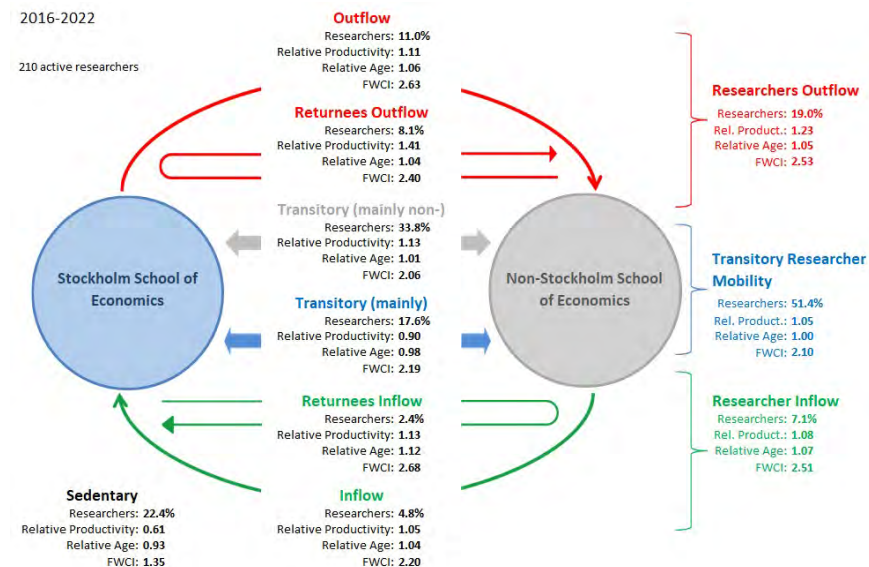
University West (HV)

Figure A.2.16: Overall researcher mobility at University West, 2016–2022.



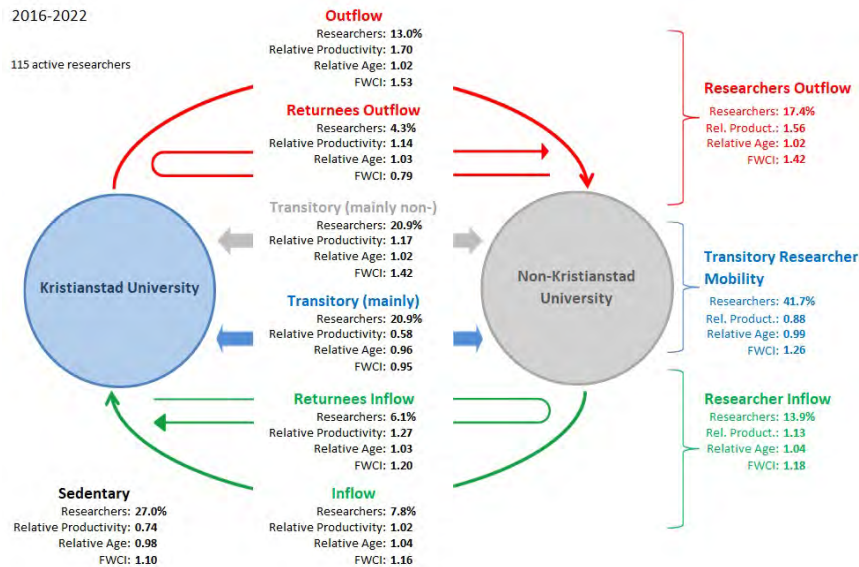
Stockholm School of Economics (HHS)

Figure A.2.17: Overall researcher mobility at Stockholm School of Economics, 2016–2022.



Kristianstad University (HKr)

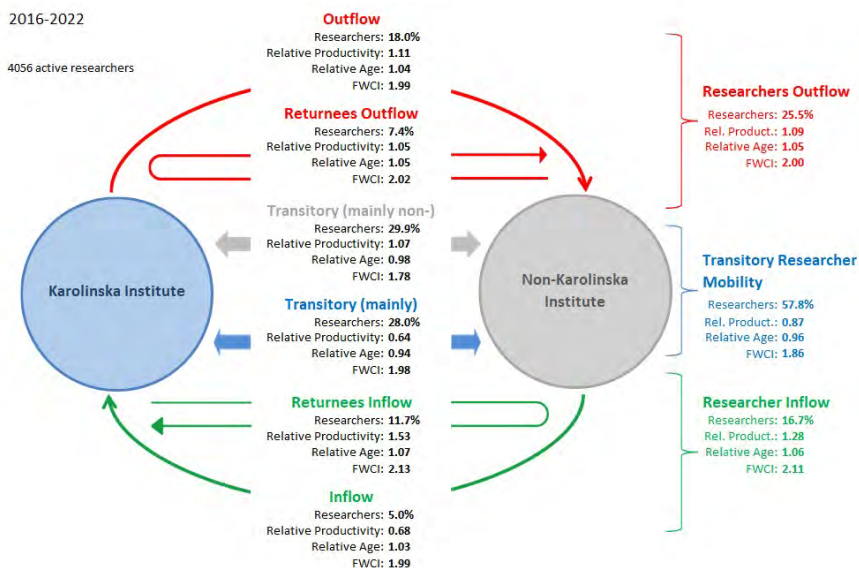
Figure A.2.18: Overall researcher mobility at Kristianstad University, 2016–2022.



A.3 National researcher mobility charts of HEIs (all)

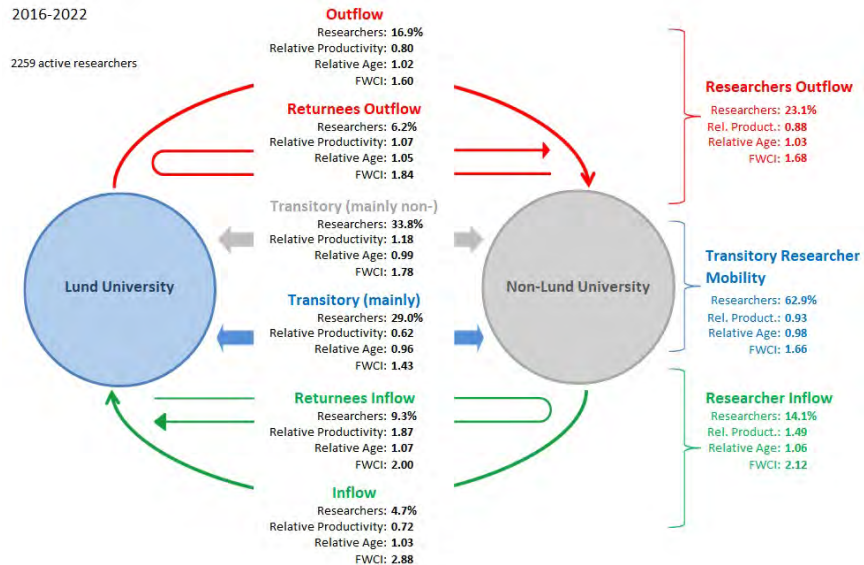
Karolinska Institutet (KI)

Figure A.3.1: National researcher mobility at Karolinska University, 2016–2022.



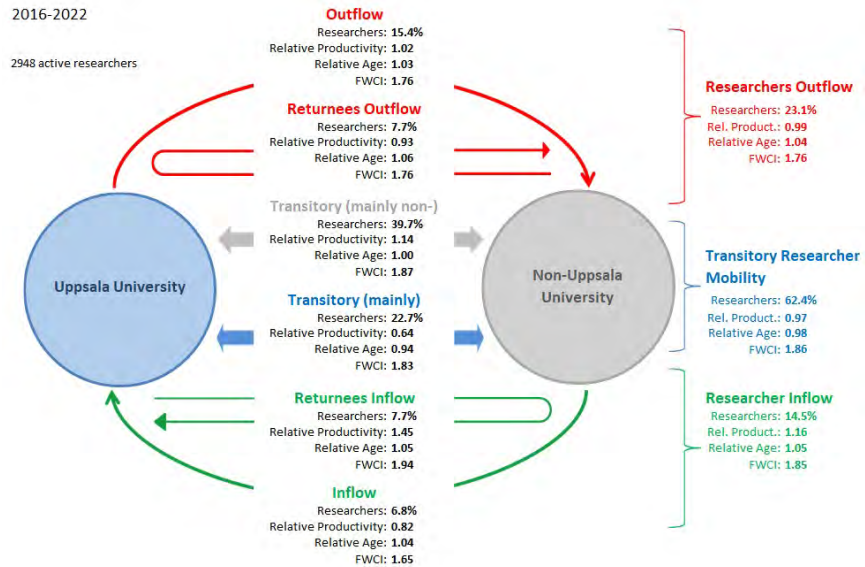
Lund University (LU)

Figure A.3.2: National researcher mobility at Lund University, 2016–2022.



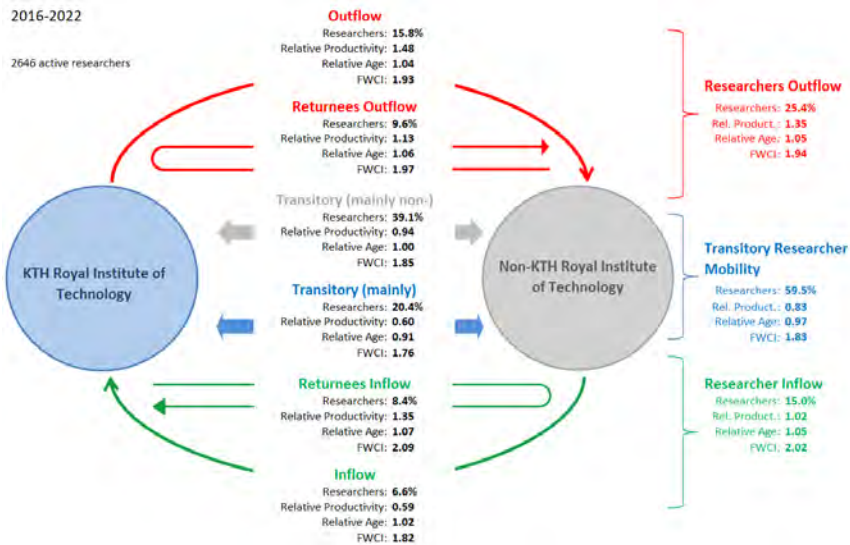
Uppsala University (UU)

Figure A.3.3: National researcher mobility at Uppsala University, 2016–2022.



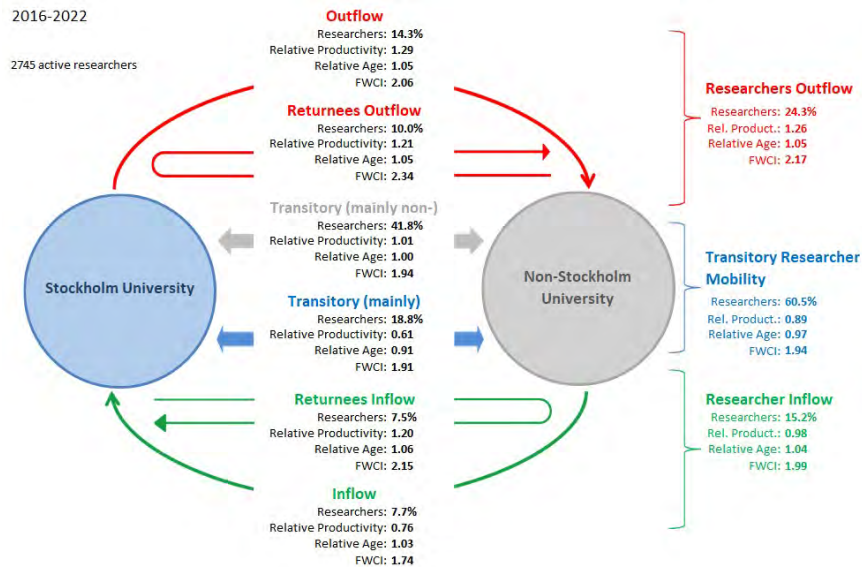
KTH Royal Institute of Technology (KTH)

Figure A.3.4: National researcher mobility at KTH Royal Institute of Technology, 2016–2022.



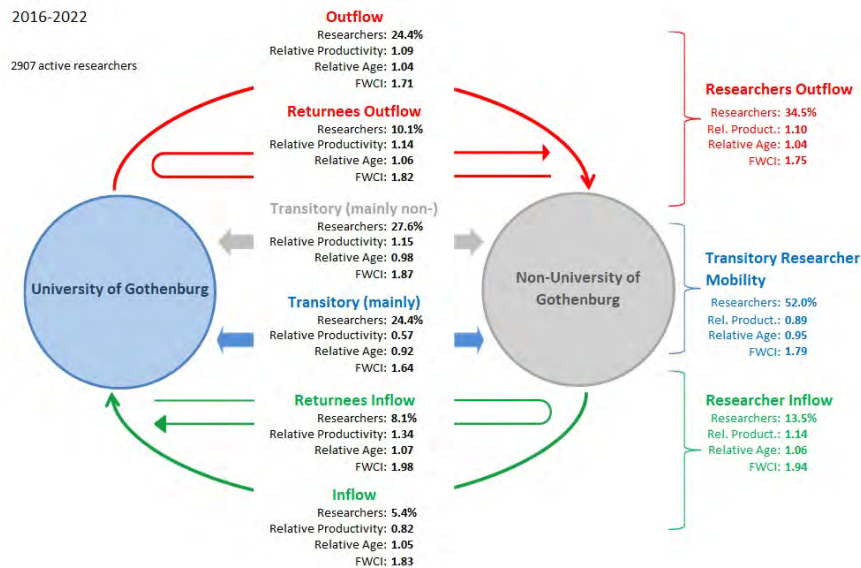
Stockholm University (SU)

Figure A.3.5: National researcher mobility at Stockholm University, 2016–2022.



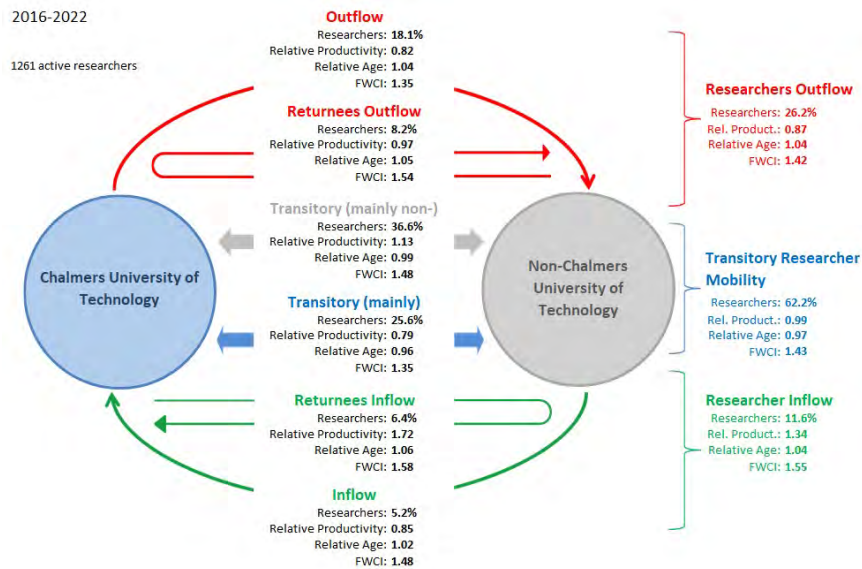
University of Gothenburg (GU)

Figure A.3.6: National researcher mobility at University of Gothenburg, 2016–2022.



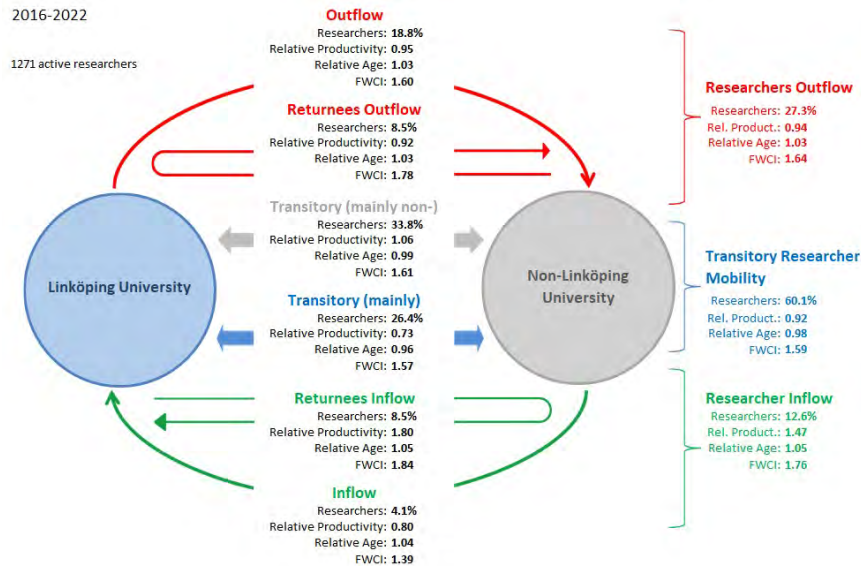
Chalmers University of Technology (CTH)

Figure A.3.7: National researcher mobility at Chalmers University of Technology, 2016–2022.



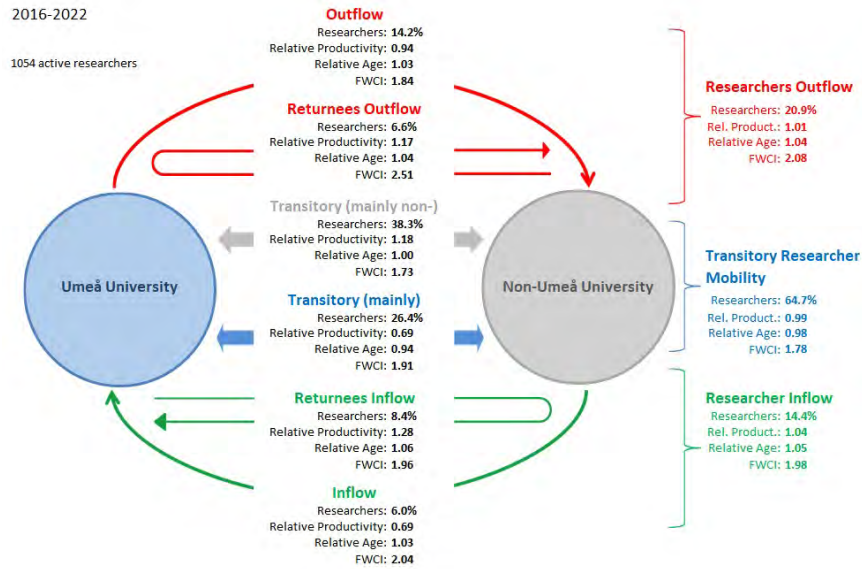
Linköping University (LiU)

Figure A.3.8: National researcher mobility at Linköping University, 2016–2022



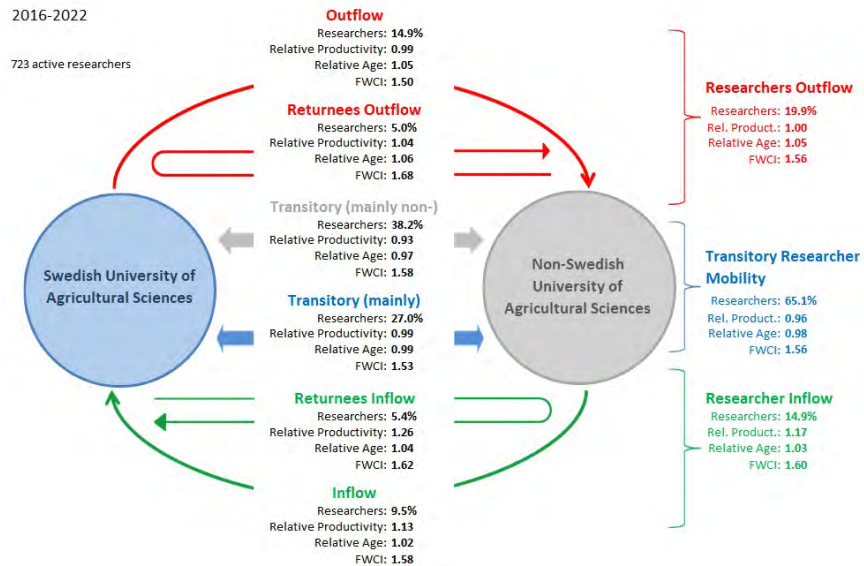
Umeå University (UmU)

Figure A.3.9: National researcher mobility at Umeå University, 2016–2022.



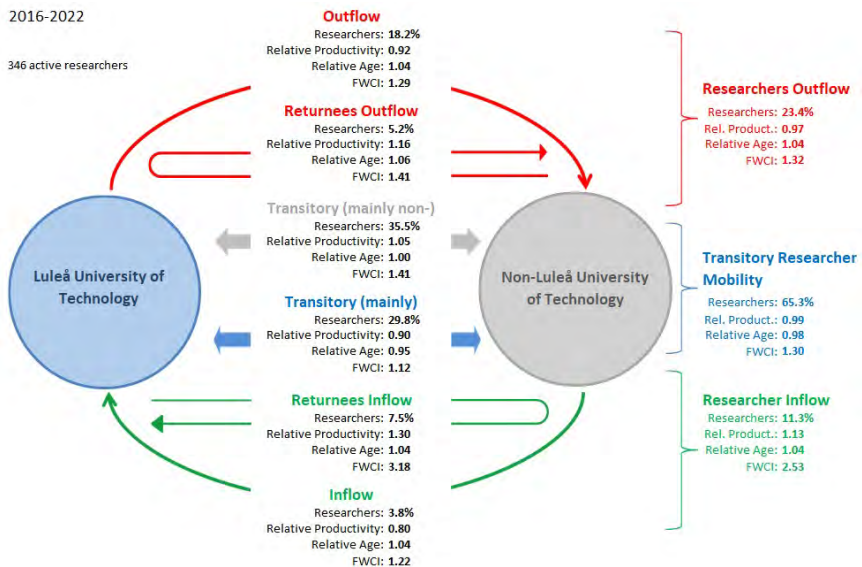
Swedish University of Agricultural Science (SLU)

Figure A.3.10: National researcher mobility at Swedish University of Agricultural Science, 2016–2022.



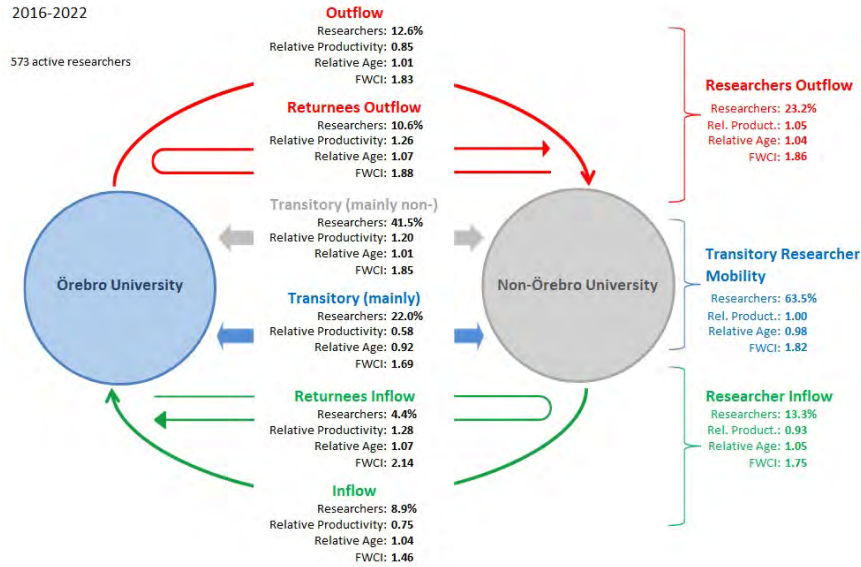
Luleå University of Technology (LTU)

Figure A.3.11: National researcher mobility at Luleå University of Technology, 2016–2022.



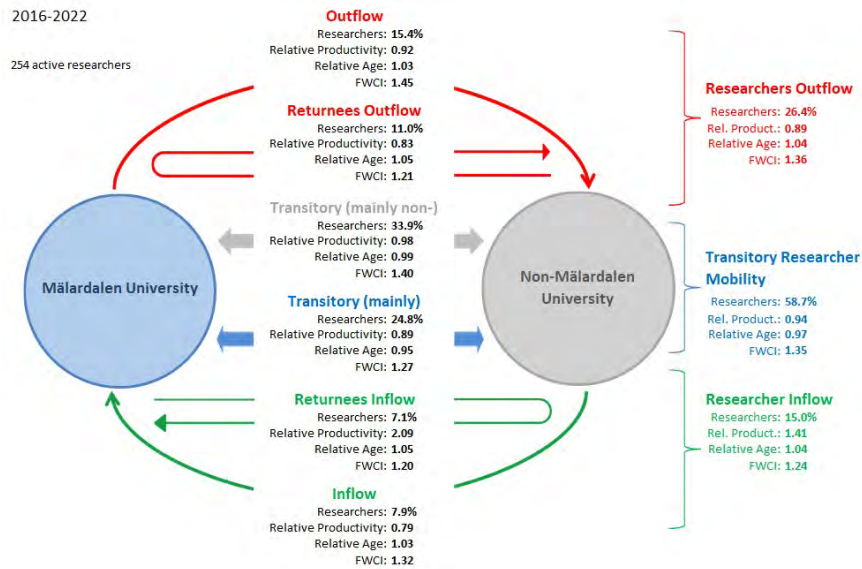
Örebro University (ÖU)

Figure A.3.12: National researcher mobility at Örebro University, 2016–2022.



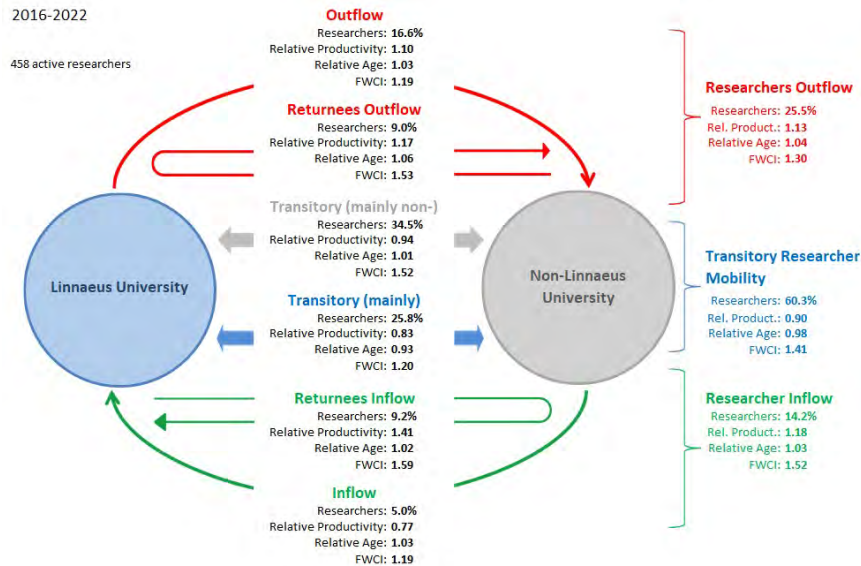
Mälardalen University (MdH)

Figure A.3.13: National researcher mobility at Mälardalen University, 2016–2022.



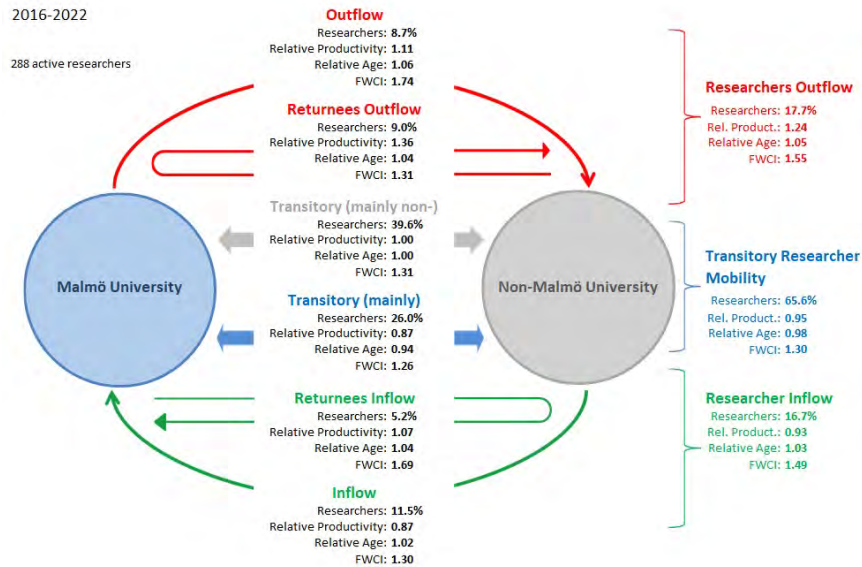
Linnaeus University (LNU)

Figure A.3.14: National researcher mobility at Linnaeus University, 2016–2022.



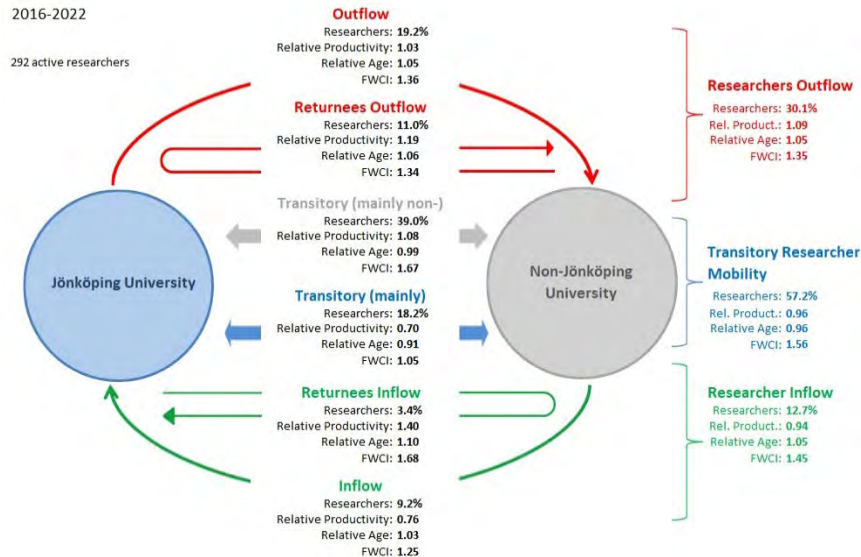
Malmö University (MaH)

Figure A.3.15: National researcher mobility at Malmö University, 2016–2022.



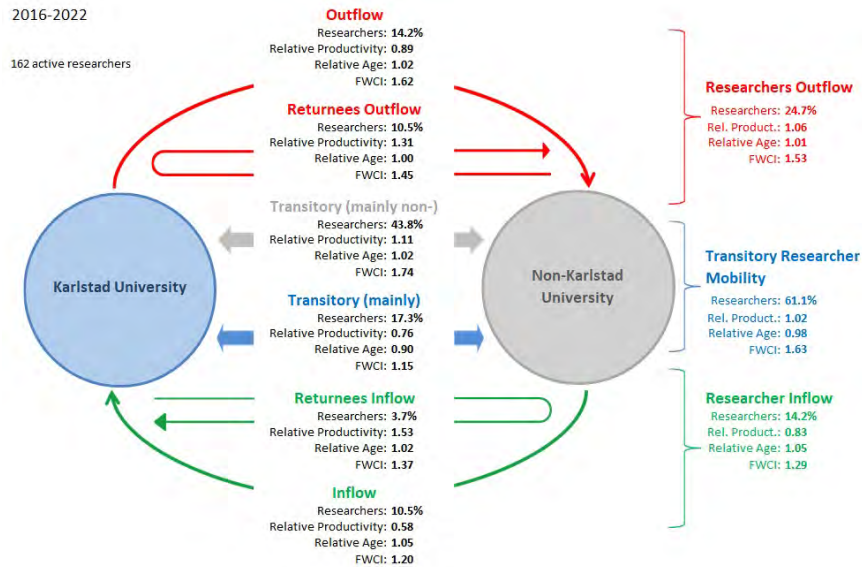
Jönköping University (JU)

Figure A.3.16: National researcher mobility at Jönköping University, 2016–2022.



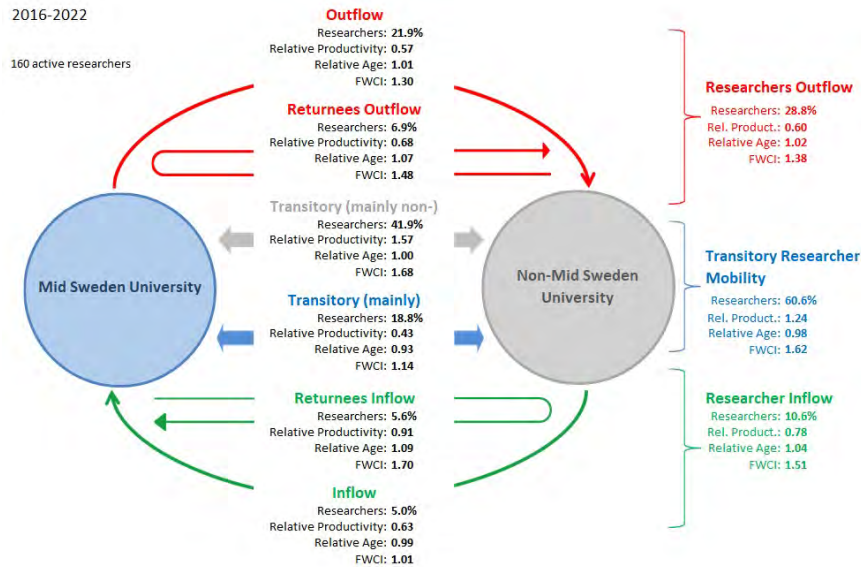
Karlstad University (KaU)

Figure A.3.17: National researcher mobility at Karlstad University, 2016–2022.



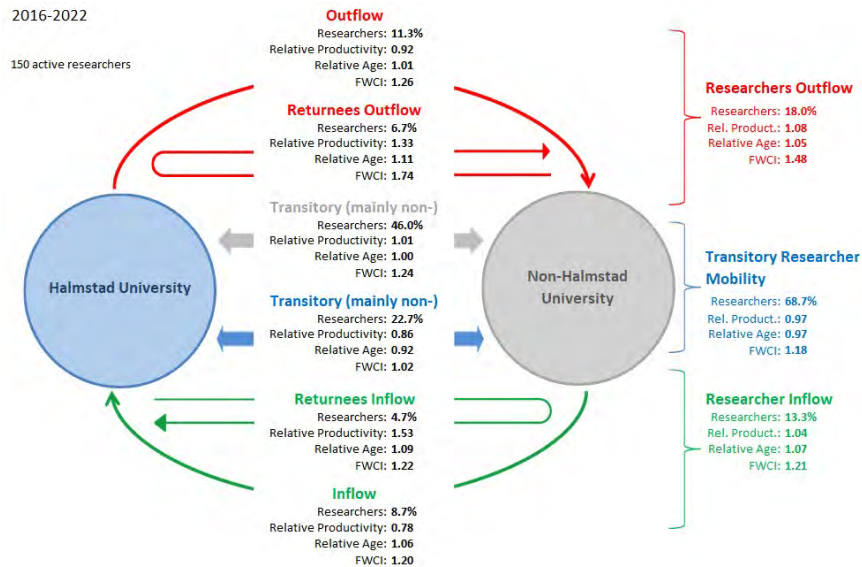
Mid Sweden University (MiU)

Figure A.3.18: National researcher mobility at Mid Sweden University, 2016–2022.



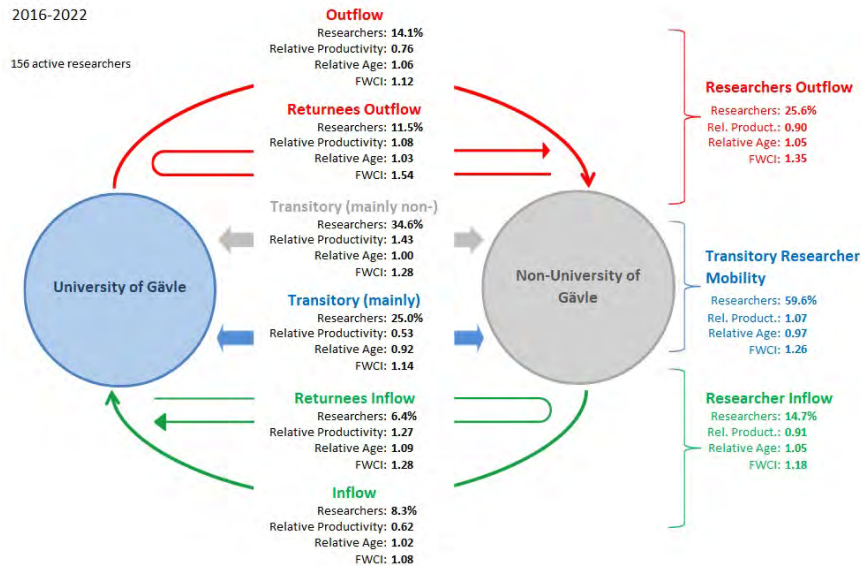
Halmstad University (HH)

Figure A.3.19: National researcher mobility at Halmstad University, 2016–2022.



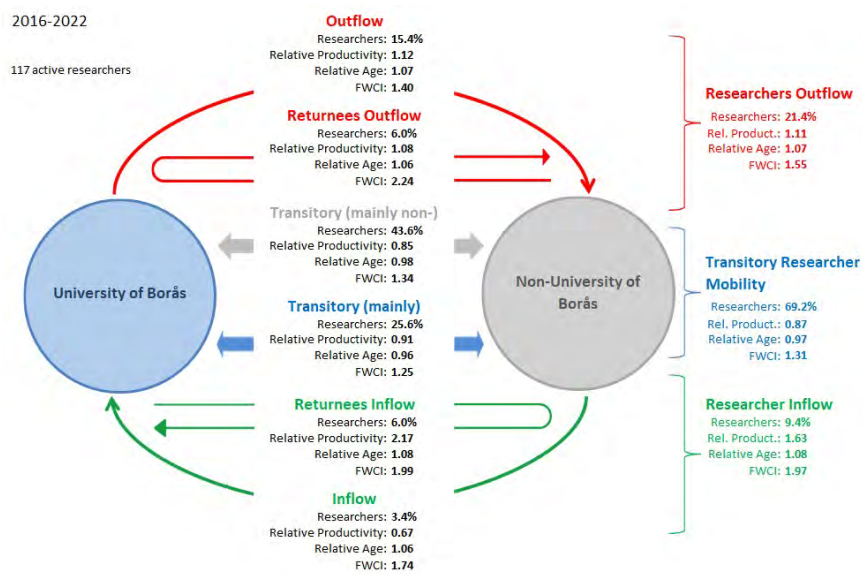
University of Gävle (HiG)

Figure A.3.20: National researcher mobility at University of Gävle, 2016–2022.



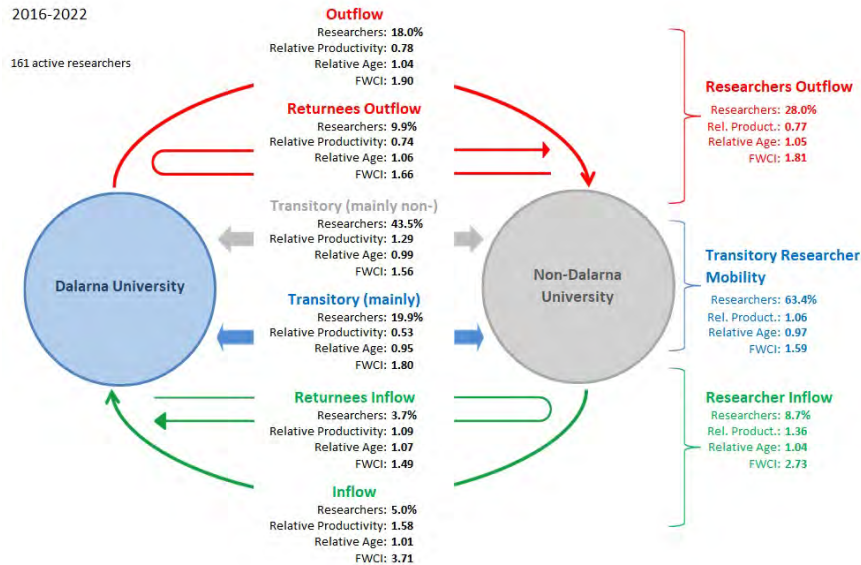
University of Borås (HB)

Figure A.3.21: National researcher mobility at University of Borås, 2016–2022.



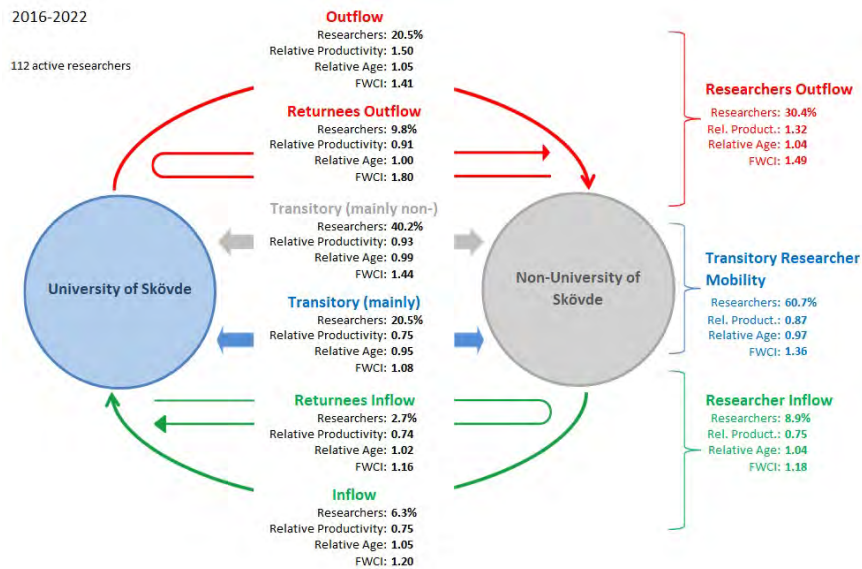
Dalarna University (Hda)

Figure A.3.22: National researcher mobility at Dalarna University, 2016–2022.



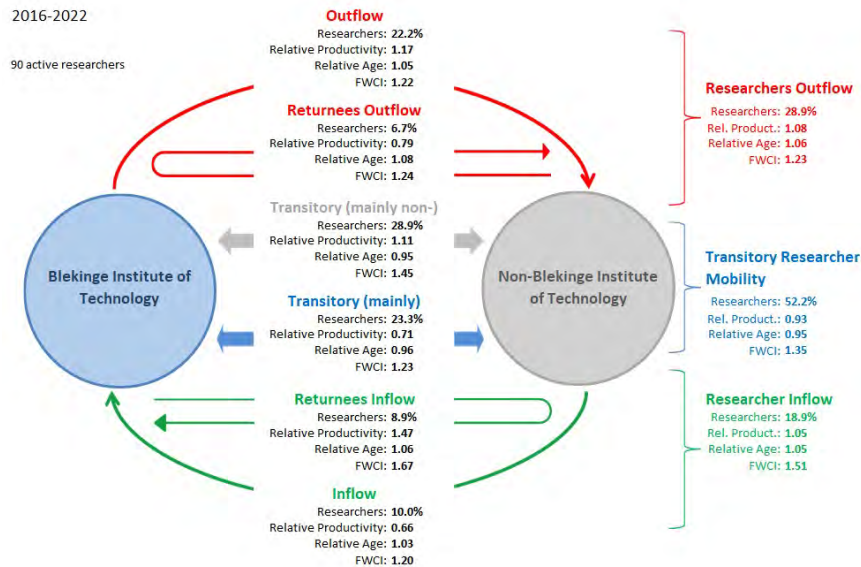
University of Skövde (HS)

Figure A.3.23: National researcher mobility at University of Skövde, 2016–2022.



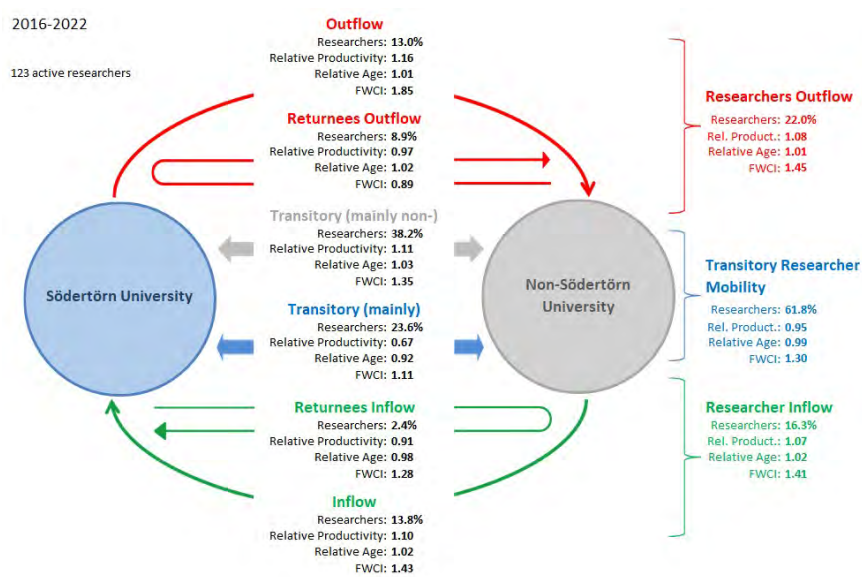
Blekinge Institute of Technology (BTH)

Figure A.3.24: National researcher mobility at Blekinge Institute of Technology, 2016–2022.



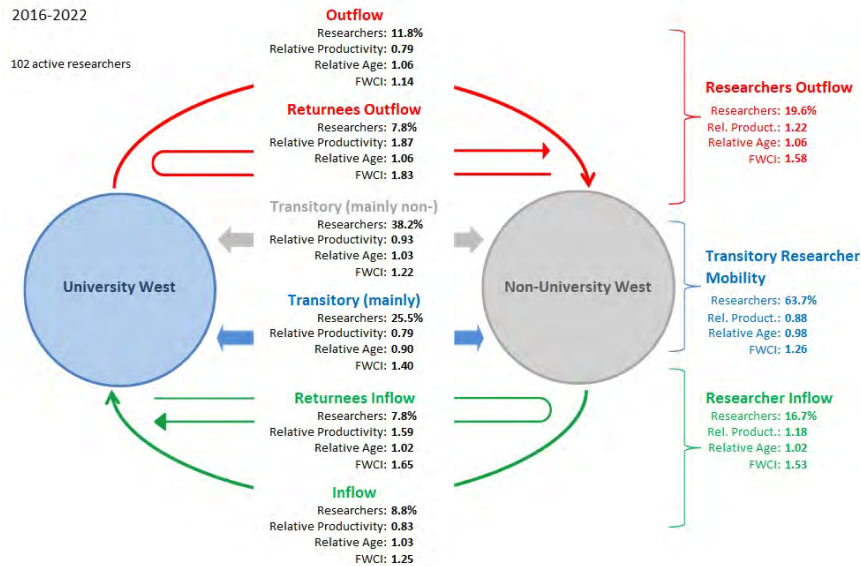
Södertörn University (SH)

Figure A.3.25: National researcher mobility at Södertörn University, 2016–2022.



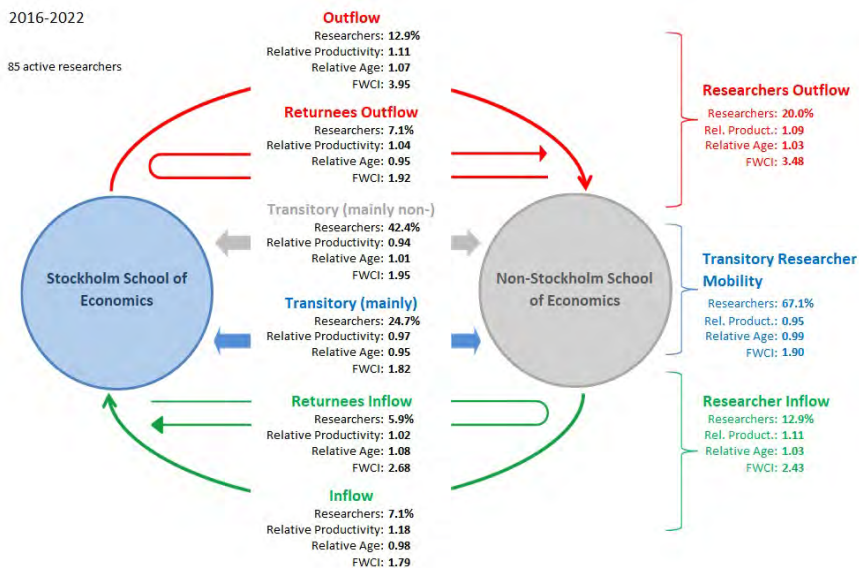
University West (HV)

A.3.26: National researcher mobility at University West, 2016–2022.



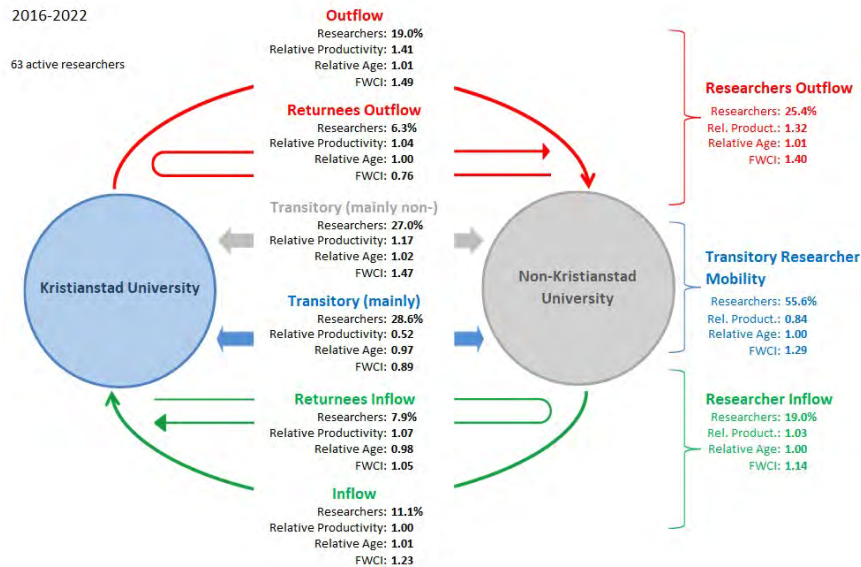
Stockholm School of Economics (HHS)

Figure A.3.27: National researcher mobility at Stockholm School of Economics, 2016–2022.



Kristianstad University (HKr)

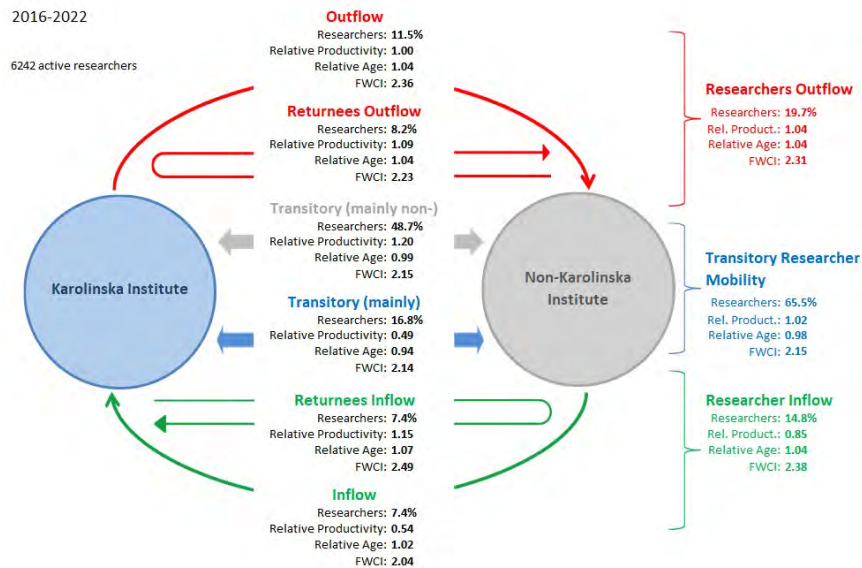
Figure A.3.28: National researcher mobility at Kristianstad University, 2016–2022.



A.4 International researcher mobility charts of HEIs (all)

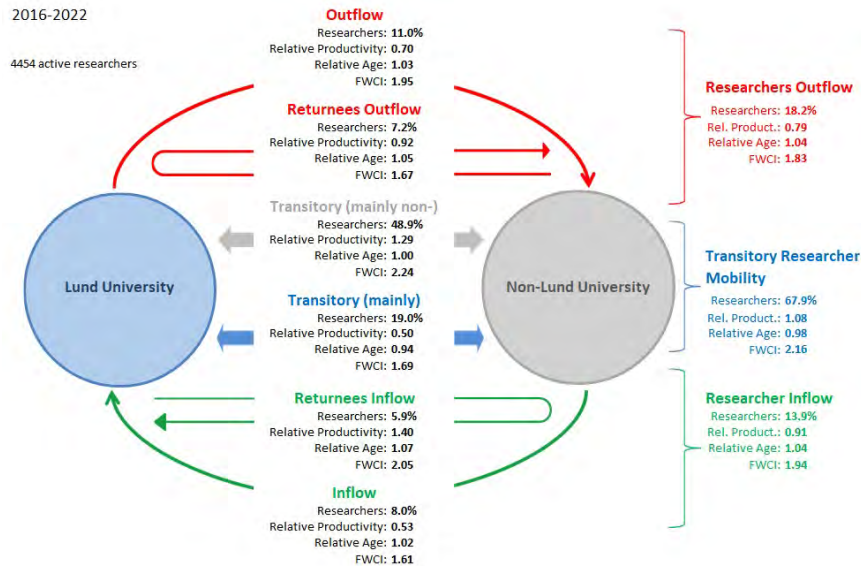
Karolinska Institutet (KI)

Figure A.4.1: International researcher mobility at Karolinska Institutet, 2016–2022.



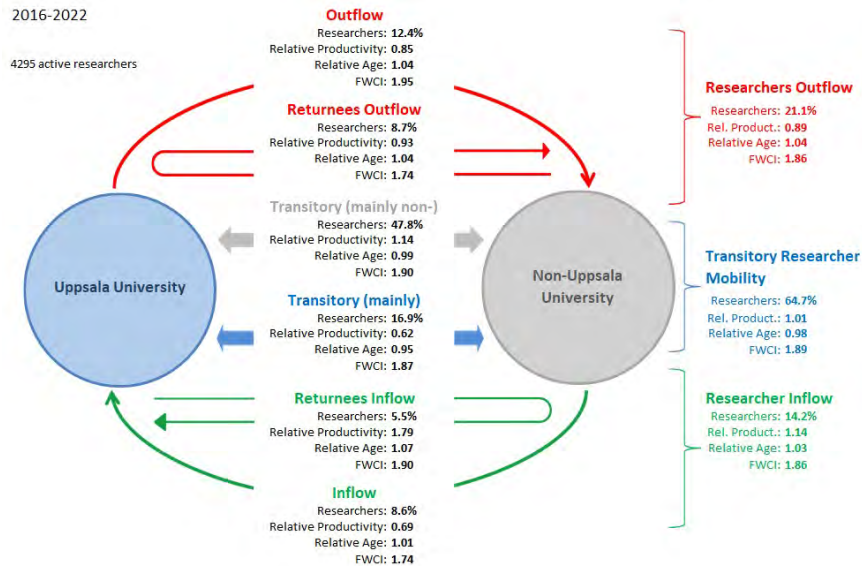
Lund University (LU)

Figure A.4.2: International researcher mobility at Lund University, 2016–2022.



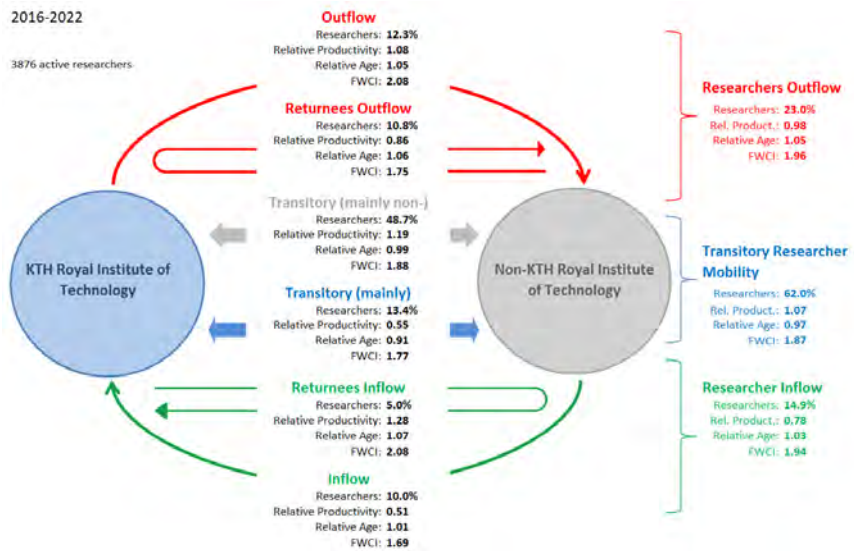
Uppsala University (UU)

Figure A.4.3: International researcher mobility at Uppsala University, 2016–2022.



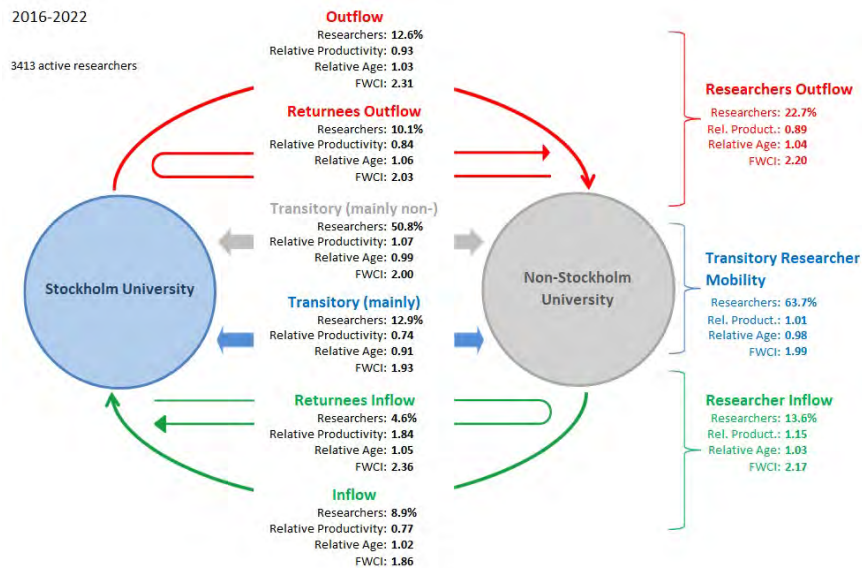
KTH Royal Institute of Technology (KTH)

Figure A.4.4: International researcher mobility at KTH Royal Institute of Technology, 2016–2022.



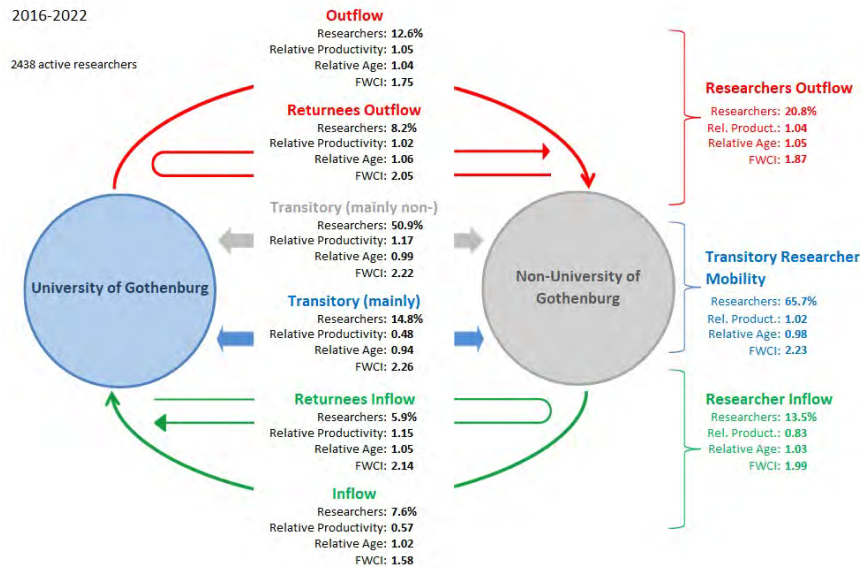
Stockholm University (SU)

Figure A.4.5: International researcher mobility at Stockholm University, 2016–2022.



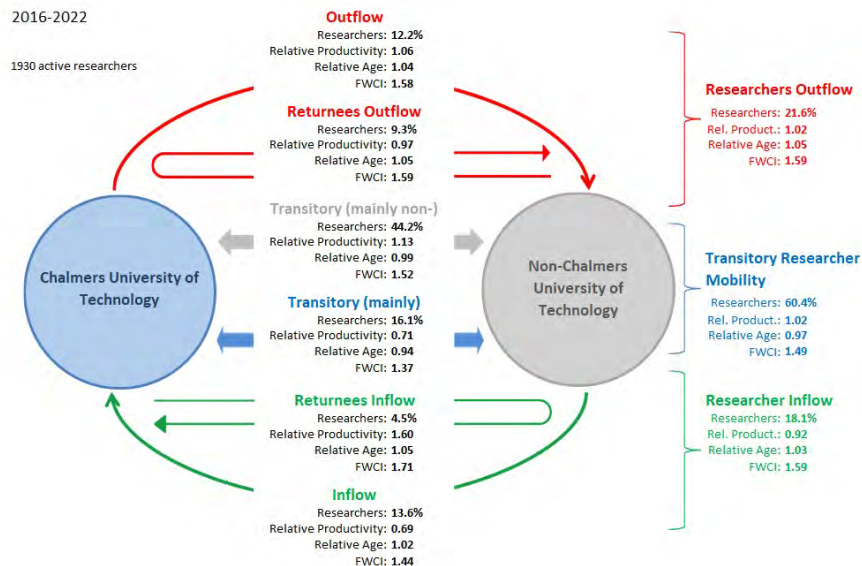
University of Gothenburg (GU)

Figure A.4.6: International researcher mobility at University of Gothenburg, 2016–2022.



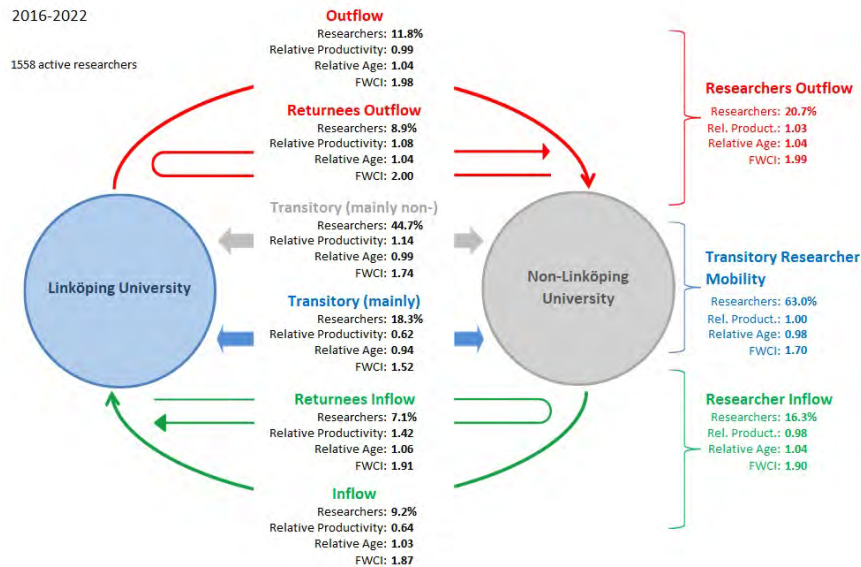
Chalmers University of Technology (CTH)

Figure A.4.7: International researcher mobility at Chalmers University of Technology, 2016–2022.



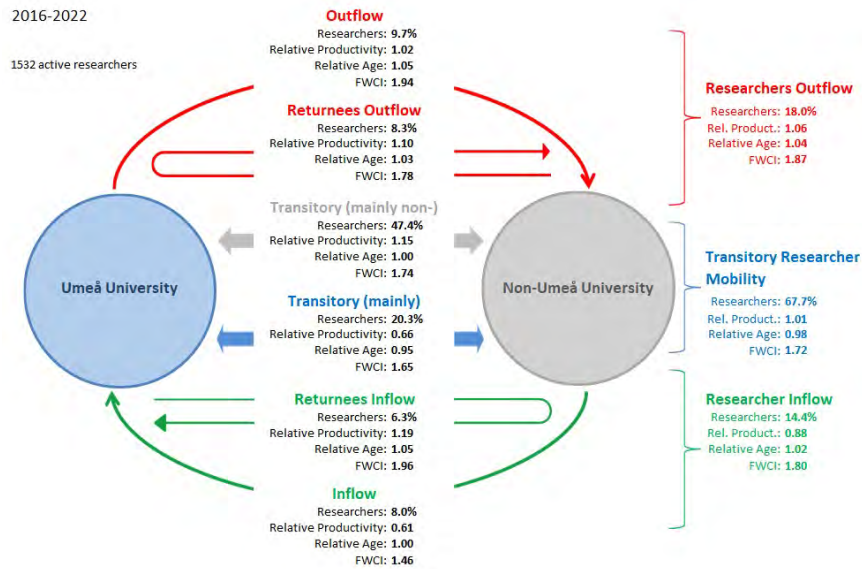
Linköping University (LiU)

Figure A.4.8: International researcher mobility at Linköping University, 2016–2022.



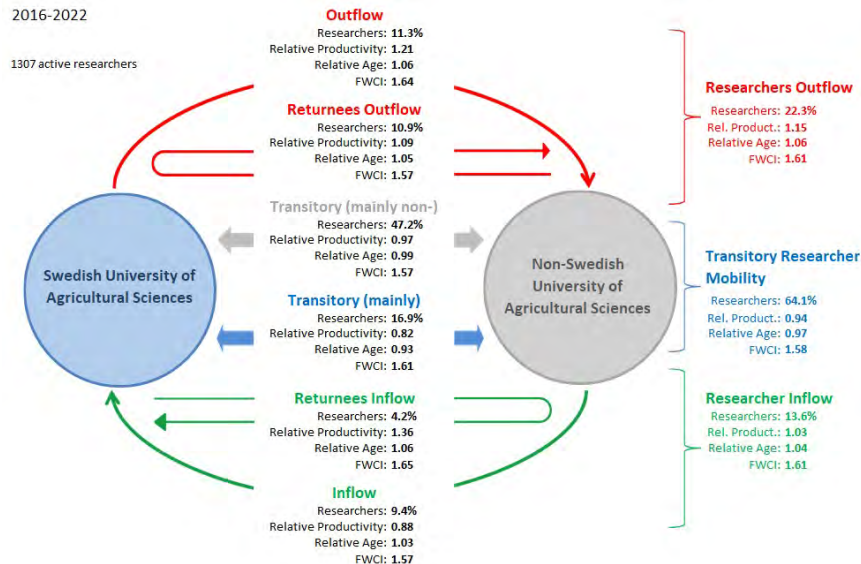
Umeå University (UmU)

Figure A.4.9: International researcher mobility at Umeå University, 2016–2022.



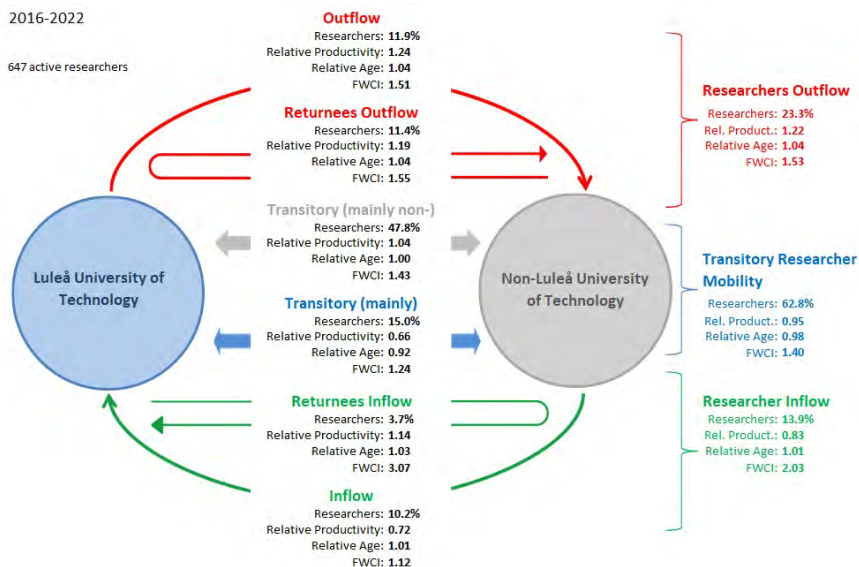
Swedish University of Agricultural Science (SLU)

Figure A.4.10: International researcher mobility at Swedish University of Agricultural Science, 2016–2022.



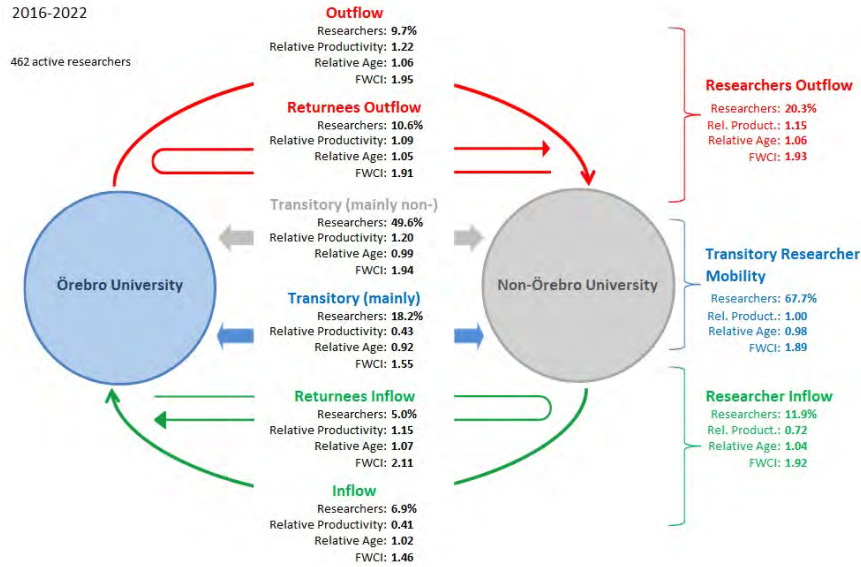
Luleå University of Technology (LTU)

Figure A.4.11: International researcher mobility at Luleå University of Technology, 2016–2022.



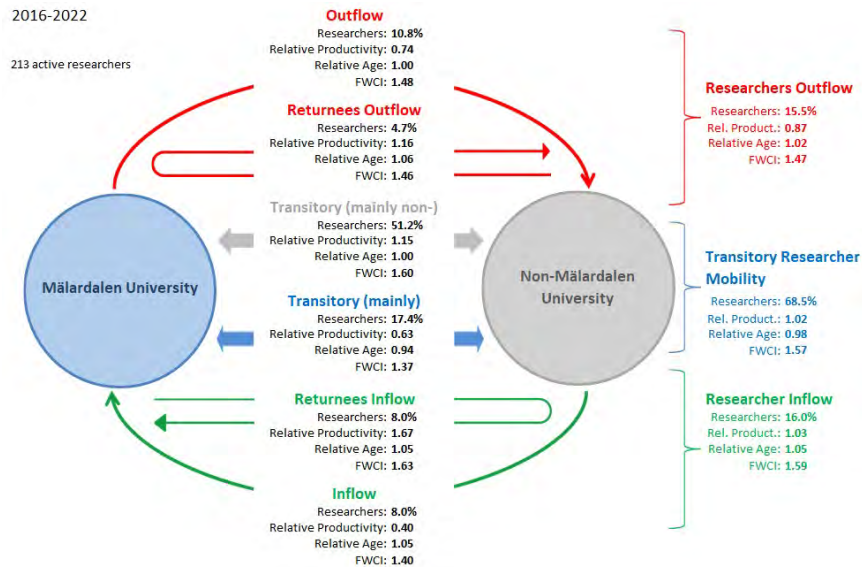
Örebro University (ÖU)

Figure A.4.12: International researcher mobility at Örebro University, 2016–2022.



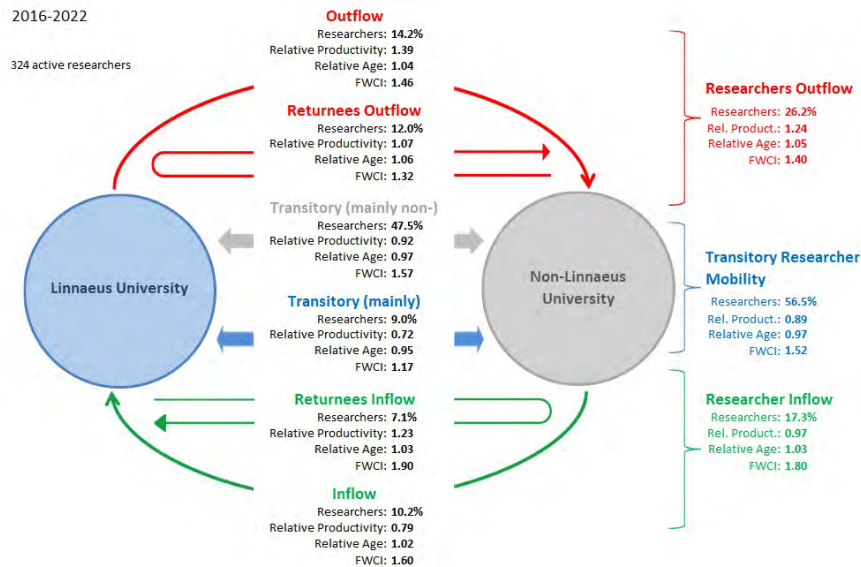
Mälardalen University (MdH)

Figure A.4.13: International researcher mobility at Mälardalen University, 2016–2022.



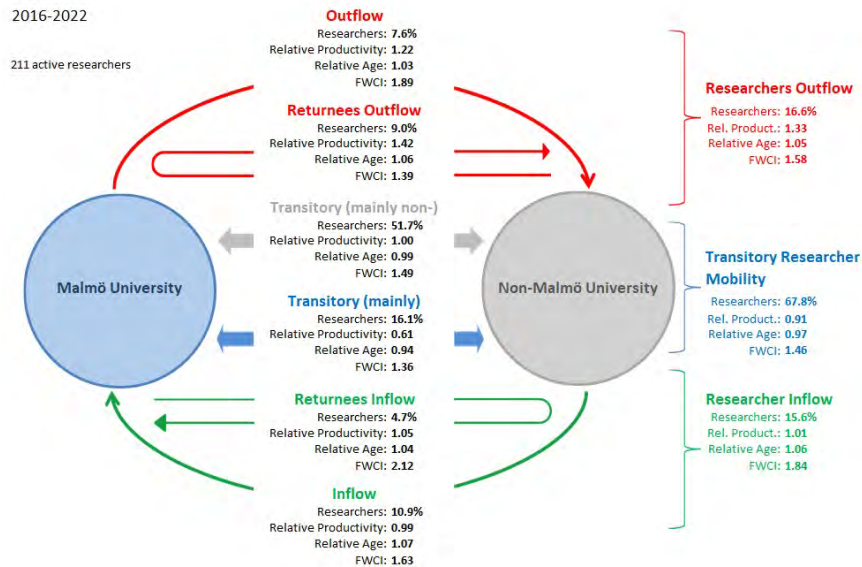
Linnaeus University (LNU)

Figure A.4.14: International researcher mobility at Linnaeus University, 2016–2022.



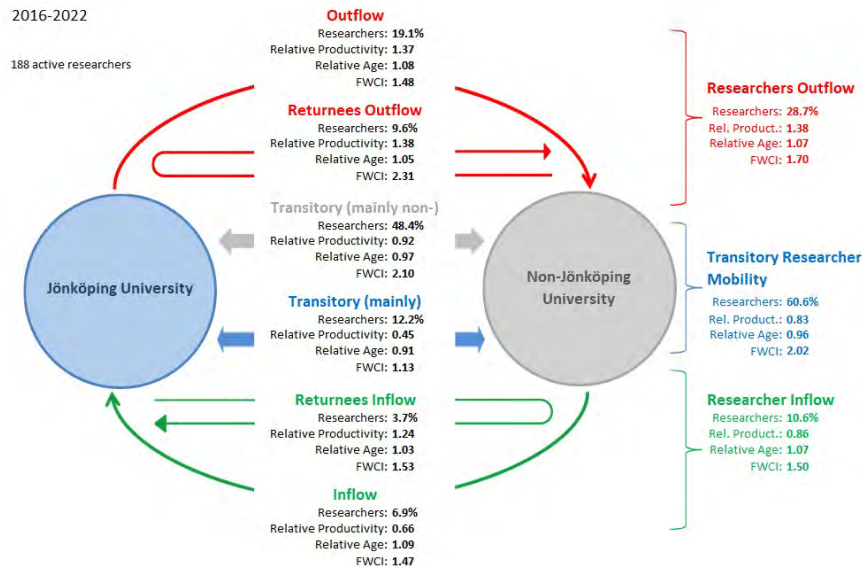
Malmö University (MaH)

Figure A.4.15: International researcher mobility at Malmö University, 2016–2022.



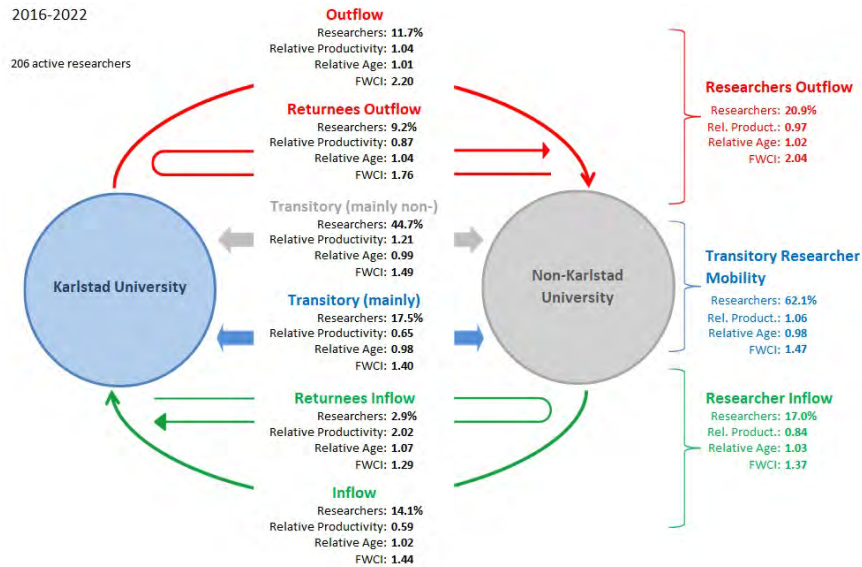
Jönköping University (JU)

Figure A.4.16: International researcher mobility at Jönköping University, 2016–2022.



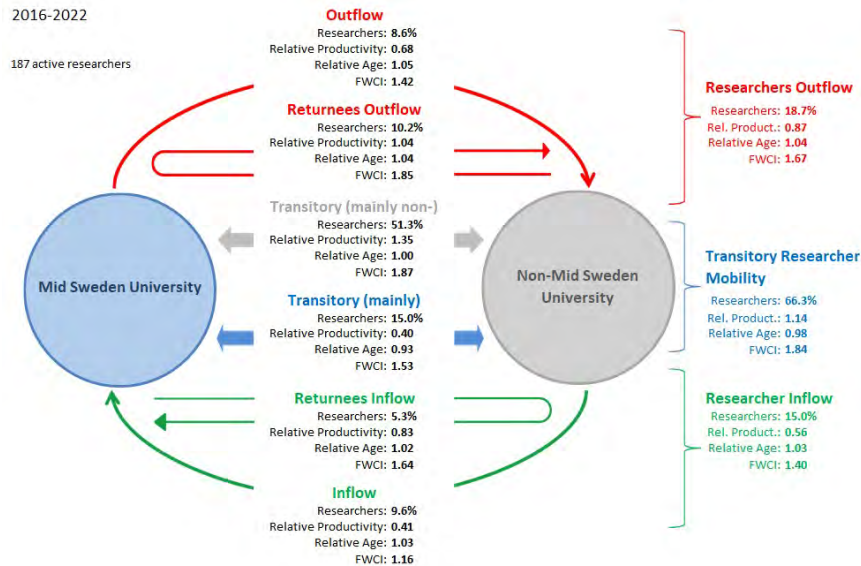
Karlstad University (KaU)

Figure A.4.17: International researcher mobility at Karlstad University, 2016–2022.



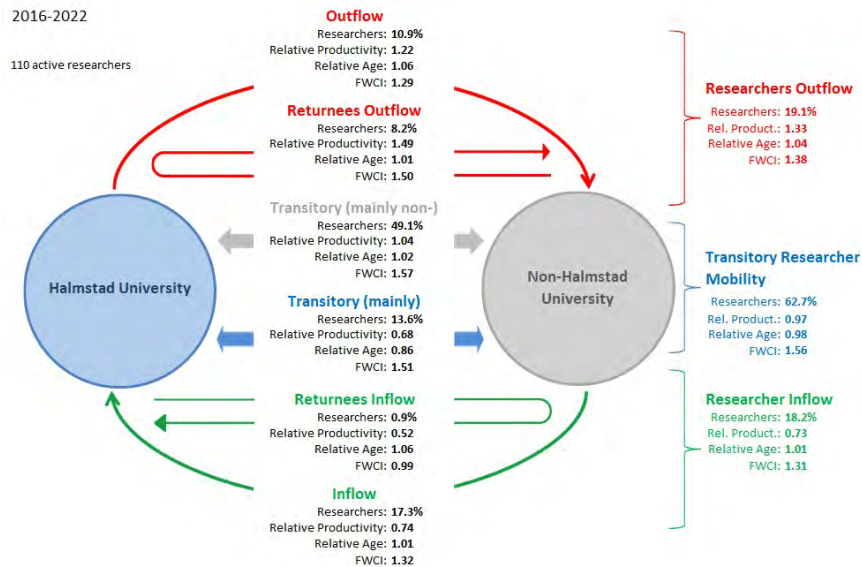
Mid Sweden University (MiU)

Figure A.4.18: International researcher mobility at Mid Sweden University, 2016–2022.



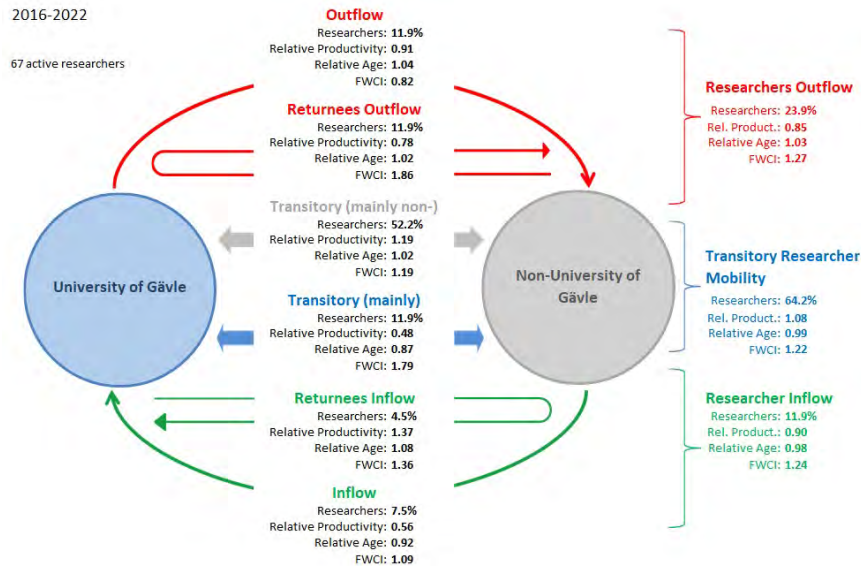
Halmstad University (HH)

Figure A.4.19: International researcher mobility at Halmstad University, 2016–2022.



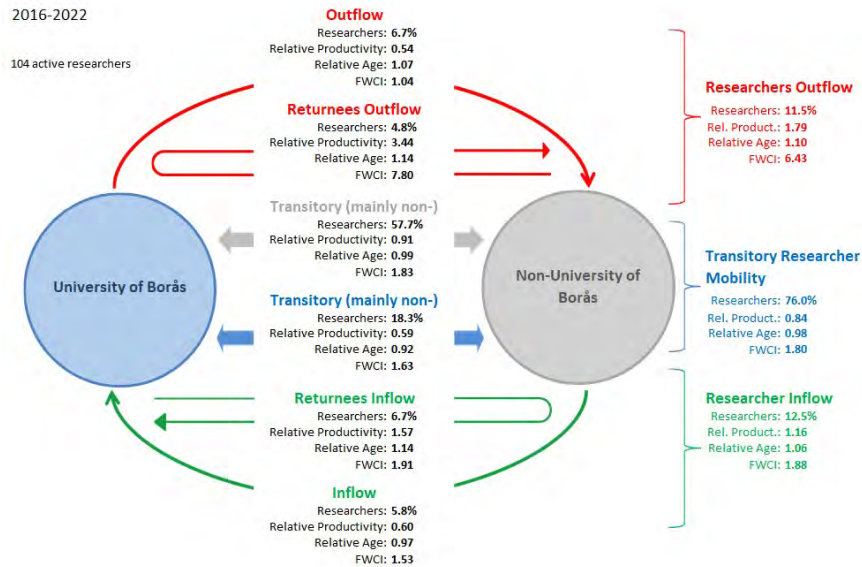
University of Gävle (HiG)

Figure A.4.20: International researcher mobility at University of Gävle, 2016–2022.



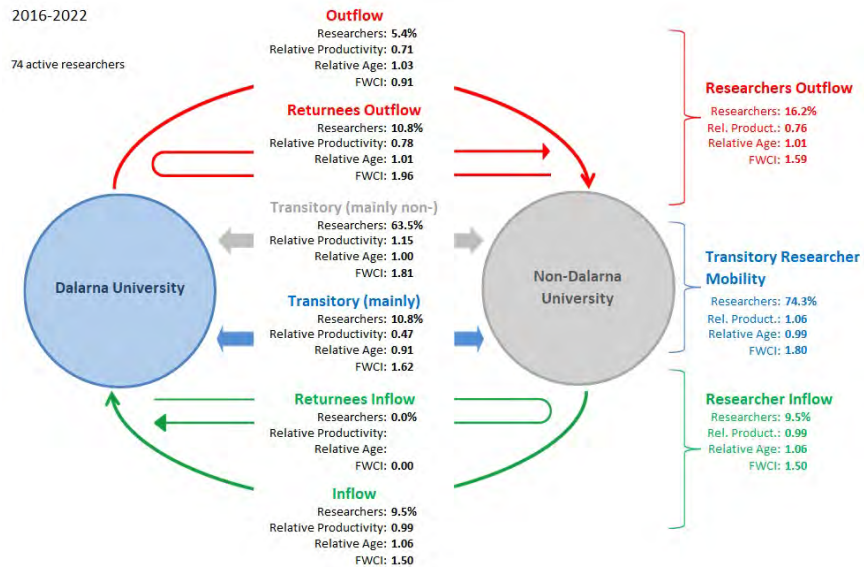
University of Borås (HB)

Figure A.4.21: International researcher mobility at University of Borås, 2016–2022.



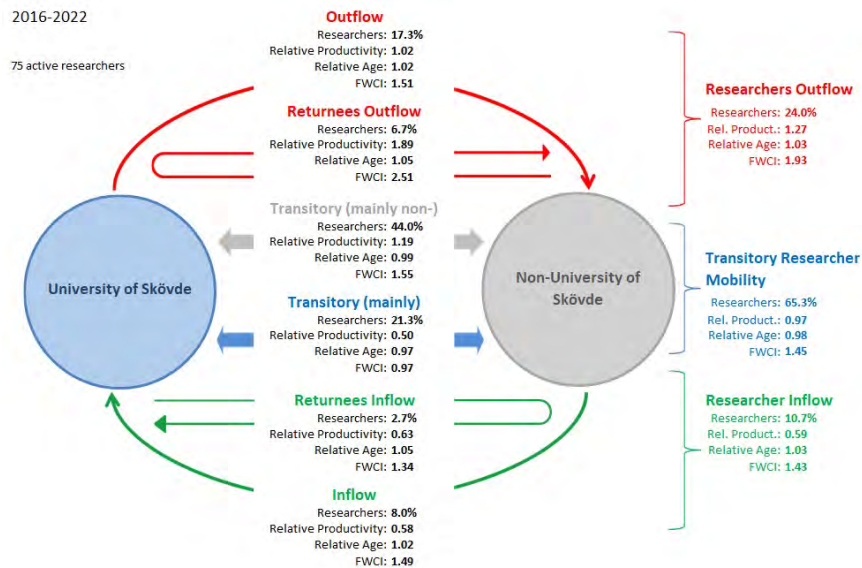
Dalarna University (HDa)

Figure A.4.22: International researcher mobility at Dalarna University, 2016–2022.



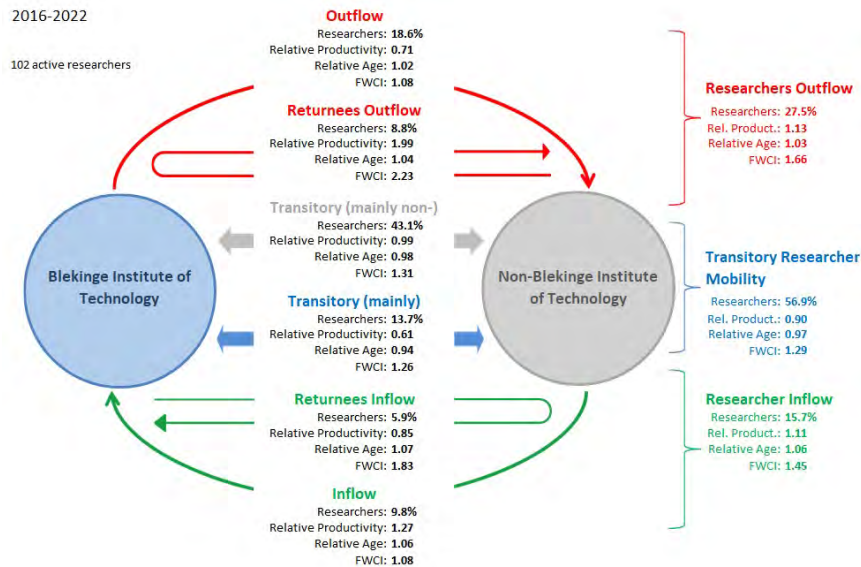
University of Skövde (HS)

Figure A.4.23: International researcher mobility at University of Skövde, 2016–2022.



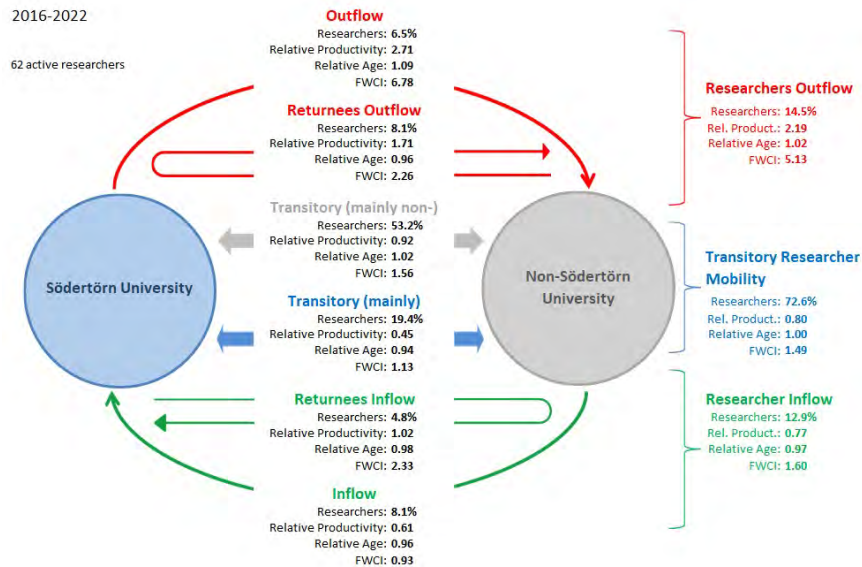
Blekinge Institute of Technology (BTH)

Figure A.4.24: International researcher mobility at Blekinge Institute of Technology, 2016–2022.



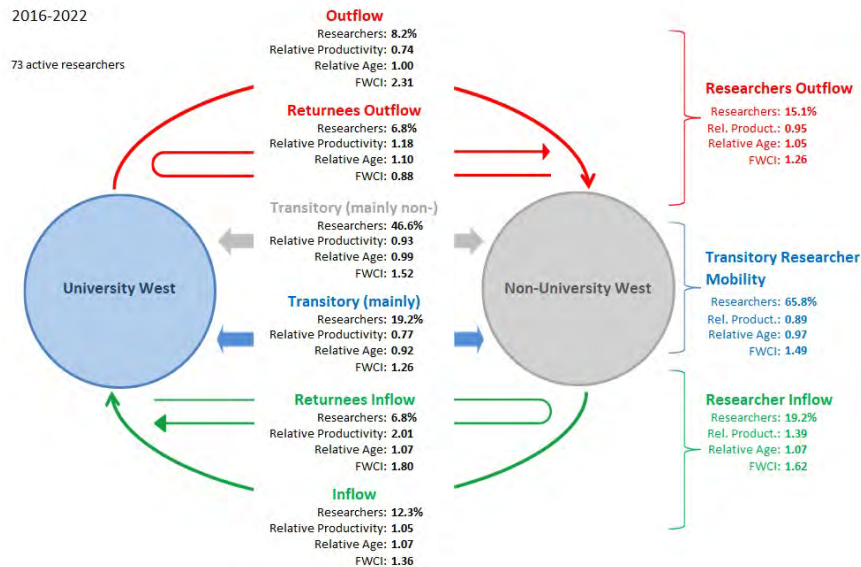
Södertörn University (SH)

Figure A.4.25: International researcher mobility at Södertörn University, 2016–2022.



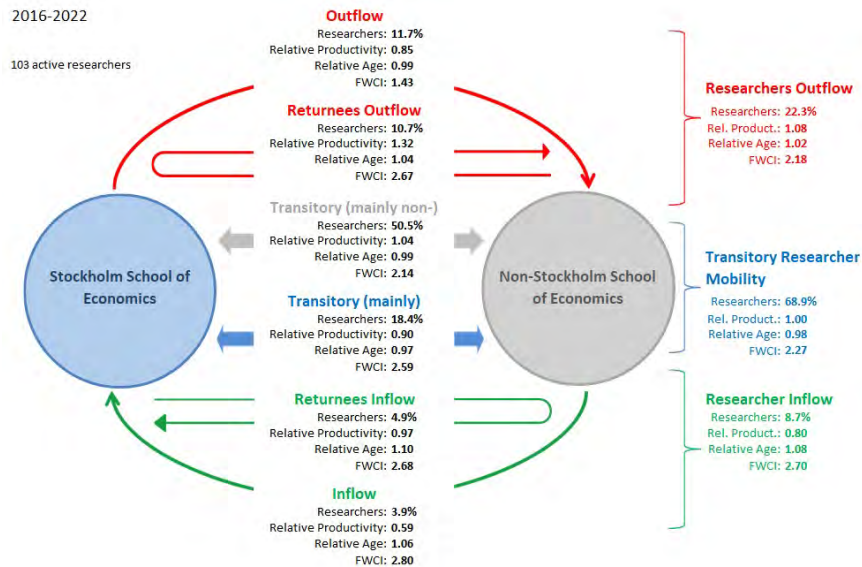
University West (HV)

Figure A.4.26: International researcher mobility at University West, 2016–2022.



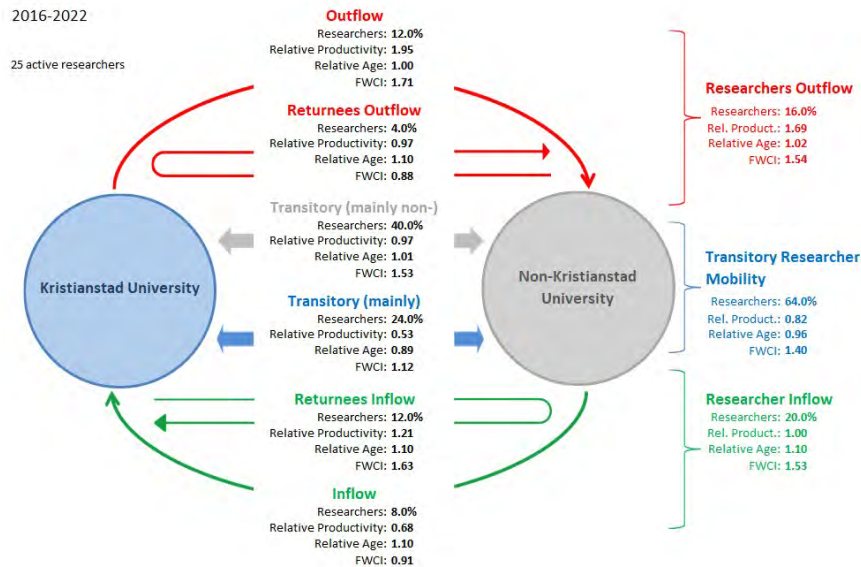
Stockholm School of Economics (HHS)

Figure A.4.27: International researcher mobility at Stockholm School of Economics, 2016–2022.



Kristianstad University (HKr)

Figure A.4.28: International researcher mobility at Kristianstad University, 2016–2022.



APPENDIX B: Defining Authors and Mobility

Defining Swedish Higher Education Institutions

The Swedish Foundation for International Cooperation in Research and Higher Education (STINT) requested that Elsevier analyse the following 28 Swedish higher education institutions (HEIs). Among these, 10 have been selected to be included in the report's narrative, based on the size of their publication output. For all others, mobility charts have been created.

Name	Acronym	Publication output (2016–2022)	Field-weighted citation impact	Mobility analysis chart	Mobility analysis narrative
Blekinge Institute of Technology	BTH	5,487	1.26	Yes	
Chalmers University of Technology	CTH	86,758	1.46	Yes	Yes
Dalarna University	HDa	5,430	1.65	Yes	
Halmstad University	HH	5,464	1.32	Yes	
Jönköping University	JU	11,024	1.46	Yes	
Karlstad University	KaU	9,559	1.46	Yes	
Karolinska Institutet	KI	346,778	2.06	Yes	Yes
Kristianstad University	HKr	2,051	1.19	Yes	
Linköping University	LiU	82,649	1.63	Yes	Yes
Linnaeus University	LNU	15,119	1.34	Yes	
Luleå University of Technology	LTU	30,092	1.32	Yes	
Lund University	LU	275,767	1.80	Yes	Yes
Mälardalen University	MdH	12,703	1.36	Yes	
Malmo University	MaH	10,504	1.36	Yes	
Mid Sweden University	MiU	11,627	1.34	Yes	
Örebro University	OU	32,486	1.65	Yes	
KTH Royal Institute of Technology	KTH	217,010	1.78	Yes	Yes

Södertörn University	SH	2,928	1.46	Yes	
Stockholm School of Economics	HHS	2,983	2.03	Yes	
Stockholm University	SU	180,819	1.94	Yes	Yes
Swedish University of Agriculture	SU	47,320	1.55	Yes	Yes
Umeå University	UmU	72,724	1.67	Yes	Yes
University of Borås	HB	4,975	1.68	Yes	
University of Gävle	HiG	5,756	1.21	Yes	
University of Gothenburg	GU	141,911	1.82	Yes	Yes
University of Skövde	HS	5,265	1.31	Yes	
University West	HV	4,072	1.50	Yes	
Uppsala University	UU	222,414	1.76	Yes	Yes

Assigning articles

Author profiles in Scopus

Scopus is the only database in the world which has invested in automatically grouping the publications it indexes into those published by a single affiliation. We have algorithmically created over 27 million author profiles, representing 8 million researchers, and these profiles can be manually updated and corrected.

These author profiles are not necessarily tied to the institution with which an author is affiliated for a given publication but rather span their entire career. In fact, using the raw publication data, it is possible to derive a chronological listing of all the institutional affiliations that an author has published in affiliation with, so it is possible to track the “research history” of an author.

Groups of publications belonging to one author are called Author Profiles, and they have two modes of input:

1. Publications are automatically grouped into Author Profiles using a multifactorial matching algorithm:
 - This algorithm looks for similarities on metadata such as author surname, first name and initials; e-mail address; affiliation; co-authors; subject area the author is active in; source title, publications date range, and keywords

entered by the author to match publications together. Users may notice that multiple name variants are grouped within one Author Profile, which indicates the value of this algorithm. Scopus makes use of an authoritative database that contains over 70,000 manually verified institutional name variants to match publications together.

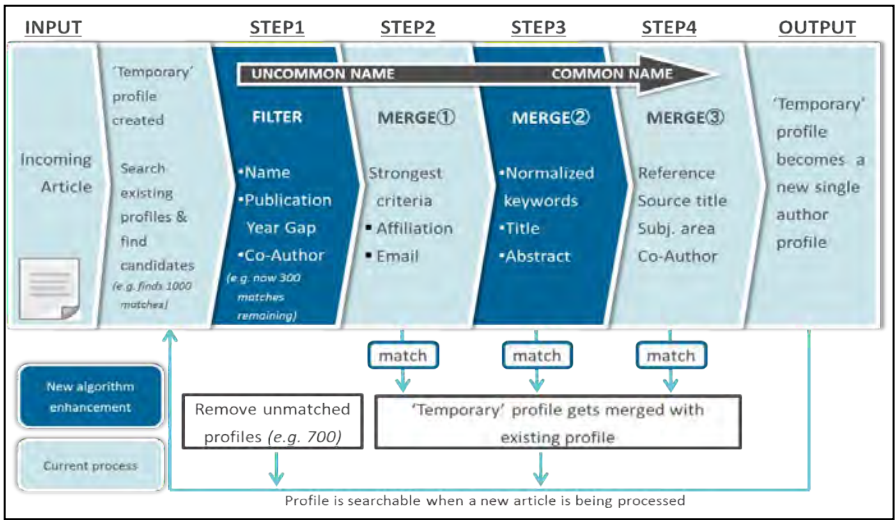
- The information provided by authors is not always consistent or complete, so that there is always some doubt about whether some publications belong together; in situations like these, a balance needs to be made between the precision, or accuracy, of matching, and the recall, or completeness of the groups formed, and increasing one will reduce the other.
- Scopus's strategy in terms of automatic disambiguation of authors and institutions is geared towards higher precision (accuracy) over recall. This means that if an author published in his career 100 publications, Scopus aims at assigning as many publications as possible to this author ensuring highest precision. In this example, a scenario of 90 publications grouped into one single profile - where by the accuracy of this assignment is 99% - and 10 other publications spread over 10 profiles thus: 90, 1,1,1,1,1,1,1,1,1,1 is preferred over a scenario where we have 99 in one profile (with an accuracy of 95%) and 1 in another thus: 99,1.

2. Publications are manually reassigned based on feedback.

- The matching algorithm can never be 100% correct because the data it is using to make the assignments is not 100% complete or consistent. The algorithm is therefore supplemented by feedback received from official authorities of the affiliation in question. These feedback channels include but are not limited to researchers who link their ORCID ID to their Scopus profile, researchers and librarian who manually provide feedback to Scopus through the author feedback wizard (either on their own or through a national research assessment exercise, such as REF 2014), and quality assured publication data from implementations of the Pure experts Portal.

Figure B.2: Process of Clustering Articles into Profiles

Affiliations, institutions, and countries in Scopus



Publications are automatically grouped into institutional affiliation profiles using a matching algorithm based on the metadata provided by the affiliation details provided by an author on a given record. Actual institutions often comprise multiple institutional affiliation profiles—for example, a medical school will have a separate institutional affiliation profile from the main university. For attributing authorship and citation credit, aggregation of numbers of publications and citations can be done at the level of one or multiple affiliation IDs.

Each affiliation profile has an associated name (institutional name) and geographic location (city, state/province, and country). For this project, all publications associated with affiliation profiles in each country were analysed.

Measuring international researcher mobility

The approach presented here uses Scopus author profile data to derive a history of active (HEI x) author affiliations recorded in authors' published articles and to assign them to mobility classes defined by the type and duration of observed moves.

How are individual researchers unambiguously identified in Scopus?

Scopus uses a sophisticated author-matching algorithm to precisely identify

articles by the same author. The Scopus Author Identifier gives each author a unique ID and groups together all the documents published by that author, matching alternate spellings and variations of the author's last name and distinguishing between authors with the same surname by differentiating on data elements associated with the article (such as affiliation, subject area, co-authors, and so on).

What does a '(HEI x) researcher' mean?

To define the initial population for this study, (HEI x) authors were identified as those that had listed (HEI x) as their affiliation on at least one publication (articles, reviews, and conference papers) published across the sources included in Scopus during the period 2016–2022. It is important to note that thusly defined '(HEI x) authors' are not necessarily currently in the employment of (HEI x). Authors of other institutions are defined similarly.

What is an 'active researcher'?

The (HEI x) authors identified include a large proportion with relatively few articles over the entire 19- year period of analysis. As such, it is assumed that they are not likely to represent career researchers, individuals who have left the research system. A productivity filter was therefore implemented to restrict the analysis to those authors that produced at least one publication in the last 5 years.

How are mobility classes defined?

The measurement of researcher mobility by co-authorship in the published literature is complicated by the difficulties involved in teasing out long-term mobility from short-term mobility (such as doctoral research visits, sabbaticals, secondments, etc.), which might be deemed instead to reflect a form of collaboration. In this study, stays of 2 years or more were considered migratory and were further subdivided into those where the researcher remained at their current institution or where they subsequently returned to their original institution. Stays of less than 2 years were deemed transitory and were also further subdivided into those who mostly published in affiliation with [HEI x] or mostly with other institutions. Authors are assumed to be from the institution where they first published (for migratory mobility) or from the institution where they published most of their articles (for transitory mobility). In individual cases, these criteria may result in authors being assigned migratory patterns that may not accurately reflect the real situation, but such errors may be assumed to be evenly distributed across the groups and so the overall pattern remains valid. Researchers without any apparent mobility based on their published affiliations were considered sedentary.

Migratory

- Outflow: active (HEI x) researchers whose Scopus author data for the period 2016–2022 indicates that they have moved from (HEI x) to another institution (or institutions) for at least 2 years without returning.
- Returnees Outflow: active (HEI x) researchers whose Scopus author profile data for the period 2016–2022 indicates that they have moved to (HEI x) from another institution (or institutions) for at least 2 years, and then subsequently migrated to another institution for at least 2 years.
- Total Outflow: the sum of Outflow and Returnee Outflow groups.
- Inflow: active (HEI x) researchers whose Scopus author data for the period 2016–2022 indicates that they have moved to (HEI x) from another institution for at least 2 years without leaving (HEI x).
- Returnees Inflow: active (HEI x) researchers whose Scopus author data for the period 2016–2022 indicates that they have moved from (HEI x) to another institution for at least 2 years, and then subsequently moved back to (HEI x) for at least 2 years.
- Total Inflow: the sum of Inflow and Returnee Inflow groups.

Transitory

- Transitory (mainly non-(HEI x)): active (HEI x) researchers whose Scopus author data for the period 2016–2022 indicates that they are affiliated with (HEI x) for less than 2 years at a time but are predominantly affiliated with another institution (or institutions).
- Transitory (mainly (HEI x)): active (HEI x) researchers whose Scopus author data for the period 2016–2022 indicates that they are affiliated with another institution (or institutions) for less than 2 years at a time but are predominantly affiliated with (HEI x).
- Total Transitory: the sum of Transitory (mainly non-(HEI x)) and transitory (mainly (HEI x)) groups.

Sedentary

- Sedentary: active (HEI x) researchers whose Scopus author data for the period 2016–2022 indicates that they have no published outside (HEI x).

What indicators are used to characterise each mobility group?

To better understand the composition of each group defined on the map, three aggregate indicators were calculated for each to represent the

productivity and seniority of the researchers they contain, and the field-weighted citation impact of their articles. Relative Productivity represents a measure of the articles per year since the first appearance of each researcher as an author during the period 2016–2022, relative to all (HEI x) researchers in the same period. Relative Seniority represents years since the first appearance of each researcher as an author during the period 2016–2022, relative to all (HEI x) researchers in the same period. Field-weighted citation impact is calculated for all articles in each mobility class. All three indicators are calculated for each author's entire output in the period (i.e., not just those articles listing a (HEI x) address for that author).

References

- Garfield, E. (1979). Is citation analysis a legitimate evaluation tool? *Scientometrics*, 1(4), 359-375. DOI: 10.1007/BF02019306
- Irvine, J., Martin, B. R., Abraham, J., & Peacock, T. (1987). Assessing basic research: Reappraisal and update of an evaluation of four radio astronomy observatories. *Research Policy*, 16(2-4), 213-227. DOI: 10.1016/0048-7333(87)90031-X
- Moed, H. F., Glanzel, W., & Schmoch, U. (Eds.). (2005). *Handbook of Quantitative Science and Technology Research*. Dordrecht: Kluwer Academic Publishers. DOI: 10.1007/1-4020-2755-9
- NordForsk. (2014) Policy Paper 3: Crossing Borders - Obstacles and incentives to researcher mobility. Retrieved from: https://www.nordforsk.org/en/publications/publications_container/crossing-borders-obstacles-and-incentives-to-researcher-mobility/view
- Pinski, G., & Narin, F. (1976). Citation influence for journal aggregates of scientific publications: Theory, with application to the literature of physics. *Information Processing & Management*, 12(5), 297-312. DOI: 10.1016/0306-4573(76)90048-0.
- Price, D. J. de S. (1977). Foreword in *Essays of an Information Scientist* (pp. v-ix)
- Scheerooren, S. (2016). Researcher Mobility in Swedish Higher Education Institutions: A study conducted for STINT by Elsevier's Analytical Services, September 2016. Retrieved from https://www.stint.se/wp-content/uploads/2018/07/Comparative_Researcher_Mobility_at_Swedish_R_16-01_2016.pdf
- Tijssen, R.J.W., & Van Leeuwen, T.N. (2003). Extended technical annex to chapter 5 of the 'Third European Report on S&T Indicators'; "Bibliometric Analyses of World Science". CWTS, Leiden University. ftp://ftp.cordis.europa.eu/pub/indicators/docs/3rd_report_bibliotext_methodology.pdf

STINT, The Swedish Foundation for International Cooperation in Research and Higher Education, was set up by the Swedish Government in 1994 with the mission to internationalise Swedish higher education and research.

STINT promotes knowledge and competence development within internationalisation and invests in internationalisation projects proposed by researchers, educators and leaderships at Swedish universities.



STINT

Stiftelsen för internationalisering av
högre utbildning och forskning

The Swedish Foundation for International
Cooperation in Research and Higher Education

Wallingatan 2, SE-111 60 Stockholm, Sweden
Telephone +46 8 671 19 90. Fax +46 8 671 19 99
info@stint.se www.stint.se