Indicator Book

2019

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Mapping; like with like

Institutional Ranking

Teaching and Learning

Bachelor graduation rate

Level	Institutional
Dimension	Teaching and Learning
Definition	The percentage of new entrants that successfully completed their bachelor programme.
Rationale	The graduation rate shows how well the university's programmes are organised and reflects the effectiveness of its teaching.
Data source	Institution questionnaire
Data elements	Number of bachelor degrees awarded in period T (average of 2015-2017); Number of new entrants in bachelor programmes (in period T-x, x being the standard length of bachelor programmes in years).
Time reference	average 2015-2017
Grouping method	Standard (median and 25% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{graduates ba}_{t-i}}{\sum_{i=0}^{2} \text{new entrants ba}_{t-x-i}} * 100$

t=standard reference year (2017); x=standard length of bachelor programme

Teaching and Learning

Masters graduation rate

Level	Institutional
Dimension	Teaching and Learning
Definition	The percentage of new entrants that successfully completed their master programme.
Rationale	The graduation rate shows how well the university's programmes are organised and reflects the effectiveness of its teaching.
Data source	Institution questionnaire
Data elements	Number of master degrees awarded in period T (average of 2015-2017); Number of new entrants in master programmes (in period T-x, x being the standard length of master programmes in years).
Time reference	average 2015-2017
Grouping method	Standard (median and 20% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{graduates ma}_{t-i}}{\sum_{i=0}^{2} \text{new entrants ma}_{t-x-i}} * 100$

t=standard reference year (2017); x=standard length of master programme

Teaching and Learning

Graduating on time (bachelors)

Level	Institutional
Dimension	Teaching and Learning
Definition	The percentage of graduates that graduated within the time expected (normative time) for their bachelor programme.
Rationale	The time to degree reflects how well the university's programmes are organised and shows the effectiveness of its teaching.
Data source	Institution questionnaire
Data elements	Number of graduates that graduated within the time expected for their bachelor programme; Number of bachelor degrees awarded
Time reference	average 2015-2017
Grouping method	Standard (median and 25% bandwidth)
Formula	$\sum_{i=0}^{2} \frac{\text{graduates ba within normative time}_{t-i}}{\text{ba degrees awarded}_{t-i}} * 100$

t=standard reference year(2017)

Teaching and Learning

Graduating on time (masters)

Level	Institutional
Dimension	Teaching and Learning
Definition	The percentage of graduates that graduated within the time expected (normative time) for their masters programme.
Rationale	The time to degree reflects how well the university's programmes are organised and shows the effectiveness of its teaching.
Data source	Institution questionnaire
Data elements	Number of graduates that graduated within the time expected for their master programme; Number of master degrees awarded
Time reference	average 2015-2017
Grouping method	Standard (median and 20% bandwidth)
Formula	$\sum_{i=0}^{2} \frac{\text{graduates master within normative time}_{t-i}}{\text{master degrees awarded}_{t-i}} * 100$

t=standard reference year(2017)

Research

Citation rate

Level	Institutional
Dimension	Research
Definition	The average number of times the university's research publications (over the period 2014-2017) are cited in other research; adjusted (normalized) at the global level to take into account differences in publication years and to allow for differences in citation customs across academic fields.
Rationale	Indicator of the scientific impact of research outputs within international scientific communities. The measure takes into account differences in citation customs across academic fields ('normalisation').
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	Mean Normalised Citation Rate
Time reference	period 2014-2017
Grouping method	Standard (median and 25% bandwidth)
Formula	

Research

Research publications (absolute numbers)

Level	Institutional
Dimension	Research
Definition	The number of university's research publications (indexed in the Web of Science Core Collections database), where at least one author is affiliated to the source university or higher education institution.
Rationale	The number of publications in academic journals is a measure of the institution's research activity and its capability in producing research publications at the international level.
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	number of research publications
Time reference	period 2014-2017
Grouping method	
Formula	

Research

Research publications (size-normalised)

Level	Institutional
Dimension	Research
Definition	The number of research publications (indexed in the Web of Science database), where at least one author is affiliated to the university (relative to the number of students).
Rationale	The number of publications in academic journals is a measure of the institution's research activity and its capability to produce research publications at the international level. Correcting for the size of the institution (student enrollments) enables f
Data source	CWTS/Web of Science external sources (IAU database; internet)
Data elements	number of research publications;
Time reference	period 2014-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\text{total number of research publications}_{2012-2016}}{\text{total number of students enrolled}_{2015}}$

Research

External research income

Level	Institutional
Dimension	Research
Definition	Revenue for research that is not part of a core (or base) grant received from the government. Includes research grants from national and international funding agencies, research councils, research foundations, charities and other non-profit organizations. Measured in € 1,000s, using Purchasing Power Parities (PPP). Expressed per fte academic staff.
Rationale	The indicator expresses the institution's success in attracting grants in national and international competitive, peer reviewed programmes. This reflects the quality of an institution's research.
Data source	institution questionnaire
Data elements	Revenue for research that is not part of a core (or base) grant received from the government. PPP (GDP) in euros
Time reference	average 2015-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{research revenues from external sources}_{t-i} / \text{PPP (GDP) in €}_{t-i}}{\sum_{i=0}^{2} \text{fte academic staff}_{t-i}} * 100$

t=standard reference year(2017)

Research

Art related output

Level	Institutional
Dimension	Research
Definition	The number of research related scholarly outputs in the creative and performing arts, relative to the full-time equivalent (fte) number of academic staff.
Rationale	This measure recognises outputs other than research publications and reflects all tangible research-based outputs such as musical compositions, designs, artifacts, software, et cetera.
Data source	Institution questionnaire
Data elements	Number of art related outputs (concerts, exhibitions, artefacts, media productions) academic staff (fte)
Time reference	average 2015-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{art related outputs}_{t-i}}{\sum_{i=0}^{2} \text{fte academic staff}_{t-i}} * 100$
	t=standard reference year(2017)

Research

Top cited publications

Level	Institutional
Dimension	Research
Definition	The proportion of the university's research publications that, compared to other publications in the same field and in the same year, belong to the top 10% most frequently cited worldwide.
Rationale	This is a measure of international research excellence. Departments with well over 10% of their publications in the top percentile of frequently cited articles worldwide are among the top research institutes worldwide.
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	The number of publications of a university that, compared with other publications in the same field and in the same year, belong to the top 10% most frequently cited. total publication output
Time reference	Publications 2014-2017; citations up to and including 2018
Grouping method	Standard (median and 25% bandwidth)
Formula	$\frac{\text{score on top cited publications}}{\text{total publication output}} * 100$

Research

Interdisciplinary publications

Level	Institutional
Dimension	Research
Definition	Extent to which reference lists of university's publications reflect cited publications in journals from different scientific disciplines.
Rationale	The more a publication refers to publications belonging to different fields of science and the larger the distance between these fields, the higher the degree of interdisciplinarity.Given that the frontiers of research are often at the edge of discipline,
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	Interdisciplinary scientific publication output Total publication output
Time reference	period 2014-2017
Grouping method	Standard (median and 25% bandwidth)
Formula	$\text{interdisciplinarity score of individual publication}: I^{pub} = \frac{1}{m^2}\sum_{i}^{j} d_{ij}$ $\text{interdisciplinarity score of an institution}: I^{inst} = \left(\frac{1}{n}\sum_{k} \#(I_k^{pub} \geq I_{threshold}^{pub})\right) * 100$

m=number of references in the publication to other WoS-indexed publications; dij=distance between the field of reference i and the field of reference j;
n=number of publications of the institution
I pub;k=interdisciplinarity score of publication k;
I p

Research

Post-doc positions

Level	Institutional
Dimension	Research
Definition	The number of post-doc positions relative to the number of academic staff (headcount).
Rationale	As post doc positions are often externally (and competitively) funded, an institution with more post-doc positions is more likely to have a higher research quality.
Data source	Institution questionnaire
Data elements	Post doc positions (headcount) Academic staff (headcount)
Time reference	average 2015-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{postdoc positions}_{t-i}}{\sum_{i=0}^{2} \text{fte academic staff}_{t-i}} * 100$

t=standard reference year(2017)

Research

Professional publications

Level	Institutional
Dimension	Research
Definition	The number of professional publications per fte academic staff. Professional publications are all publications published in journals, books, and other media that are addressed to a professional audience and that can be traced bibliographically. These publications are not peer reviewed as in the category "academic publications".
Rationale	Professional publications are all publications published in journals, books, and other media that are addressed to a professional audience and that can be traced bibliographically. These publications are not peer reviewed as in the category "academic publ
Data source	institution questionnaire
Data elements	Number of professional publications; fte academic staff
Time reference	average 2015-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{professional publications}_{t-i}}{\sum_{i=0}^{2} \text{fte academic staff}_{t-i}} * 100$

t=standard reference year(2017)

Knowledge Transfer

Co-publications with industrial partners

Level	Institutional
Dimension	Knowledge Transfer
Definition	The percentage of the university's research publications that list an author affiliate with an address referring to a for-profit business enterprises or private sector R&D unit (excludes for-profit hospitals and education organisations).
Rationale	The more research is carried out with external partners the more likely it is that knowledge transfer takes place between academia and business.
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	The number of all the university's research publications that list an author affiliate with an address that refers to a business enterprise or a private sector R&D unit. Total publication output
Time reference	period 2014-2017
Grouping method	Standard (median and 25% bandwidth)
Formula	$\frac{\text{score on co} - \text{publications with industry}}{\text{total publication output}} * 100$

Knowledge Transfer

Income from private sources

Level	Institutional
Dimension	Knowledge Transfer
Definition	External research revenues from private sources (e.g. projects funded by industry,private businesses; NGOs); revenues from Continuing Professional Development (CPD) activities; revenues from licensing, copyrighted products and royalties. Revenues from tuition fees are not included. Measured in €1,000s using Purchasing Power Parities. Expressed per FTE academic staff.
Rationale	The degree to which research is funded by external, private organisations reflects aspects of its research quality - most notably its success in attracting funding and research contracts from end-user sources.
Data source	Institution questionnaire
Data elements	External research revenues from private sources (e.g. projects funded by industry,private businesses; NGOs); revenues from Continuing Professional Development (CPD) activities; revenues from licensing, copyrighted products and royalties. Revenues from tui
Time reference	average 2015-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$$\frac{\sum_{i=0}^{2} \text{revenues from private source}_{t-i} \,/\, \text{PPP (GDP) in €}_{t-i}}{\sum_{i=0}^{2} \text{fte academic staff}_{t-i}} * 100$$

t=standard reference year(2017)

Knowledge Transfer

Patents awarded (absolute numbers)

Level	Institutional
Dimension	Knowledge Transfer
Definition	The number of patents assigned to (inventors working in) the university (over the period 2005-2014).
Rationale	The number of patents is an established measure of technology transfer as it indicates the degree to which discoveries and inventions made in academic institutions may be transferred to economic actors for further industrial / commercial development.
Data source	CWTS/PATSTAT database
Data elements	counts on the level of patent families
Time reference	period 2005-2014
Grouping method	Log normalised (median and 25% bandwidth)
Formula	

Knowledge Transfer

Patents awarded (size-normalised)

Level	Institutional
Dimension	Knowledge Transfer
Definition	The number of patents assigned to (inventors working in) the university over the period 2005-2014 (per 1,000 students).
Rationale	The number of patents is an established measure of technology transfer as it indicates the degree to which discoveries and inventions made in academic institutions are transferred to economic actors for further industrial/commercial development. Correctin
Data source	CWTS/PATSTAT database
Data elements	The number of patents assigned to (inventors working in) the institution Total number of students enrolled
Time reference	period 2005-2014
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\text{number of patents assigned to the institution}_{2004-2013}}{\text{total number of students enrolled}_{2015}} * 100$

Knowledge Transfer

Industry co-patents

Level	Institutional
Dimension	Knowledge Transfer
Definition	The percentage of the number of patents assigned to (inventors working in) the university over the period 2005-2014, which were co-applied with at least 1 applicant from the industry.
Rationale	If the university applies for a patent with a private firm this reflects that it shares its knowledge with external partners and shows the extent to which it is willing to share its technological inventions for further commercial development.
Data source	CWTS/PATSTAT database
Data elements	Patents Co-patents with industry
Time reference	period 2005-2014
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\text{number of co}-\text{patents with industry}_{2005-2014}}{\text{number of patents}_{2005\text{-}2014}} * 100$

Knowledge Transfer

Spin-offs

Level	Institutional
Dimension	Knowledge Transfer
Definition	The number of spin-offs (i.e. firms established on the basis of a formal knowledge transfer arrangement between the institution and the firm) recently created by the institution (per 1000 fte academic staff)
Rationale	A new firm that is based on knowledge created in a university signals a successful case of knowledge transfer from academia to industry.
Data source	Institution questionnaire
Data elements	Start-up firms Academic staff (fte)
Time reference	average 2015-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{new start - up firms}_{t-i}}{\sum_{i=0}^{2} \text{fte academic staff}_{t-i}} * 100$
	t=standard reference year(2017)

Knowledge Transfer

Publications cited in patents

Level	Institutional
Dimension	Knowledge Transfer
Definition	The percentage of the university's research publications that were mentioned in the reference list of at least one international patent (as included in the PATSTAT database).
Rationale	This indicator reflects the technological relevance of scientific research at the university, in the sense that it explicitly contributed, in some way, to the development of patented technologies
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	Research publications Publications cited in patents
Time reference	period 2005-2014
Grouping method	Standard (median and 25% bandwidth)
Formula	$\frac{\text{score on publications cited in patents}_{2005-2014}}{\text{total publication output}_{2005-2014}} * 100$

Knowledge Transfer

Income from continuous professional development

Level	Institutional
Dimension	Knowledge Transfer
Definition	The percentage of the university's total revenues that is generated from activities delivering Continuous Professional Development courses and training.
Rationale	When a university is very active in providing continuing education courses to companies and private individuals it transfers knowledge to its environment.
Data source	Institution questionnaire
Data elements	Total income Income from CPD
Time reference	average 2015-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{income from CPD}_{t-i}}{\sum_{i=0}^{2} \text{total income}_{t-i}} * 100$

t=standard reference year(2017)

Knowledge Transfer

Graduate Companies

Level	Institutional
Dimension	Knowledge Transfer
Definition	The number of companies newly founded by graduates per 1000 graduates.
Rationale	The number of companies newly founded by graduates refers to any company that graduates of the higher education institution have founded. Any type of registered company (for profit/not for profit; small/large; manufacturing/service/consultancy) may be rep
Data source	institution questionnaire
Data elements	number of graduate companies; total number of graduates
Time reference	average 2015-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{companies newly founded by graduates}_{t-i}}{\sum_{i=0}^{2} \text{total number of graduates}_{t-i}} * 1000$

t=standard reference year(2017)

International Orientation

Foreign language bachelor programmes

Level	Institutional
Dimension	International Orientation
Definition	The percentage of bachelor programmes that are offered in a foreign language.
Rationale	Offering degree programmes in a foreign language signals the commitment of the university to welcome foreign students and to prepare its students for working in an international environment.
Data source	Institution questionnaire
Data elements	Bachelor programmes in foreign language Bachelor programmes
Time reference	2017 or latest available
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\text{bachelor programmes offered in foreign language}_t}{\text{number of bachelor programmes offered}_t} * 100$

t=standard reference year(2017)

International Orientation

Foreign language master programmes

Level	Institutional
Dimension	International Orientation
Definition	The percentage of masters programmes that are offered in a foreign language.
Rationale	Offering masters programmes in a foreign language testifies the commitment of the university to welcome foreign students and to prepare its students for working in an international environment.
Data source	Institution questionnaire
Data elements	Master programmes in foreign language Master programmes offered
Time reference	2017 or latest available
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\text{master programmes offered in foreign language}_t}{\text{number of master programmes offered}_t} * 100$

t=standard reference year(2017)

International Orientation

Student mobility

Level	Institutional
Dimension	International Orientation
Definition	A composite of international incoming exchange students, outgoing exchange students and students in international joint degree programmes.
Rationale	Having an international student body and offering students the opportunity to do part of their degree abroad signals the international orientation of the university.
Data source	Institution questionnaire
Data elements	Incoming students; Students sent out in international exchange programmes; students in joint degree programmes Total enrolment
Time reference	average 2015-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	*This indicator consists of three subindicators: % incoming exchange students, % exchange students sent out and % of students in international joint degree programmes.* *Since the ranges of scores on these indicators differ the scores are normalised (z-scores). The composite indicator value is calculated as the mean of the normalised scores on the three subindicators. If a score on one or two subindicators is missing, the score is based on two or one subindicator.* *The resulting composite indicator has a range between -0,8 and 5,3. To create a score that is between 0 and 1 the scores are rescaled. For this rescaling the formula $(x_i\text{-min})/(\text{max-min})$ is used*

International Orientation

International academic staff

Level	Institutional
Dimension	International Orientation
Definition	The percentage of academic staff (on a headcount basis) with foreign citizenship.
Rationale	Having an international academic staff reflects the international orientation of the university and its attractiveness as an employer for foreign academics.
Data source	Institution questionnaire
Data elements	Academic staff (headcount; excluding doctorate candidates counted as staff) International academic staff (headcount; excluding doctorate candidates counted as staff)
Time reference	average 2015-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{academic staff with foreign nationality (headcount)}_{t-i}}{\sum_{i=0}^{2} \text{academic staff (headcount)}_{t-i}} * 100$

t=standard reference year(2017)

International Orientation

International joint publications

Level	Institutional
Dimension	International Orientation
Definition	The percentage of the university's research publications that list at least one affiliate author's address located in another country.
Rationale	The number of international joint publications reflects the degree to which a university's research is connected to international networks.
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	International joint research publications Research publications
Time reference	period 2014-2017
Grouping method	Standard (median and 15% bandwidth)
Formula	$\frac{\text{score on international co} - \text{publications}_{2011-2014}}{\text{total publication output}_{2011-2014}} * 100$

International Orientation

International doctorate degrees

Level	Institutional
Dimension	International Orientation
Definition	The percentage of doctorate degrees that are awarded to international doctorate candidates.
Rationale	The number of doctorate degrees awarded to international candidates reflects the international orientation of an institution
Data source	Institution questionnaire
Data elements	Number of doctorate degrees awarded to international doctorate candidates; Total number odoctorate degrees awarded. Doctorate degrees awarded
Time reference	average 2015-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{doctorate degrees to candidates with foreign nationality (headcount)}_{t-i}}{\sum_{i=0}^{2} \text{doctorate degrees awarded (headcount)}_{t-i}} * 100$

t=standard reference year(2017)

Regional Engagement

Bachelor graduates working in the region

Level	Institutional
Dimension	Regional Engagement
Definition	The percentage of bachelor graduates who found a job in the region where the university is located within 18 months after graduation.
Rationale	If a relatively large number of an institution's graduates is working in the region this reflects strong linkages between the university and its regional partners
Data source	Institution questionnaire
Data elements	Proportion (or range) indicated.
Time reference	2017 or latest available
Grouping method	categorised question
Formula	

Regional Engagement

Master graduates working in the region

Level	Institutional
Dimension	Regional Engagement
Definition	The percentage of masters graduates who found a job in the region where the university is located within 18 months after graduating.
Rationale	If a relatively large number of an institution's graduates is working in the region this reflects strong linkages between the university and its regional partners
Data source	Institution questionnaire
Data elements	Proportion (or range) indicated.
Time reference	2017 or latest available
Grouping method	categorised question
Formula	

Regional Engagement

Student internships in the region

Level	Institutional
Dimension	Regional Engagement
Definition	Out of all the university's students who did an internship, the percentage where the internship was with a company or organisation located in the region.
Rationale	Internships of students in regional enterprises are a means to build co-operations with regional partners and connect students to the local labour market.
Data source	Institution questionnaire
Data elements	Internships in regional/local enterprises Internships
Time reference	average 2015-2017
Grouping method	Standard (median and 20% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{students in internships in the region}_{t-i}}{\sum_{i=0}^{2} \text{students in internships}_{t-i}} * 100$

t=standard reference year(2017)

Regional Engagement

Regional joint publications

Level	Institutional
Dimension	Regional Engagement
Definition	The percentage of the university's research publications that list at least one co-author with an affiliate address located in the same spatial region (within a distance of 50 km).
Rationale	Co-publications with authors located elswhere in the institution's geographical region are a reflection of regional linkages between the university and regional partners.
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	Number of research publications that list at least one affiliate address of co-authors in the same 'region' (50 km range) Total publication output
Time reference	period 2014-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\text{score on regional co} - \text{publications}_{2011-2014}}{\text{total publication output}_{2011-2014}}$

Regional Engagement

Income from regional sources

Level	Institutional
Dimension	Regional Engagement
Definition	The proportion of external research revenues - apart from government or local authority core/ recurrent grants – that comes from regional sources (i.e. industry, private organisations, charities).
Rationale	A high proportion of income from regional/local sources indicates a more intense relationship between the university and the region
Data source	Institution questionnaire
Data elements	percentage indicated
Time reference	average 2015-2017
Grouping method	Log normalised (median and 25% bandwidth)
Formula	

Regional engagement

Strategic research partnerships in the region

Level	Institutional
Dimension	Regional engagement
Definition	The number of strategic research partnerships with partners in the region as a percentage of the total number of strategic research partnerships
Rationale	strategic partnerships with a focus on research indicate the commitment of HEI and its environment to engage in research collaboration. This collaboration is likely to focused on applied research activities. Academic staff as the denominator is an adequat
Data source	institution questionnaire
Data elements	number of strategic research partnerships; number of strategic research partnerships with business in the region; number of strategic research partnerships with civic organisations in the region
Time reference	average 2015-2017
Grouping method	Standard (median and 25% bandwidth)
Formula	$$\frac{\sum_{i=0}^{2} \text{strategic research partnerships}_{t-i}}{\sum_{i=0}^{2} \text{strategic research parnterships in the region}_{t-i}} * 100$$

t=standard reference year(2017)

Teaching and Learning (descriptive)

Relative BA graduate unemployment

Level	Institutional
Dimension	Teaching and Learning (descriptive)
Definition	The percentage of bachelor graduates unemployment 18 months after graduation.
Rationale	Although dependant on regional economic situation and labour market this indicator confers some indication of the employability of graduates
Data source	Institution questionnaire
Data elements	
Time reference	2017 or latest available
Grouping method	categorised question
Formula	

Teaching and Learning (descriptive)

Relative MA graduate unemployment

Level	Institutional
Dimension	Teaching and Learning (descriptive)
Definition	The percentage of master graduates unemployment 18 months after graduation.
Rationale	Although dependant on regional economic situation and labour market this indicator confers some indication of the employability of graduates
Data source	institution questionnaire
Data elements	
Time reference	2017 or latest available
Grouping method	categorised question
Formula	

Teaching and Learning (descriptive)

Graduation rate long first degree

Level	Institutional
Dimension	Teaching and Learning (descriptive)
Definition	The percentage of new entrants that successfully completed their long first degree programme.
Rationale	The graduation rate shows how well the university's programmes are organised and reflects the effectiveness of its teaching.
Data source	institution questionnaire
Data elements	Number of long first degrees awarded in period T (average of 2015-2017)Number of new entrants in long first degree programmes (in period T-x, x being the standard length of long first programmes in years).
Time reference	average 2015-2017
Grouping method	Standard (median and 25% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{graduates long first}_{t-i}}{\sum_{i=0}^{2} \text{new entrants long first}_{t-x-i}} * 100$
	t=standard reference year(2017); x=standard period of study

Teaching and Learning (descriptive)

Graduating on time (long first degree)

Level	Institutional
Dimension	Teaching and Learning (descriptive)
Definition	The percentage of graduates that graduated within the time expected (normative time) for their long first degree programme.
Rationale	The time to degree reflects how well the university's programmes are organised and shows the effectiveness of its teaching.
Data source	institution questionnaire
Data elements	
Time reference	average 2015-2017
Grouping method	Standard (median and 25% bandwidth)
Formula	$\frac{\sum_{i=0}^{2} \text{graduates long first degree programmes within normative time}_{t-i}}{\sum_{i=0}^{2} \text{graduates long first degree programmes}_{t-i}} * 100$

t=standard reference year(2017)

Teaching and Learning (descriptive)

Relative graduate unemployment long first degree

Level	Institutional
Dimension	Teaching and Learning (descriptive)
Definition	The percentage of long first degree programme graduates unemployment 18 months after graduation.
Rationale	Although dependant on regional economic situation and labour market this indicator confers some indication of the employability of graduates
Data source	institution questionnaire
Data elements	
Time reference	2017 or latest available
Grouping method	Categorised question
Formula	

Research (descriptive)

Publication output

Level	Institutional
Dimension	Research (descriptive)
Definition	Number of all research publications included in the institution's publications databases, where at least one author is affiliated to the institution (per fte academic staff)
Rationale	The number of publications is seen as an important indicator for the involvement in research. The indicator adds to the citation based indicator as it allows for journals not covered in the citation databases (discipline and language related)
Data source	institution questionnaire
Data elements	
Time reference	average 2015-2017
Grouping method	
Formula	$\frac{\sum_{i=0}^{2} \text{research publications}_{t-i}}{\sum_{i=0}^{2} \text{fte academic staff}_{t-i}} * 100$

t=standard reference year(2017)

International Orientation (descriptive)

Foreign language long first degree programmes

Level	Institutional
Dimension	International Orientation (descriptive)
Definition	The percentage of long first degree programmes that are offered in a foreign language.
Rationale	Offering degree programmes in a foreign language signals the commitment of the university to welcome foreign students and to prepare its students for working in an international environment.
Data source	institution questionnaire
Data elements	
Time reference	2017 or latest available
Grouping method	Log normalised (median and 25% bandwidth)
Formula	$\frac{\text{long first degree programmes offered in foreign language}_t}{\text{long first degree programmes offered}_t} * 100$

t=standard reference year(2017)

Subject Ranking

Teaching and Learning

Student-staff ratio

Level	Department
Dimension	Teaching and Learning
Definition	The number of students (headcount) per member of the academic staff (fte). Staff solely involved in research is excluded.
Rationale	Indicator for the (expected) intensity of mentoring/tutoring and of contact between students and teachers.
Data source	Department questionnaire
Data elements	Number of students (head count); Number of academic staff (fte); Staff solely involved in research are excluded.
Time reference	2017 subjects: 2015; 2018 subjects: 2016; 2019 subjects: 2017
Grouping method	All subjects: log-normalised
Formula	$$\frac{\text{students major} + (\text{students minor} * 0.5)}{\text{academic staff (fte)} - \text{academic staff involved in reseach only (fte)}}$$

Teaching and Learning

Graduating on time (bachelors)

Level	Department
Dimension	Teaching and Learning
Definition	The percentage of graduates that graduated within the time expected (normative time) for their bachelor programme.
Rationale	The time to degree reflects how well the university's programmes are organised and shows the effectiveness of its teaching.
Data source	Department questionnaire
Data elements	Number of BA graduates within the standard period. Total number of BA graduates.
Time reference	2017 subjects: 2013-2015; 2018 subjects: 2014-2016; 2019 subjects: 2015-2017
Grouping method	All subjects: standard; except Materials Eng.: log-normalised
Formula	$\frac{\sum_{i=0}^{2} \text{graduates bachelor within normative time}_{t-i}}{\sum_{i=0}^{2} \text{bachelor degrees awarded}_{t-i}} * 100$ *t=2017*

Teaching and Learning

Graduating on time (masters)

Level	Department
Dimension	Teaching and Learning
Definition	The percentage of graduates that graduated within the time expected (normative time) for their masters programme.
Rationale	The time to degree reflects how well the university's programmes are organised and shows the effectiveness of its teaching.
Data source	Department questionnaire
Data elements	Number of MA graduates within the standard period. Total number of MA graduates.
Time reference	2017 subjects: 2013-2015; 2018 subjects: 2014-2016; 2019 subjects: 2015-2017
Grouping method	All subjects: standard; except Biology, Chemistry, Industrial/Chemical/Materials/Environm
Formula	$\frac{\sum_{i=0}^{2} \text{graduates master within normative time}_{t-i}}{\sum_{i=0}^{2} \text{master degrees awarded}_{t-i}} * 100$ *t=2017*

Academic staff with doctorates

Level	Department
Dimension	Teaching and Learning
Definition	The percentage of academic staff holding a doctorate (PhD or equivalent).
Rationale	Highly qualified academic staff is a pre-condition for high quality education. In an international perspective it can be measured and compared by reference to the percentage of staff which holds a PhD (or equivalent degree).
Data source	Department questionnaire
Data elements	Academic staff (head count). Academic staff (hed count) with a completed PhD (or equivalent). Doctoral candidates counted as staff are excluded.
Time reference	2017 subjects: 2015; 2018 subjects: 2016; 2019 subjects: 2017
Grouping method	All subjects: standard
Formula	

$$\frac{\text{academic staff with completed doctoral degree (headcount)}}{\text{academic staff (headcount)} - \text{doctoral candidates counted as staff (headcount)}} * 100$$

Teaching and Learning

Contact with work environment (bachelors)

Level	Department
Dimension	Teaching and Learning
Definition	A composite measure representing at bachelor level: (1) the inclusion of internships / phases of practical experience or external projects in the curriculum; (2) the percentage of students actually doing an internship; (3) teaching by practitioners from outside the university departments; and, (4) the percentage of degree theses made in cooperation with industry/external organisations.
Rationale	The inclusion of work experience and contacts to the work environment is an important factor to enhance the employability of students.
Data source	Department questionnaire
Data elements	Inclusion of internships / phases of practical experience / external projects in degree programmes. Percentage of students doing an internship. Percentage of courses delivered by practitioners from outside higher education.Percentage of degree thesis i
Time reference	Latest year available at the survey; some items referring to the current curriculum at the year of the survey.
Grouping method	Rating
Formula	

Teaching and Learning

Contact with work environment (masters)

Level	Department
Dimension	Teaching and Learning
Definition	A composite measure representing at master level: (1) the inclusion of internships / phases of practical experience or external projects in the curriculum; (2) the percentage of students actually doing an internship; (3) teaching by practitioners from outside the university departments; and, (4) the percentage of degree theses made in cooperation with industry/external organisations.
Rationale	Including work experience for students into the programme is an important aspect of enhancing employability.
Data source	Department questionnaire
Data elements	Inclusion of internships / phases of practical experience / external projects in degree programmes. Percentage of students doing an internship. Percentage of courses delivered by practitioners from outside higher education.Percentage of degree thesis i
Time reference	Latest year available at the survey; some items referring to the current curriculum at the year of the survey.
Grouping method	Rating
Formula	

Gender Balance

Level	Department
Dimension	Teaching and Learning
Definition	The relative probability of female/male students to finish a PhD at their university based on their actual share among students.
Rationale	
Data source	Department questionnaire
Data elements	Number of male/female students; number of PhDs completd by males/females.
Time reference	2018 subjects: 2016; 2019 subjects: 2017
Grouping method	Log-normalised
Formula	$\frac{\sum_{i=0}^{2} \text{PhD graduates female}_{t-i} \,/\, \sum_{i=0}^{2} \text{Students female}_{t-i}}{\sum_{i=0}^{2} \text{PhD graduates male}_{t-i} \,/\, \sum_{i=0}^{2} \text{Students male}_{t-i}}$

Innovative forms of assessment

Level	Department
Dimension	Teaching and Learning
Definition	The percentage of examinations (in medical doctor training programmes) which use innovative forms of assessment (assessment of practical work by faculty and structured clinical cases). This indicator is calculated only for the dentistry and medicine.
Rationale	This indicator measures the share of forms of assessments of students in medical examinations which are more interactive and focus on medical qualifications and competencies.
Data source	Department questionnaire
Data elements	Percentage of method faculty/resident rating.Percentage of methods objective structured clinical examination (OSCE).
Time reference	2016
Grouping method	Only medicine: standard
Formula	% faculty rating + % objective structured clinical examination

Teaching and Learning

Hospital beds available for teaching

Level	Department
Dimension	Teaching and Learning
Definition	The number of beds available for teaching in university hospital and affiliated hospitals per 100 students. This indicator is calculated only for the subject medicine.
Rationale	For clinical teaching access to patients is important for learning with high practical relevance.
Data source	Department questionnaire
Data elements	Number of beds in university hospitals, Number of beds in affiliated hospitals, Number of students in medical doctor training programmes.
Time reference	2016
Grouping method	Only medicine: standard
Formula	$\frac{\text{beds university hospital} + (0.5 * \text{beds affiliated hospital})}{\text{number of students} / 100}$

Teaching and Learning

Overall learning experience

Level	Department
Dimension	Teaching and Learning
Definition	An assessment of the quality of the overall learning experience, based on a student satisfaction survey.
Rationale	This indicator reflects the students' views on their overall teaching experience.
Data source	Student survey
Data elements	Single-item-indicator concerning the overall learning experience.
Time reference	Sample of students enrolled in the year of survey; e.g. for 2019 subjects: survey in 2018.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N} X_{\text{overall learning experience}}$

Teaching and Learning

Quality of courses & teaching

Level	Department
Dimension	Teaching and Learning
Definition	An assessment of the quality of teaching provision, based on a student satisfaction survey.
Rationale	The quality of courses and teaching is a crucial element of the quality of degree programmes.
Data source	Student survey
Data elements	Didactics in subject, accompanying material provided, willingness of staff to enhance their teaching, breadth of content of teaching offerings, adequate teaching of basic courses, international orientation, interdisciplinary elements, choose opportunities
Time reference	Sample of students enrolled in the year of survey; e.g. for 2019 subjects: survey in 2018.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N} \sum_{i=1}^{8} X_{\mathrm{i}}$

Teaching and Learning

Organisation of program

Level	Department
Dimension	Teaching and Learning
Definition	An assessment of the organisation of the programme, based on a student satisfaction survey.
Rationale	Students' views on the organisation of their degree programme indicates their assessment of basic issues of the organisation of teaching and the degree programme.
Data source	Student survey
Data elements	Transparency of entrance regulations, access to classes, feasibility of study programme, transparency of the examination system, adjustment of course content to examination subjects, feedback by teachers, matching of course contents within a module.
Time reference	Sample of students enrolled in the year of survey; e.g. for 2019 subjects: survey in 2018.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N} \sum_{i=1}^{7} X_{\mathrm{i}}$

Teaching and Learning

Contact with teachers

Level	Department
Dimension	Teaching and Learning
Definition	An assessment of the feedback given by teachers, based on a student satisfaction survey.
Rationale	Close contacts to teachers is a crucial criteria of quality for many students.
Data source	Student survey
Data elements	Social climate between students and teachers, feedback on homework, assignments and examinations, advice in preparing theses or oral presentations.
Time reference	Sample of students enrolled in the year of survey; e.g. for 2019 subjects: survey in 2018.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N} \sum_{i=1}^{3} X_{\mathrm{i}}$

Teaching and Learning

Inclusion of work/practical experience

Level	Department
Dimension	Teaching and Learning
Definition	An assessment of the inclusion of work experience and of elements related to work practice, based on a student satisfaction survey.
Rationale	The inclusion of work experience and practical elements is an important element to promote the employability of graduates.
Data source	Student survey
Data elements	Opportunities of including a practical work period, information about relevant fields to work, number of courses related to practice, quality of project learning/practical elements, support in finding a work placement, integration of practice, supervision
Time reference	Sample of students enrolled in the year of survey; e.g. for 2019 subjects: survey in 2018.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N}\sum_{i=1}^{7} X_{\mathrm{i}}$

Teaching and Learning

Library facilities

Level	Department
Dimension	Teaching and Learning
Definition	An assessment of the quality of library services for students, based on a student satisfaction survey.
Rationale	In may subjects the libarray is an important resource for students to have access to the knowledge of the subject.
Data source	Student survey
Data elements	Availability of literature needed for your work, access to on-stock books and academic journals, access to electronic journals, user support, availability of study/reading places, open hours.
Time reference	Sample of students enrolled in the year of survey; e.g. for 2019 subjects: survey in 2018.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N}\sum_{i=1}^{6} X_i$

Teaching and Learning

Room facilities

Level	Department
Dimension	Teaching and Learning
Definition	An assessment of lecture halls and seminar rooms, based on a student satisfaction survey.
Rationale	The quality of the build environment is an important elememt of a good learning experience. This indicators measure how well rooms are maintained and how well they are equipped.
Data source	Student survey
Data elements	Maintenance of lecture halls/seminar rooms and laboratories, Number of places in relation to the number of students in lecture halls/rooms and laboratories, Technical facilities of lecture halls/seminar rooms and laboratories, Safety of laboratories.
Time reference	Sample of students enrolled in the year of survey; e.g. for 2019 subjects: survey in 2018.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N}\sum_{i=1}^{7} X_{\mathrm{i}}$

Inclusion of practical experience/clerkships (medicine)

Level	Department
Dimension	Teaching and Learning
Definition	The integration of practical experience with patient contact into the study programme, based on a student satisfaction survey. This indicator is calculated only for the subject medicine.
Rationale	The inclusion of practical elements is an important element to enhance the employability of students.
Data source	Student survey
Data elements	Several items including information about relevant professional fields, insights into the work life, number of courses related to practice/work, quality of project learning and other practical elements, opportunities of including a practical work period.
Time reference	Sample of medicine students enrolled in 2017.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N}\sum_{i=1}^{3} X_i$

Teaching and Learning

IT provision

Level	Department
Dimension	Teaching and Learning
Definition	Student assessment of the quality of IT services for students, based on a student satisfaction survey.
Rationale	The IT provision marks a major aspect of facilities for teaching and learning.
Data source	Student survey
Data elements	Hardware of available computers, software available, maintenance of the computers, user support, number of available work places during lecture weeks, open times during lecture weeks, availability of Wifi.
Time reference	Sample of students enrolled in the year of survey; e.g. for 2019 subjects: survey in 2018.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N}\sum_{i=1}^{7} X_{\mathrm{i}}$

For medicine: staff only involved in research and only involved in patientcare are excluded in the denominator

Teaching and Learning

Digital teaching

Level	Department
Dimension	Teaching and Learning
Definition	Student assessment of the quality of digital teaching, based on a student satisfaction survey.
Rationale	The digitalisation plays a large role in future-oriented teaching development at higher institutions. This indicator measures how well digital elements improve the quality of students learning experience.
Data source	Stundet Survey
Data elements	Classical digital media and communication tools (e.g. ppp), social communication with teachers (e.g. chats, forums), electronic tests (e.g. e-assessments, e-exams), audio-/videobased learning medium or tutorials (e.g. video, tutorials), interactive tools.
Time reference	Sample of students enrolled in the year of survey; e.g. for 2019 subjects: survey in 2018.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N} \sum_{i=1}^{5} X_{\mathrm{i}}$

Teaching and Learning

Bedside teaching

Level	Department
Dimension	Teaching and Learning
Definition	An assessment of bedside teaching concerning mentoring, suitability of rooms and variety of diagnostic techniques applied, based on a student satisfaction survey. This indicator is calculated only for the subject medicine.
Rationale	The support in and monitoring of bedside teaching by academic staff is an important factor for the quality of medical doctors education.
Data source	Student survey
Data elements	Bed side teaching
Time reference	Sample of medicine students enrolled in 2017.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N}\sum_{i=1}^{3} X_{\mathrm{i}}$

Laboratory facilities

Level	Department
Dimension	Teaching and Learning
Definition	An assessment of the quality of laboratories available to students, based on a student satisfaction survey. This indicator is calculated only for science and technology subjects.
Rationale	The laboratory facilities are very important for teaching and learning in the natural sciences.
Data source	Student survey
Data elements	Maintenance of laboratories, technical facilities, number of places in relation to the number of students, safety (instructions, supervision, safety equipment, personal protective equipment).
Time reference	Sample of students enrolled in the year of survey; e.g. for 2019 subjects: survey in 2018.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N} \sum_{i=1}^{4} X_{\mathrm{i}}$

Teaching and Learning

Linking clinical/preclinical teaching

Level	Department
Dimension	Teaching and Learning
Definition	The integration of pre-clinical/theoretical and clinical courses, based on a student satisfaction survey. This indicator is calculated only for the subject medicine.
Rationale	Linking theoretical /pre-clinical and clinical courses is an important element of a good medical doctor education.
Data source	Student survey
Data elements	
Time reference	Sample of medicine students enrolled in 2017.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N}\sum_{i=1}^{3} X_i$

Teaching and Learning

Skills Labs

Level	Department
Dimension	Teaching and Learning
Definition	An assessment of the skills labs and training centers concerning maintenance, accessibility, technical facilities and mentoring, based on a student satisfaction survey. This indicator is calculated only for the subject medicine.
Rationale	The access to skills labs is an important factor of modern teaching facilities in medicine.
Data source	Student survey
Data elements	Skills labs
Time reference	Sample of medicine students enrolled in 2017.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N}\sum_{i=1}^{3} X_{\mathrm{i}}$

External research income

Level	Department
Dimension	Research
Definition	Research revenue that is not part of a core (or base) grant received from the government. Includes research grants from national and international funding agencies, research councils, research foundations, charities and other non-profit organisations. Measured in €1,000s using Purchasing Power Parities (PPP). Expressed per fte academic staff.
Rationale	The indicator expresses the department's success in attracting grants in national and international competitive, peer-reviewed programmes. This reflects the quality of its research.
Data source	Department questionnaire
Data elements	Research income from national and international funding agencies, research councils, research foundations, charities and other non-profit organisations.Full time equivalent (fte) number of academic staff; doctoral candidates counted as staff are excluded
Time reference	2017 subjects: 2013-2015; 2018 subjects: 2014-2016; 2019 subjects: 2015-2017
Grouping method	All subjects: log-normalised
Formula	$$\frac{\sum_{i=0}^{2} \text{external research income}_{t-i} - \sum_{i=0}^{2} \text{external research income from professorships}_{t-i}}{\sum_{i=0}^{2} ((\text{fte academic staff fte doctoral candidates counted as academic staff})_{t-i} * 1000)}$$

t=2017; normalised by PPP (GDP) in €. Medicine: fte patient care only is also excluded in the denominator.

Research

Doctorate productivity

Level	Department
Dimension	Research
Definition	The number of doctorate degrees, relative to the number of academic staff (fte).
Rationale	The number of doctorate degrees may be seen as an expression of the research activity of a higher education institution. The doctorate thesis is a significant research publication.
Data source	Department questionnaire
Data elements	Number of doctorate degrees awarded. Full time equivalent (fte) number of academic staff.
Time reference	2017 subjects: 2013-2015; 2018 subjects: 2014-2016; 2019 subjects: 2015-2017
Grouping method	All subjects: log-normalised; except: Environmental Eng.: standard
Formula	$$\frac{\sum_{i=0}^{2} \text{doctorate degrees awarded}_{t-i}}{\sum_{i=0}^{2} (\text{fte academic staff - fte doctoral candidates counted as academic staff})_{t-i}}$$ *t=2017; Medicine: fte academic staff involved in patient care only is also excluded*

Research

Research publications (absolute numbers)

Level	Department
Dimension	Research
Definition	The number of department's research publications indexed in the Web of Science Core Collection database, where at least one author is affiliated to the source university or higher education institution.
Rationale	The number of publications in academic journals is a measure of the institution's research activity and its capability in producing research publications at the international level.
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	Number of research publications indexed in Thomson Reuters data base
Time reference	Period 2014 - 2017
Grouping method	All subjects: log-normalised
Formula	

Research

Citation rate

Level	Department
Dimension	Research
Definition	The average number of times the university's research publications are cited in other research; adjusted (normalized) at the global level to take into account differences in publication years and to allow for differences in citation customs across academic fields.
Rationale	Indicator of the scientific impact of research outputs within international scientific communities. The measure takes into account differences in citation customs across academic fields ('normalisation').
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	Mean Normalised Citation Rate
Time reference	Publications: period 2014 - 2017; citations until 3rd quarter 2018
Grouping method	All subjects: standard
Formula	

Research

Top cited publications

Level	Department
Dimension	Research
Definition	The proportion of the department's research publications that, compared to other publications in the same field and in the same year, belong to the top 10% most frequently cited worldwide.
Rationale	This is a measure of international research excellence. Departments with well over 10% of their publications in the top percentile of frequently cited articles worldwide are among the top research institutes worldwide.
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	The number of publications of a university that, compared with other publications in the same field and in the same year, belong to the top 10% most frequently citedTotal publication output
Time reference	Publications: period 2014 - 2017; citations until 3rd quarter 2018
Grouping method	All subjects: standard
Formula	$\frac{\text{score on top cited publications}}{\text{total publication output}}$

Research

Interdisciplinary publications

Level	Department
Dimension	Research
Definition	Extent to which reference lists of university's publications reflect cited publications in journals from different scientific disciplines.
Rationale	The more a publication refers to publications belonging to different fields of science and the larger the distance between these fields, the higher the degree of interdisciplinarity. Given that the frontiers of research are often at the edge of discipline
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	Interdisciplinary scientific publication outputTotal publication output
Time reference	Period 2014 - 2017
Grouping method	All subjects: standard
Formula	$\text{interdisciplinarity score of individual publication}: I^{pub} = \frac{1}{m^2}\sum_{i}^{j} d_{ij}$ $\text{interdisciplinarity score of an institution}: I^{inst} = \left(\frac{1}{n}\sum_{k} \#(I_k^{pub} \geq I_{threshold}^{pub})\right) * 100$ *m=number of references in the publication to other WoS-indexed publications; dij=distance between the field of reference i and the field of reference j;n=number of publications of the institutionI pub;k=interdisciplinarity score of publication k;I p*

Research

Research orientation of teaching

Level	Department
Dimension	Research
Definition	The degree to which the education is informed by research in the field (based on a survey of students in the programme).
Rationale	The degree to which education is informed by research reflects the innovative character of the teaching in the programme.
Data source	Student survey
Data elements	Introduction to methods of scientific work, inspiration for own critical reflection on the subject, inclusion of central and innovative research results, training of scientific thinking in general, encouragement to give conference papers.
Time reference	Sample of students enrolled in the year of survey; e.g. for 2019 subjects: survey in 2018.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N} \sum_{i=1}^{5} X_{\mathrm{i}}$

Income from private sources

Level	Department
Dimension	Knowledge Transfer
Definition	The percentage of private sources from external research revenues (incl. not-for profit organisations), excluding tuition fees.
Rationale	The degree to which research is funded by external, private organisations reflects aspects of a department's research quality - most notably its success in attracting funding and research contracts from end-user sources.
Data source	Department questionnaire
Data elements	Research income from industry/private business; Total external research income
Time reference	2017 subjects: 2013-2015; 2018 subjects: 2014-2016; 2019 subjects: 2015-2017
Grouping method	All subjects: log-normalised
Formula	$$\frac{\sum_{i=0}^{2} \text{income from private business}_{t-i}}{\sum_{i=0}^{2} \text{total third party funds}_{t-i}} * 100$$ *t=2017*

Knowledge Transfer

Co-publications with industrial partners

Level	Department
Dimension	Knowledge Transfer
Definition	The percentage of a department's research publications that list an author affiliate with an address that refers to a for-profit business enterprise or private sector R&D unit (excludes for-profit hospitals and education organisations).
Rationale	The more research is carried out with external partners, the more likely it is that knowledge transfer takes place between academia and business
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	Co-publications with industrial partnersTotal publication output
Time reference	Period 2014 - 2017
Grouping method	All subjects: standard; except: Mathematics, Physics, Chemistry, Biology, Computer Science,
Formula	$\frac{\text{score on co - publications with industry}}{\text{total publication output}} * 100$

Knowledge Transfer

Publications cited in patents

Level	Department
Dimension	Knowledge Transfer
Definition	The percentage of the department's research publications that were cited in the reference list of at least one international patent (as included in the PATSTAT database).
Rationale	This indicator reflects the technological relevance of the department's scientific research, in the sense that it explicitly contributed, in some way, to the development of patented technologies
Data source	CWTS/Thomson Reuters - Web of Science Core Collection; CWTS/PATSTAT database
Data elements	Publications cited in patentsResearch publications
Time reference	Period 2014 - 2017
Grouping method	All subjects: log-normalised; except: Biology, Electrical Eng.: standard
Formula	$\frac{\text{score on publications cited in patents}_{2005\text{-}2014}}{\text{total publication output}_{2005\text{-}2014}} * 100$

International Orientation

International orientation of bachelor programmes

Level	Department
Dimension	International Orientation
Definition	A composite measure taking into account (1) the existence of joint/dual degree programmes; (2) the inclusion of study periods abroad; (3) the percentage of international (degree and exchange) students; and (4) the percentage of international academic staff.
Rationale	The integration of international learning experiences and learning with international students and teachers are central elements of the internationalisation of teaching & learning.
Data source	Department questionnaire
Data elements	Existence of joint degree programmes / stay abroadPercentage of international studentsPercentage of incoming exchange studentsPercentage of international academic staff
Time reference	Latest year available at the survey; some items referring to the current curriculum at the year of the survey.
Grouping method	Rating
Formula	

International Orientation

International orientation of master programmes

Level	Department
Dimension	International Orientation
Definition	A composite measure taking into account (1) the existence of joint/dual degree programmes; (2) the inclusion of study periods abroad; (3) the percentage of international (degree and exchange) students; and (4) the percentage of international academic staff.
Rationale	The integration of international learning experiences and learning with international students and teachers are central elements of the internationalisation of teaching & learning.
Data source	Department questionnaire
Data elements	Existence of joint degree programmes / stay abroad, Percentage of international students, Percentage of incoming exchange studts, Percentage of international academic staff.
Time reference	Latest year available at the survey; some items referring to the current curriculum at the year of the survey.
Grouping method	Confidence interval procedure
Formula	

International Orientation

Opportunities to study abroad

Level	Department
Dimension	International Orientation
Definition	An assessment of the opportunities for studying abroad, based on a student satisfaction survey.
Rationale	Students judgments about their possibilities and the support by their university to arrange a study period or an internship abroad.
Data source	Student survey
Data elements	Attractiveness of the exchange programme/partner universities, support and advice for studying abroad, financial support, recognition of the results obtained during the study abroad period (e.g. Credits), support in finding an internship abroad.
Time reference	Sample of students enrolled in the year of survey; e.g. for 2019 subjects: survey in 2018.
Grouping method	Confidence interval procedure
Formula	$\overline{X} = \frac{1}{N} \sum_{i=1}^{5} X_{\mathrm{i}}$

International Orientation

International doctorate degrees

Level	Department
Dimension	International Orientation
Definition	The percentage of doctorate degrees that are awarded to international doctorate candidates.
Rationale	The number of doctorate degrees awarded to international candidates reflects the international orientation of an institution.
Data source	Department questionnaire
Data elements	Number of doctorate degrees awarded to international doctorate candidates; Total number odoctorate degrees awarded.
Time reference	2017 subjects: 2013-2015; 2018 subjects: 2014-2016; 2019 subjects: 2015-2017
Grouping method	All subjects: log-normalised; except Mathematics, Materials Eng., Environmental Eng.: stan
Formula	$$\frac{\sum_{i=0}^{2} \text{doctorate degrees awarded to candidates with foreign nationality}_{t-i}}{\sum_{i=0}^{2} \text{total number of doctorate degrees awarded}_{t-i}} * 100$$ *t=2017*

International Orientation

International joint publications

Level	Department
Dimension	International Orientation
Definition	The percentage of the department's research publications that list at least one affiliate author's address in another country.
Rationale	The number of international joint publications reflects the degree to which a university's research is connected to international networks.
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	International joint research publicationsResearch publications
Time reference	Period 2014 - 2017
Grouping method	All subjects: standard
Formula	$\frac{\text{score on international co - publications}_{2012\text{-}2015}}{\text{total publication output}_{2012\text{-}2015}} * 100$

International Orientation

International research grants

Level	Department
Dimension	International Orientation
Definition	The percentage of external research revenue – including public and private funding organisations and businesses – that comes from other countries.
Rationale	The existence of research projects that are funded by foreign and international sources is a good indicator of the international orientation of research activities.
Data source	Department questionnaire
Data elements	Research revenues from international sources (public and private funding organisations and enterprises from abroad); Total external research income.
Time reference	2017 subjects: 2013-2015; 2018 subjects: 2014-2016; 2019 subjects: 2015-2017
Grouping method	All subjects: log-normalised
Formula	$$\frac{\sum_{i=0}^{2} \text{external research funds from international sources}_{t-i}}{\sum_{i=0}^{2} \text{total external research funds}_{t-i}} * 100$$ *t=2017*

Regional Engagement

Student internships in the region

Level	Department
Dimension	Regional Engagement
Definition	The percentage of students whose internship was with a company or organisation located in the region out of the entirety of students doing an internship.
Rationale	Internships of students in regional enterprises are a means to build co-operations with regional partners and connect students to the local labour market.
Data source	Department questionnaire
Data elements	Number of students who did an internship in the region. Total number of students who did an internship.
Time reference	2017 subjects: 2013-2015; 2018 subjects: 2014-2016; 2019 subjects: 2015-2017
Grouping method	All subjects: standard; Computer Science, Mathematics, Physics, Chemistry, Biology, Chemic
Formula	$\frac{\sum_{i=0}^{2} \text{students in internships in the region}_{t-i}}{\sum_{i=0}^{2} \text{students in internships}_{t-i}} * 100$ *t=2017*

Regional Engagement

Regional joint publications

Level	Department
Dimension	Regional Engagement
Definition	The percentage of department's research publications that list at least one co-author with an affiliate address in the same spatial region (within a distance of 50 km from the university).
Rationale	Co-publications with authors located elsewhere in the region are a reflection of regional linkages between the university and regional partners.
Data source	CWTS/Thomson Reuters - Web of Science Core Collection
Data elements	Number of research publications that list at least one affiliate address of co-authors in the same region (50 km range).Total number of academic publications
Time reference	Publications: Period 2006 - 2015; PATSTAT data base: version of autumn 2017
Grouping method	All subjects: standad; except Mathematics, Physics, Biology, Computer Science, Chemical En
Formula	$\frac{\text{score on regional co-publications}_{2012\text{-}2015}}{\text{total publication output}_{2012\text{-}2015}} * 100$

Regional Engagement

Community service learning

Level	Department
Dimension	Regional Engagement
Definition	The percentage of credits given in service-learning activities, in relation to total number of credits. Service-learning involves students in community service activities and applies the experience to personal and academic development. This indicator is calculated only for the subject social work.
Rationale	Service-learning involves students in community service activities and applies the experience to personal and academic development. Service-learning takes place outside the HEI.
Data source	Department questionnaire
Data elements	Credits for service-learning; duration of programme (60 credits per year)
Time reference	2016
Grouping method	Only social work: log-normalised
Formula	$\frac{\text{Number of credit points obtainable for service learning}}{\text{Total credit points required for degree}^*} * 100$

** 180 CP for a Bachelor degree and 120 CP for a Master degree*

BA theses in cooperation with private organisations

Level	Department
Dimension	Knowledge Transfer
Definition	Percentage of bachelor theses done in cooperation with private organisations (enterprises/ external organisations).
Rationale	Theses written in cooperation with external organisations often deal with questions and problems relevant to those organisations and reflects the cooperation between enterprises and the institution.
Data source	Department questionnaire
Data elements	Number of bachelor theses completed in cooperation with enterprises; Number of bachelor degrees issued (graduates).
Time reference	2017 subjects: 2013-2015; 2018 subjects: 2014-2016; 2019 subjects: 2015-2017
Grouping method	Rating
Formula	$$\frac{\sum_{i=0}^{2} \text{bachelor theses in cooperation with private organisations}_{t-i}}{\sum_{i=0}^{2} \text{number of bachelor degrees issued(graduates)}_{t-i}} * 100$$

t=2017

MA theses in cooperation with private organisations

Level	Department
Dimension	Knowledge Transfer
Definition	Percentage of master theses done in cooperation with private organisations (enterprises/ external organisations).
Rationale	Theses written in cooperation with external organisations often deal with questions and problems relevant to those organisations and reflects the cooperation between enterprises and the institution.
Data source	Department questionnaire
Data elements	Number of master theses completed in cooperation with enterprises; Number of master degrees issued (graduates).
Time reference	2017 subjects: 2013-2015; 2018 subjects: 2014-2016; 2019 subjects: 2015-2017
Grouping method	Rating
Formula	$$\frac{\sum_{i=0}^{2} \text{master theses in cooperation with private organisations}_{t-i}}{\sum_{i=0}^{2} \text{number of master degrees issued(graduates)}_{t-i}} * 100$$
	t=2017

Mapping; comparing like with like

Teaching and Learning

Expenditure on teaching

Dimension	Teaching and Learning
Definition	Percentage of total institutional expenditure dedicated to teaching activities
Rationale	This indicator highlights the priority given to teaching activities, in relation to research and knowledge exchange
Data source	institution questionnaire
Data elements	percentages of expenditure on teaching provided
Time reference	average 2015-2017
Formula	$\frac{\sum_{i=0}^{2} \text{percentage of expenditure on teaching activities}_{t-i}}{3}$ *t=2017; Percentage is corrected for expenditure on other activities: these expenditures are distributed over teaching, research and knowledge transfer. If more than 50% is spent on other activities, the indicator is not calculated.*
Categories	low; medium; high

Teaching and Learning

Graduate students

Dimension	Teaching and Learning
Definition	The number of higher degrees (master and PhD) awarded as a percentage of total number of degrees awarded
Rationale	The indicator characterises an institution regarding its focus on graduate versus undergraduate teaching and education
Data source	institution questionnaire; external sources (ETER, institutional websites)
Data elements	The number of higher degrees (master and doctorate) awarded. Total number of degrees awarded
Time reference	average 2015-2017
Formula	$\frac{\sum_{i=0}^{2} \text{number of higher degrees awarded}_{t-i}}{\sum_{i=0}^{2} \text{total number of degrees awarded}_{t-i}}$ *t=standard reference year(2017)*
Categories	none; low; medium; high

Teaching and Learning

Scope

Dimension	Teaching and Learning
Definition	The Herfindahl Index was used to analyze the subject specialization of higher education institutions. The share of graduates per field of education is used to calculate a measure of specialization. A score between 1 and 0.7 is categorized as specialized, 0.7-0.3 as broad and smaller than 0.3 as comprehensive. In those cases where data did not allow to calculate a Herfindahl index, the scope was determined by the number of broad educational fields offered.
Rationale	Scope is seen as an indication of the disciplinary diversity of a HEI. A specialised activity profile is likely to lead to a different performance profile than a broad or comprehensive activity profile.
Data source	institution questionnaire
Data elements	
Time reference	2017 or latest available
Formula	
Categories	specialised (1, 2 or 3 fields); broad (4, 5, 6 or 7); comprehensive (8, 9 or 10)

Teaching and Learning

Level of study

Dimension	Teaching and Learning
Definition	The degree levels at which the institution awards degrees
Rationale	The highest level of degree programmes offered is one of the indicators of research intensiveness of the activity profile of a HEI. Doctorate granting HEIs are more likely to be research active as bachelor granting HEIs.
Data source	institution questionnaire; external sources (institutional websites)
Data elements	
Time reference	2017 or latest available
Formula	
Categories	bachelor; master; doctorate

Teaching and Learning

Specialised in

Dimension	Teaching and Learning
Definition	The dominant field of specialization is determined by the percentage of graduates per broad educational field. For specialized institutions, dominant field has at least 67% of all graduates, for broad institutions dominant field has at least 50% of all graduates.
Rationale	This indicator allows for selecting specialised HEIs on their dominant subject field
Data source	institution questionnaire; ETER
Data elements	graduates per broad educational subject field (ISCED 2011)
Time reference	average 2015-2017
Formula	$\frac{\text{number of graduates in field x}}{\text{total number of graduates}}$ *field x=broad subject field*
Categories	

Research

Expenditure on research

Dimension	Research
Definition	The percentage of expenditure allocated to research activities
Rationale	This indicator highlights the priority given to research activities, in relation to teaching and knowledge exchange
Data source	institution questionnaire
Data elements	
Time reference	average 2015-2017
Formula	$\frac{\sum_{i=0}^{2} \text{percentage of expenditure on research activities}_{t-i}}{3}$ *t=2017; Percentage is corrected for expenditure on other activities: these expenditures are distributed over teaching, research and knowledge transfer. If more than 50% is spent on other activities, the indicator is not calculated.*
Categories	none; low; medium; high

Knowledge Transfer

Income from private sources

Dimension	Knowledge Transfer
Definition	The total amount of external research income and income from knowledge transfer from private sources as a percentage of total income of institution
Rationale	The amount of income from third parties (external research and knowledge exchange income) signals knowledge exchange between academia and business, contract research complements patent indicators
Data source	institution questionnaire
Data elements	revenues from tuition fees revenues from CPD revenues from private research contracts revenues from licensing, royalties or copyrights
Time reference	average 2015-2017
Formula	$\frac{\sum_{i=0}^{2} \text{revenues from (tuition + private research contracts + CPD + licensing, royalties and copyrights)}_{t-i}}{\sum_{i=0}^{2} \text{total income}_{t-i}} * 10$ *t=standard reference year(2017)*
Categories	none; low; medium; high

International Orientation

Foreign degree seeking students

Dimension	International Orientation
Definition	The number of degree seeking students with a foreign diploma on entrance as a percentage of total enrolment in degree programs.
Rationale	A high percentage of foreign degree seeking students reflects a high attractiveness of the HEI to international students, which is assumed to be correlated with a high degree of international orientation.
Data source	Institution questionnaire
Data elements	The number of degree seeking students with a foreign diploma on entrance Total number of degree seeking students.
Time reference	average 2015-2017
Formula	$$\frac{\sum_{i=0}^{2} \text{degree seeking students with a foreign diploma on entrance}_{t-i}}{\sum_{i=0}^{2} \text{total number of degree seeking student enrolled}_{t-i}} * 100$$ *t=standard reference year(2017)*
Categories	none; low; medium; high

Regional Engagement

New entrants from the region

Dimension	Regional Engagement
Definition	The percentage of new entrants to bachelor programmes coming from the region in which the institution is located
Rationale	The percentage of new entrants from the region reflect one aspect of the embeddedness of the institution in the region.
Data source	institution questionnaire
Data elements	Percentage or range provided
Time reference	2017 or latest available
Formula	
Categories	none; low; lower medium; upper medium; high

General

Size of institution

Dimension	General
Definition	The size of the institution in terms of the number of students enrolled
Rationale	Size is seen as an important characteristic describing the institution, from both the student perspective and the institution perspective
Data source	institution questionnaire; external sources (ETER, IPEDS, institutional websites)
Data elements	Degree seeking students enrolled
Time reference	average 2015-2017
Formula	$\frac{\sum_{i=0}^{2} \text{degree students enrolled}_{t-i}}{3}$ *t=standard reference year(2017)*
Categories	small; midsize; large; very large

General

Legal status

Dimension	General
Definition	The public/private character of the institution
Rationale	legal status is a crude indicator of the dependency of a HEI on revenues from private sources.
Data source	Institution questionnaire
Data elements	Choice of: (1) public; (2) private; (3)private government-dependent
Time reference	2017 or latest available
Formula	
Categories	public; private; government dependent private

General

Founding year

Dimension	General
Definition	The founding year of the oldest part of the institution
Rationale	Age/ year of foundation proves to be correlated to a number of performance indicators.
Data source	institution questionnaire
Data elements	year of foundation year of foundation of thr oldest part (in case of a merged institution)
Time reference	2017 or latest available
Formula	2015 - founding year oldest part
Categories	pre 1870; 1870-1945; 1945-1980; post 1980

General

Female students bachelor

Dimension	General
Definition	The number of female students enrolled in bachelor programmes as a percentage of total enrolment in bachelor programmes
Rationale	The gender aspect in bachelor enrolment is seen as an aspect of the social dimension of a HEI and its programmes.
Data source	external sources (e.g. ETER & IPEDS)
Data elements	
Time reference	2017 or latest available
Formula	$\frac{\text{number of female bachelor students enrolled}}{\text{total number of bachelor students enrolled}} * 100$
Categories	

General

Female students master

Dimension	General
Definition	The number of female students enrolled in master programmes as a percentage of total enrolment in master programmes.
Rationale	The gender aspect in master enrolment is seen as an aspect of the social dimension of a HEI and its programmes.
Data source	external sources (e.g. ETER & IPEDS)
Data elements	
Time reference	2017 or latest available
Formula	$\frac{\text{number of female master students enrolled}}{\text{total number of master students enrolled}} * 100$
Categories	

General

Female academic staff

Dimension	General
Definition	The number of female academic staff as a percentage of total number of academic staff
Rationale	The gender aspect in academic staff is seen as an aspect of the social dimension of a HEI and its programmes.
Data source	external sources (e.g. ETER & IPEDS)
Data elements	
Time reference	2017 or latest available
Formula	$\frac{\text{number of female academic staff (headcount)}}{\text{total number of academic staff (headcount)}} * 100$
Categories	

General

Female professors

Dimension	General
Definition	The number of female professors as a percentage of total number of professors.
Rationale	The gender aspect in the number of professors is seen as an aspect of the social dimension of a HEI and its programmes.
Data source	external sources (e.g. ETER & IPEDS)
Data elements	
Time reference	2017 or latest available
Formula	$\frac{\text{number of female professors (headcount)}}{\text{total number of professors (headcount)}} * 100$
Categories	