

PUBLIC HIGHER EDUCATION FUNDING, POSTGRADUATE STUDENTS AND RESEARCH OUTPUT 2020

Supplement to
VitalStats 2020



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The Council on Higher Education (CHE) is an independent statutory body established by the Higher Education Act, No. 101 of 1997 (as amended). The CHE is the Quality Council for Higher Education, advises the Minister responsible for Higher Education, Science and Innovation on all higher education issues and is responsible for quality assurance and promotion through the Higher Education Quality Committee (HEQC).

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Foreword

Since 2012, the Council on Higher Education (CHE) has published VitalStats annually. Over the last ten years this annual publication has established itself as an important resource for research and policy discussions. The response of the higher education sector to this annual publication has been overwhelming. Every year, around the months of February and March, the CHE is inundated with enquiries from the sector about the publication date of the latest issue in the VitalStats issue. The feedback received about the publication has been largely complementary. There have also been constructive criticisms, one of which has been that focusing on public higher education sub-sector does not provide a holistic picture of the vital statistics for the broader higher education sector which includes private higher education institutions. Similarly, some stakeholders have, over the years, expressed concern at the relative lack of data on the important issues of funding and research outputs in VitalStats publications.

The CHE has responded to the two constructive criticism points referred to above. Datasets for private higher education institutions have been included in VitalStats 2020 in addition to the data for the public higher education sector. VitalStats 2020 is therefore a thicker volume than its forerunners. The CHE also sourced and analysed more datasets on funding and research outputs for the public universities. However, adding the increased number of graphs and data tables on funding and research outputs to an already thicker volume of VitalStats 2020 would have made the publication bulky and therefore less user-friendly. It is for this reason that a decision was taken to publish the latter in a separate volume as a supplement to the VitalStats 2020. That is how this supplement volume, titled Public Higher Education Funding and Research 2020: A Supplement to VitalStats 2020, came to be prepared, designed, and published.

The publication has five sections, namely (i) University State Funding; (ii) Permanent Academic Staff with Master and Doctoral qualifications; (iii) Master and Doctoral Students Entrance and Completion; (iv) Research Students Cohort Analysis; and (v) Research Output and Output Grant.

Going forward, the CHE plans to continue publishing an annual main VitalStats and a supplement focusing on funding and research. There will therefore be two publications on vital statistics for higher education every year. It is hoped that stakeholders will appreciate this new format as it provides more valuable datasets on additional important variables which have been analysed to reasonable levels of depth.

Staff members in the Research, Monitoring and Advice Directorate and the external experts who worked on processing and analysing the relevant datasets, as well as plotting the graphs presented in this publication, are acknowledged with sincere appreciation. Similarly, the CHE would like to thank stakeholders within the higher education sector who make use of the annual VitalStats publication for research and for policy-related work. The CHE reserves its special gratitude to those stakeholders who, over the years, have taken time to provide feedback on the VitalStats publication, which is used to improve the publication and ensure its continued relevance. As always, constructive criticism on the new approach is welcome, and commentators are encouraged to provide feedback on this supplement publication through emails addressed to research@che.ac.za.

Copies of this publication and other past issues of VitalStats since 2012, can be accessed through the CHE website: www.che.ac.za/publications.

Dr Whitfield J. Green
Chief Executive Officer
December 2022

Acronyms

CESM: Classification of Educational Subject Matter

Comp: Comprehensive Universities

FTE: Full-time equivalent

Trad: Traditional Universities

UoT: University of Technology

Definitions

Classification of Educational Subject Matter or CESM categories:

A set of classifications aiming to provide a single coherent system for categorising subject matter irrespective of the level of instruction or type of institution. For a list of first-order CESM categories, see Appendix 2.

Cohort:

The first-time entry students in a given year who have enrolled for a particular higher education programme.

Comprehensive Universities (Comp):

This refers to institutions that offer the full spectrum of programmes, including vocational, professional and general formative programmes at both undergraduate and postgraduate levels.

Field of study:

Enrolments are divided into four broad fields or areas of study, calculated by aggregating enrolments by CESM category as below. For a description of each CESM category, see Appendix 2:

- Science, Engineering and Technology (SET): CESM 01, 02, 06, 08, 09, 10, 13, 14, 15 and 16
- Business and Commerce (BandC): CESM 04
- Humanities (Hum): CESM 03, 05, 11, 12, 17, 18, 19 and 20
- Education (Ed): CESM 07

Full-time equivalent (FTE):

FTE student enrolments are calculated (a) by assigning to each course a fraction representing the weighting it has in the curriculum of a qualification, and (b) by multiplying the headcount enrolment of that course by this fraction. FTE staff numbers are calculated in a similar way.

Headcount:

The total number of students enrolled at each institution whether as full-time, part-time, or occasional students.

Percentage accumulative (for Cohort Study):

This indicates (in the relevant graphs) the total number of students of a particular first-time entering cohort who have graduated or dropped out up to that point. It includes all the students of that cohort who have graduated or dropped out in previous years.

Percentage non-accumulative (for Cohort Study):

This indicates (in the relevant graphs) the total number of students of a particular first-time entering cohort who have graduated or dropped out in that particular year. It does not include the students of that cohort who have graduated or dropped out in previous years.

Permanent employee:

A person is classified as a permanent staff member if he/she contributes to an approved retirement fund of the institution.

Personnel categories:

The personnel category indicates the type of duties to be undertaken in a position which a staff member occupies in the institution, and the qualifications and experience normally required by the incumbent of that position. The duties, qualifications and experience referred to relate to those of the position. The personnel categories are:

- **Instruction/research professional (Academic):** A position in which (a) at least 50% of time is spent on instruction and/or research activities, and (b) the position requires a higher education qualification equivalent to at least 4 years of higher education study.
- **Executive/administrative/managerial professional (Senior Management):** A position in which (a) the primary function is the management of the institution or one of its major divisions or sections, and (b) the position requires an educational attainment equivalent to at least 4 years of higher education study.
- **Non-professional administration (Administrative):** A position in which (a) the primary function is clerical, secretarial or administrative duties, and (b) an educational attainment equivalent to 4 years of higher education study is not required.
- **Service staff:** A group of staff for whom the primary function comprises unskilled activities.

Postgraduate Student:

In this context a postgraduate student is anyone who is studying for a postgraduate masters degree through research, or for a PhD degree.

Staff member:

A staff member is a person who is either compensated by the institution by pay or other means for services rendered, or who, while not being paid or compensated by the institution, performs services which relate to the institution's normal activities and those activities which would otherwise have been performed by staff receiving compensation from the institution.

Temporary employee:

A staff member who does not contribute to an approved retirement fund of the institution is classified as having a temporary employment status.

Throughput rate:

A throughput rate calculates the number of first-time entry undergraduate students of a specific cohort of a specific year who have graduated either within the minimum time, or up to 2 years beyond the minimum time, to the number of students in the baseline enrolments of that cohort. Throughput rates are reflected in the section on cohort studies.

Traditional Universities (Trad):

This refers to institutions that offer a broad range of general formative and professional programmes at both undergraduate and postgraduate levels.

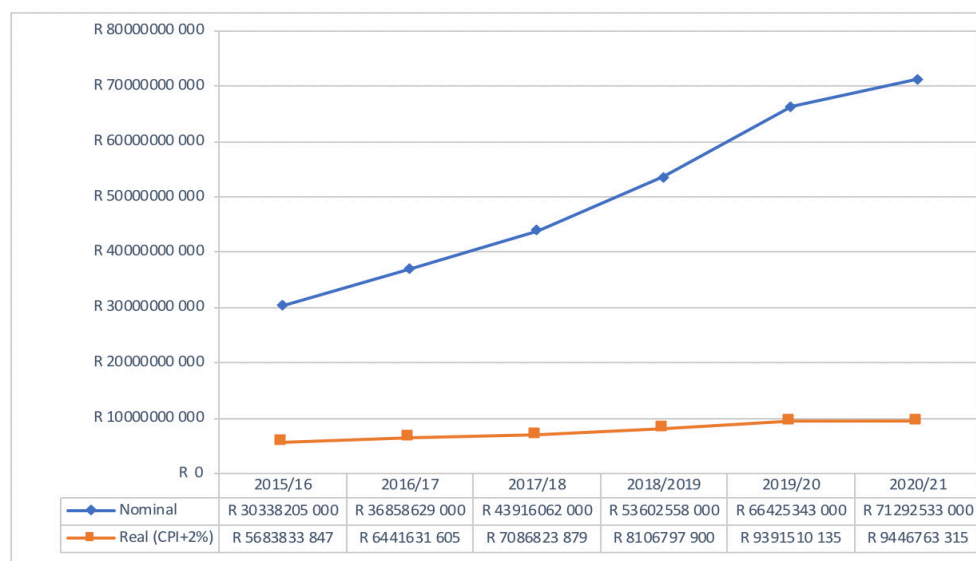
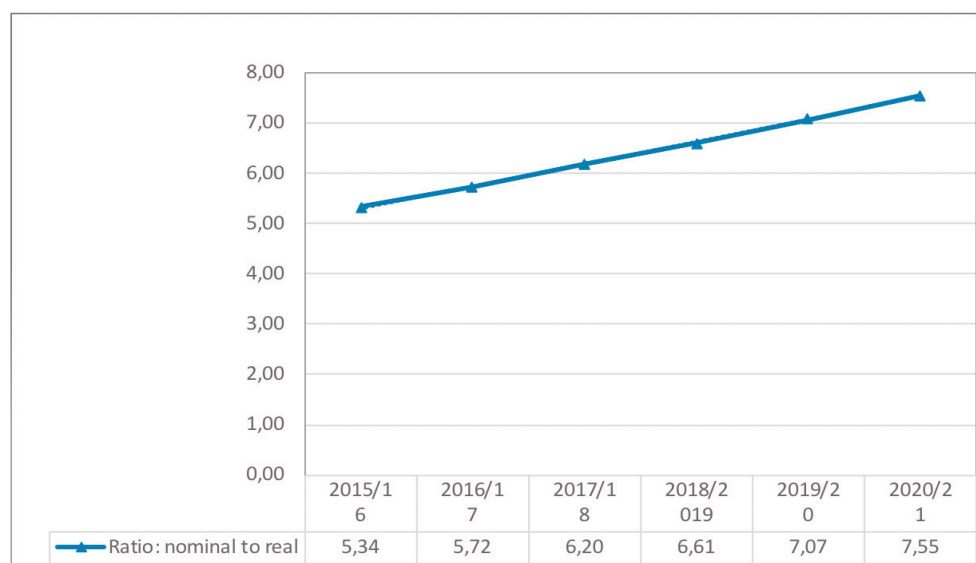
Universities of Technology (UoT):

This refers to institutions, previously called Technikons that offer a range of programmes that are vocationally and/ or professionally orientated, primarily at the undergraduate level.

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University state funding

Figure 1: Funding allocated to universities in real and nominal terms for 2015/16 to 2020/21**Figure 2: Ratio: nominal to real for 2015/16 to 2020/21**

Source: University State Budgets: Public Report March 2020, Real GDP at 2010 Prices.

Figure 3: Funding allocated to universities as a percentage of GDP and of the state budget.

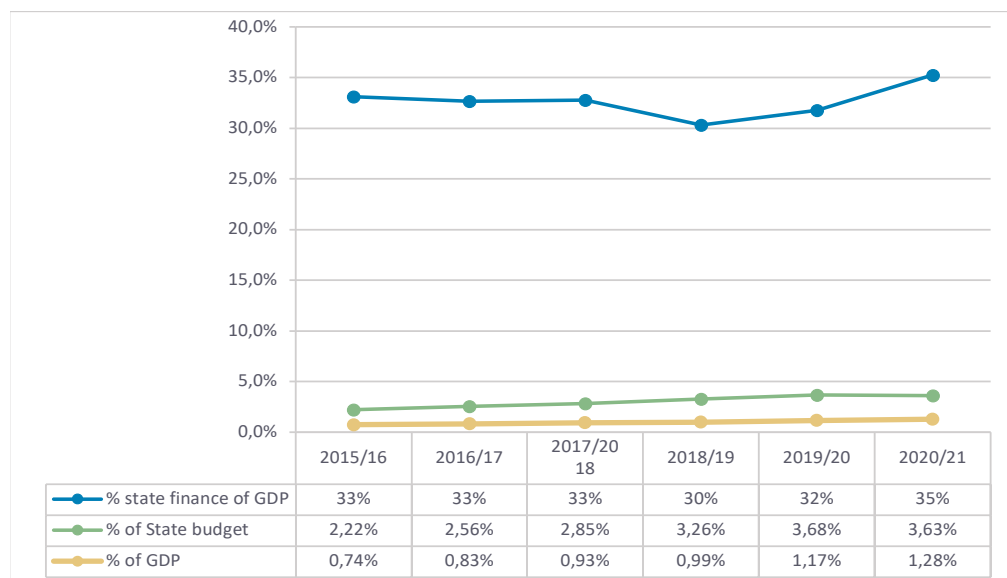


Figure 4: Proportion of block to earmarked funding (including NSFAS allocation) from 2015/16 to 2020/21

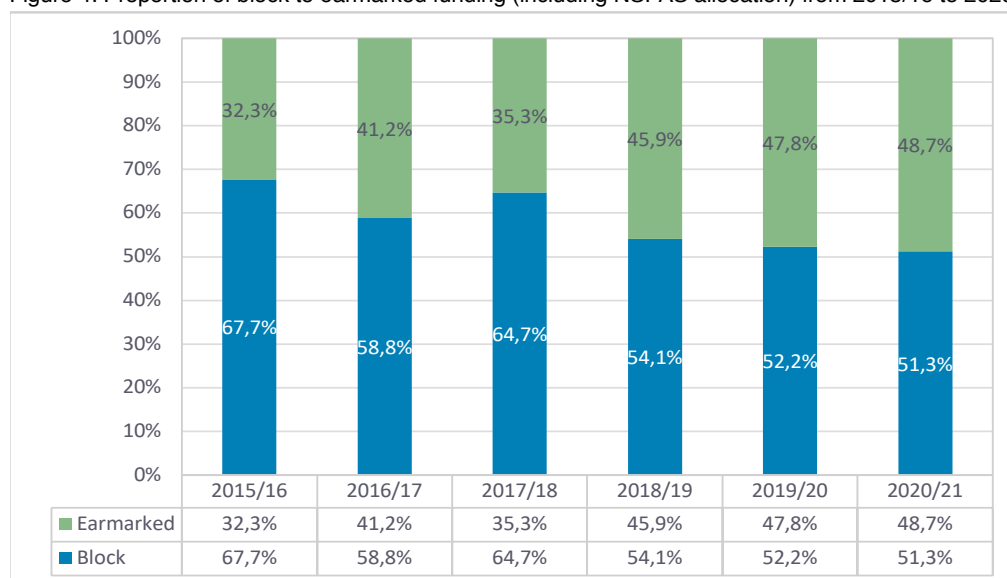


Figure 5: Block and earmarked funding (including NSFAS allocation) from 2015/16 to 2020/21

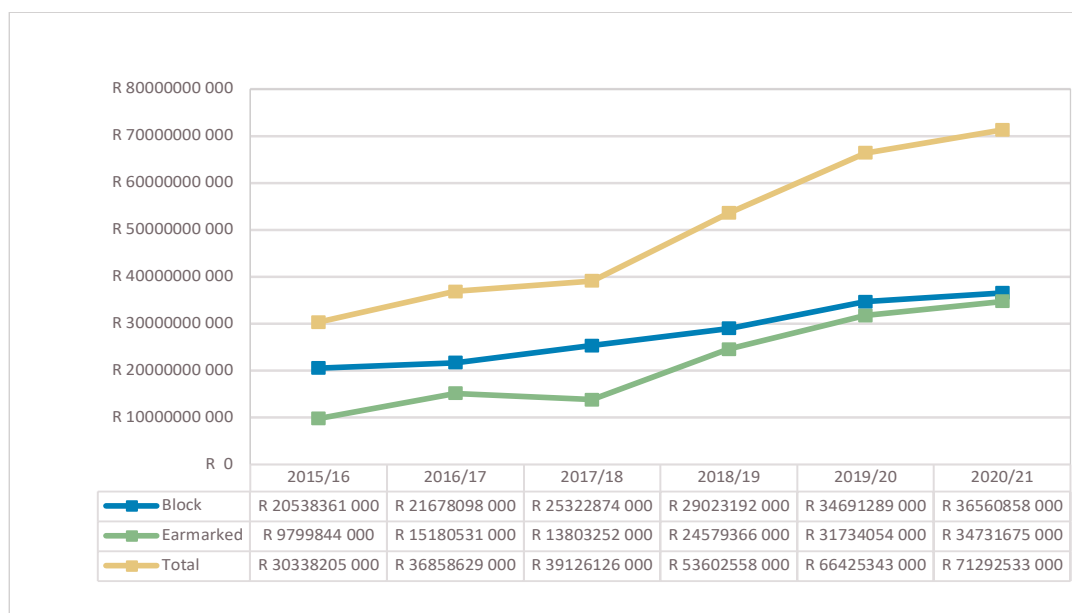


Figure 6: Proportion of block to earmarked funding (excluding NSFAS allocation) from 2015/16 to 2020/21

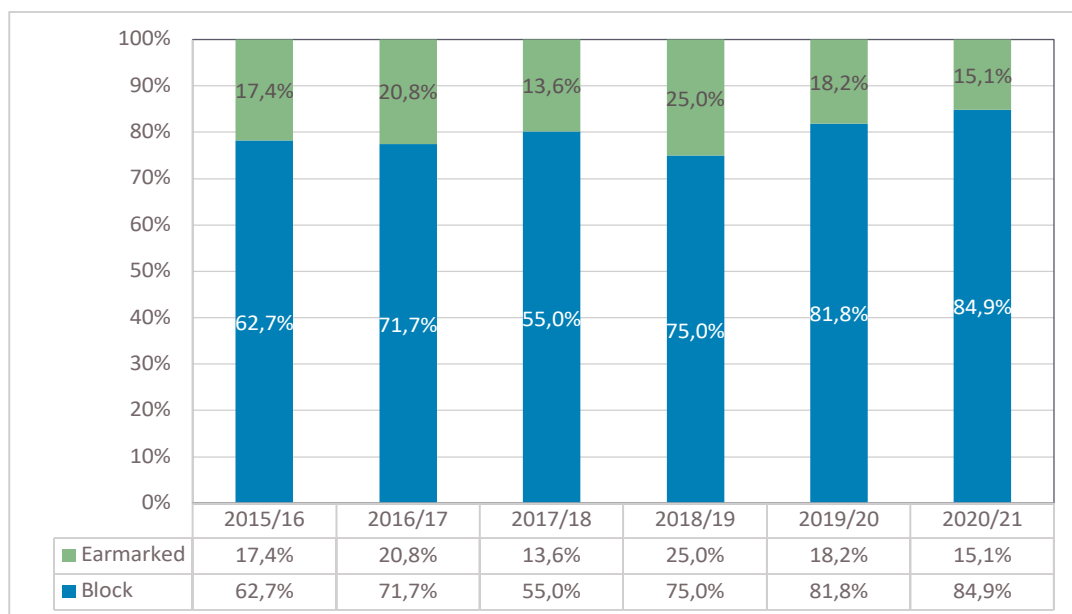


Figure 7: Block and earmarked funding (excluding NSFAS allocation) from 2015/16 to 2020/21

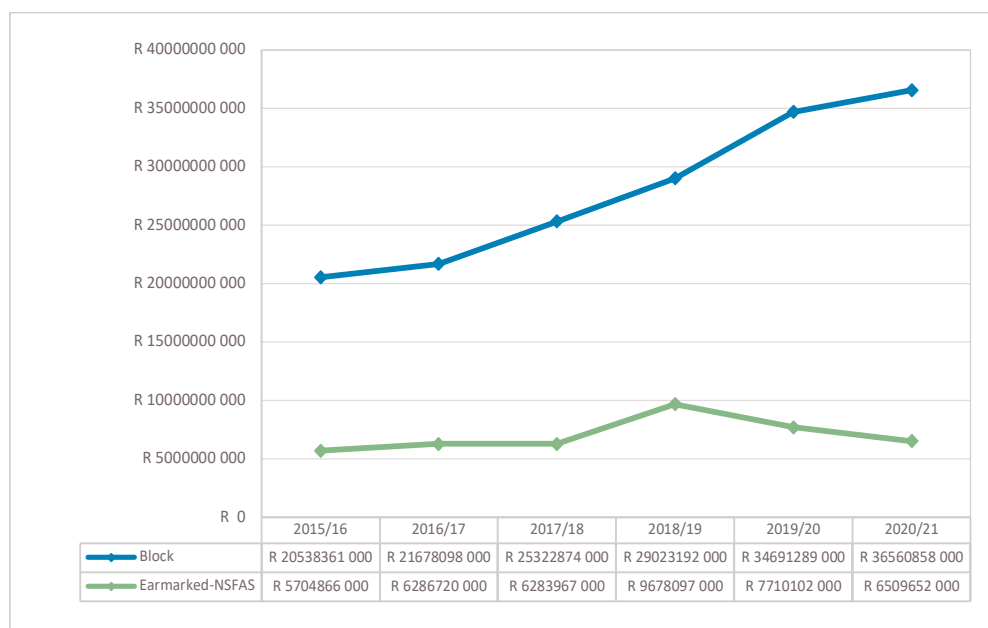


Figure 8: Disaggregated funding for NSFAS, teaching grants, research grants and other grants.

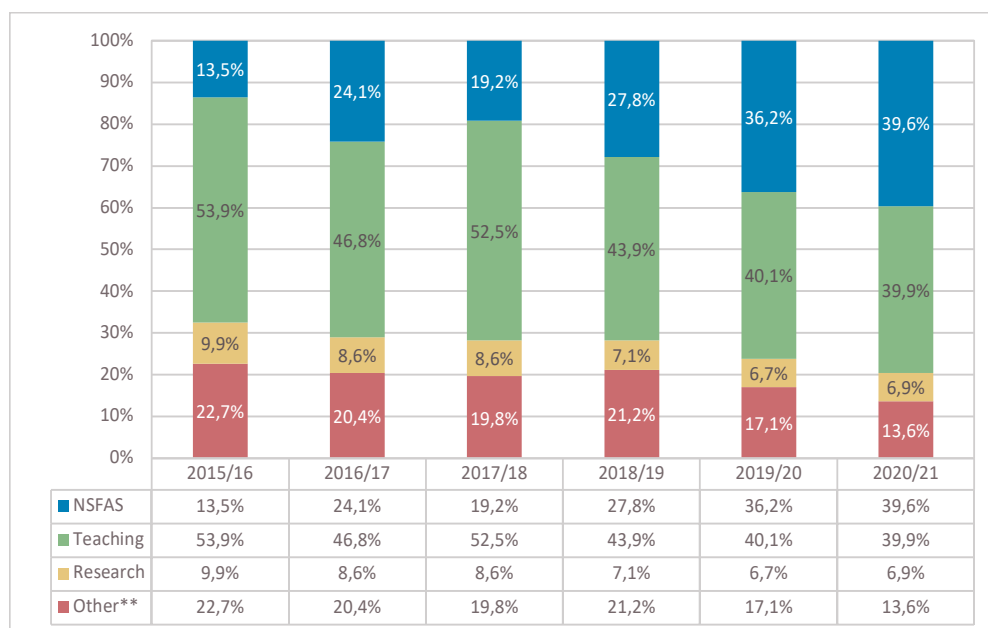


Figure 9: Funding for NSFAS, teaching grants, research grants and other grants from 2015/16 to 2020/21

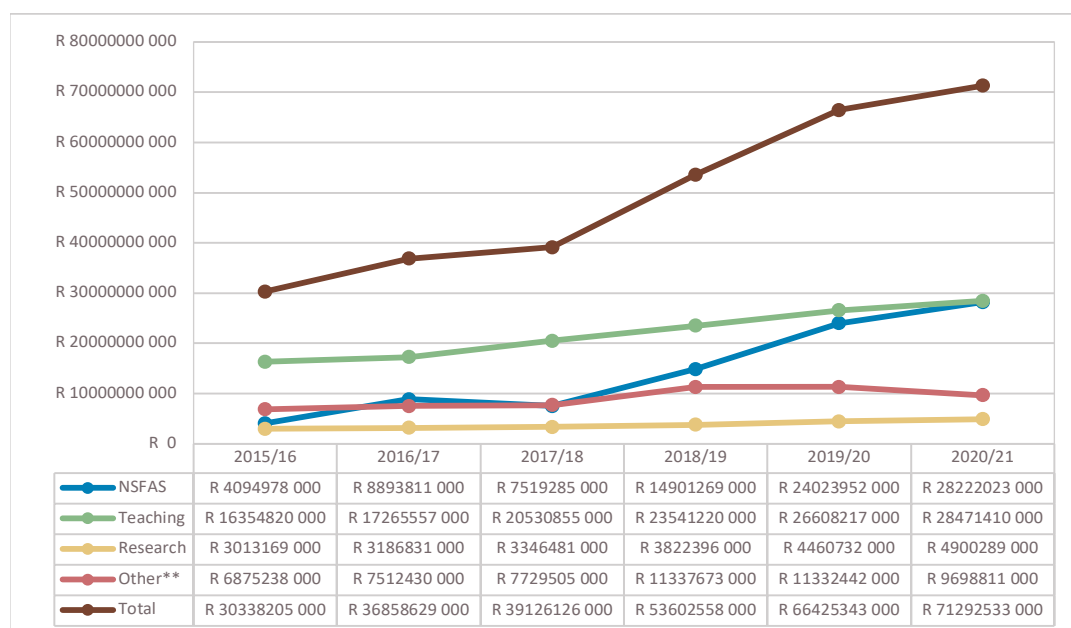


Figure 10: NSFAS funding for university students only from 2015/16 to 2020/21

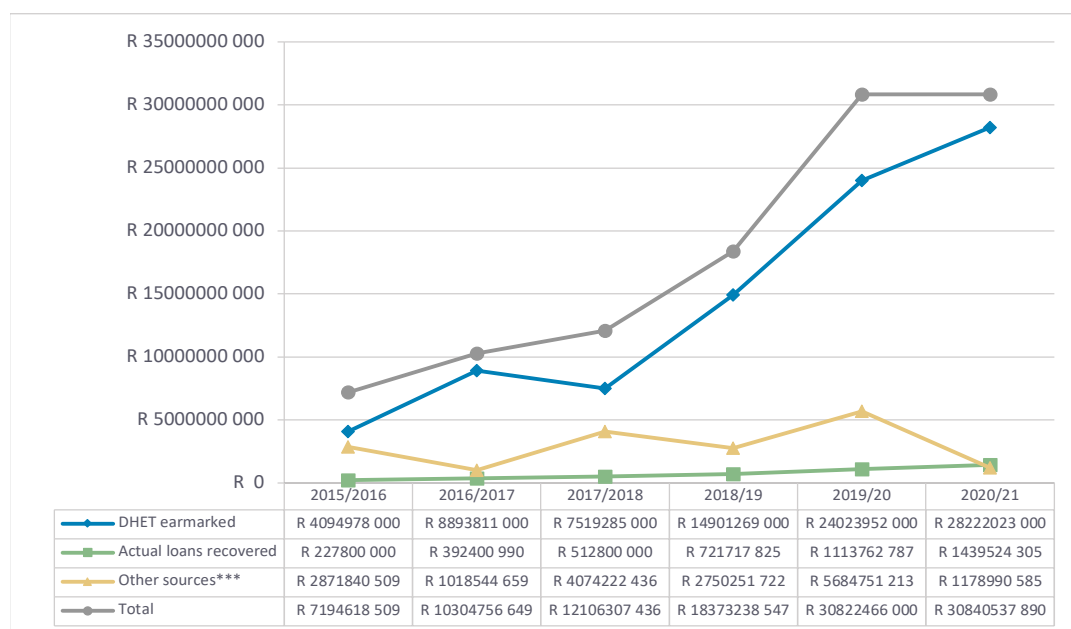


Figure 11: Proportion of DHET earmarked, actual loans recovered and other sources from 2015 to 2020.

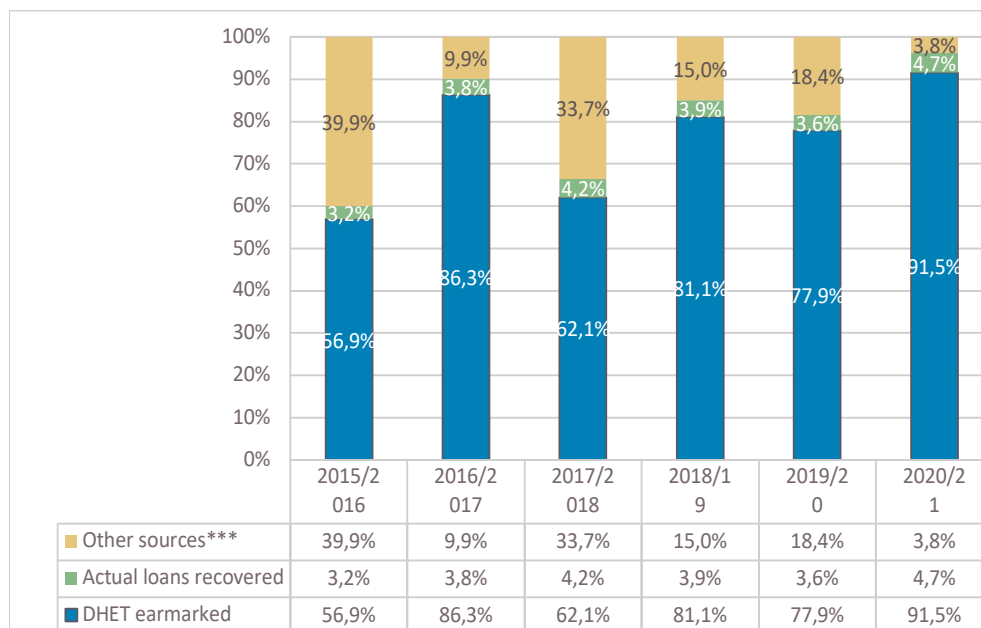


Figure 12: NSFAS student awards (in thousands) from 2015 to 2020 (academic years)

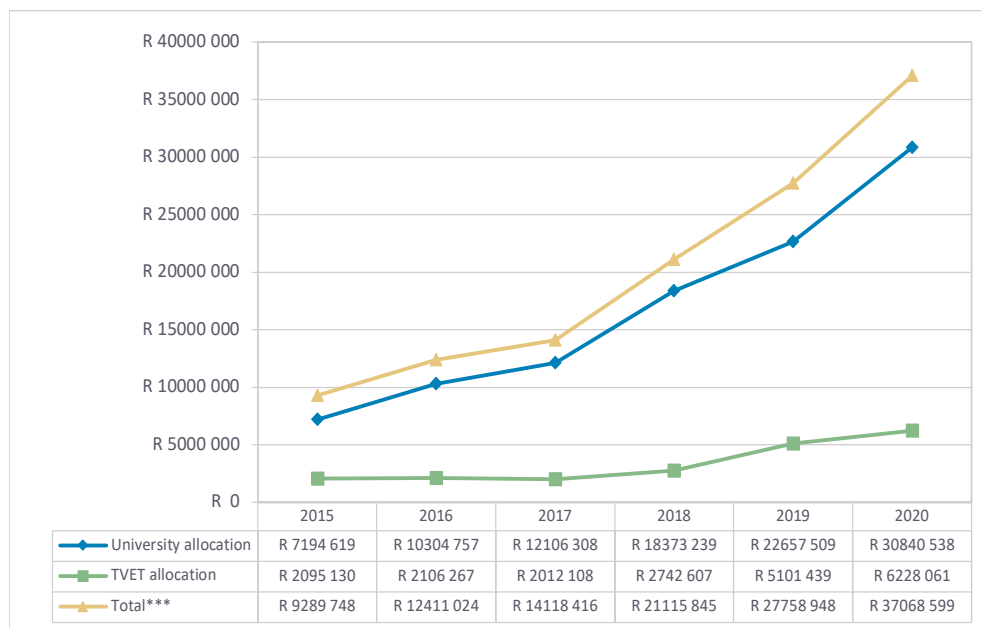


Figure 13: Headcount university students funded through NSFAS from 2013 to 2018 including Funza Lushaka Students (Education)

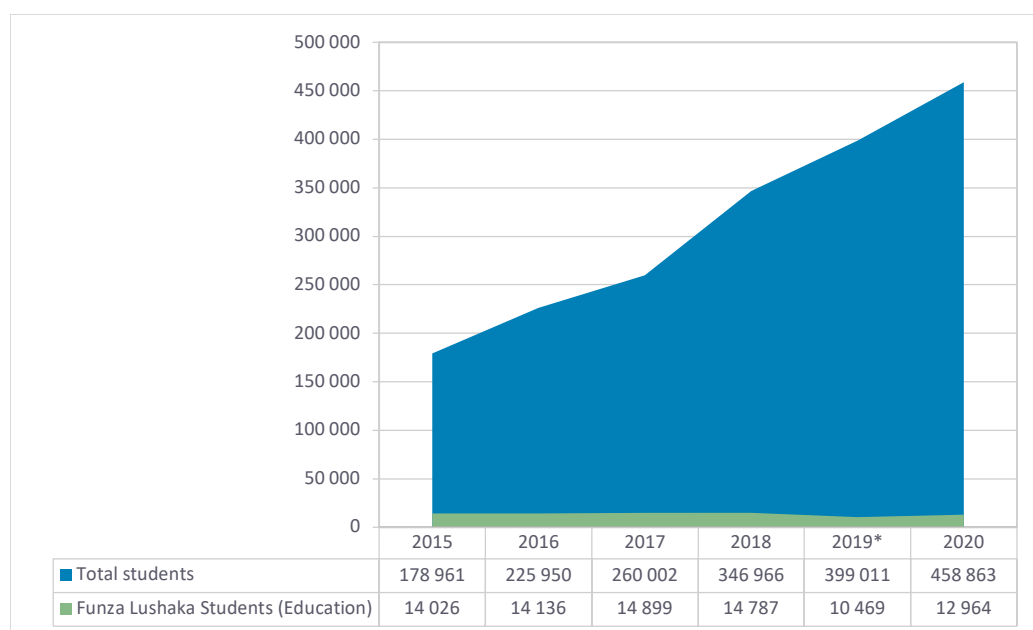


Figure 14: Proportion of institutional funding per source and institutional type 2020

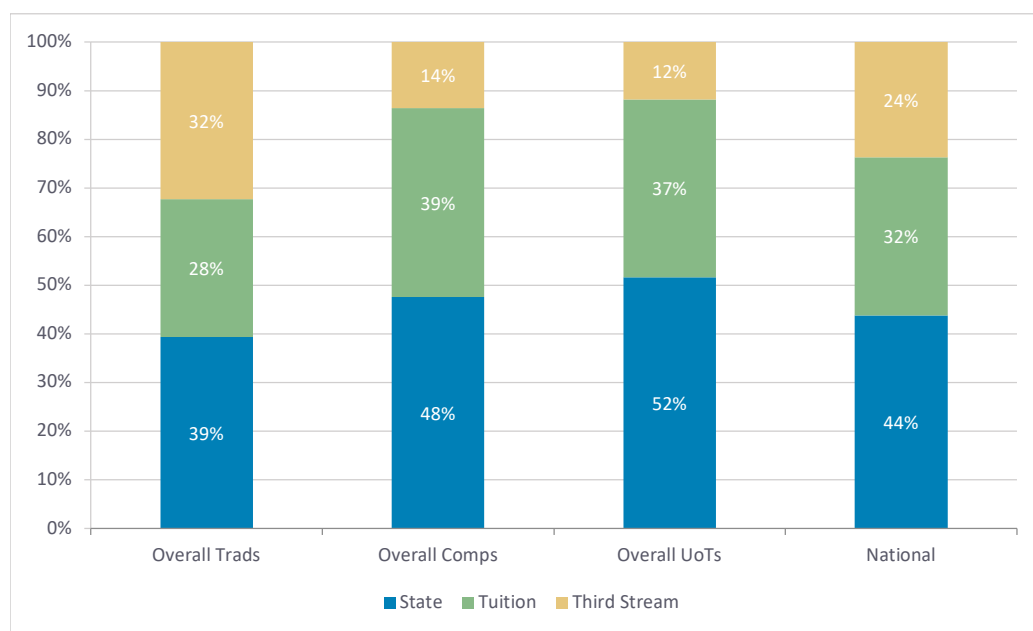


Figure 15: Proportion of Institutional funding per source and institutional type 2020: Overall Trads

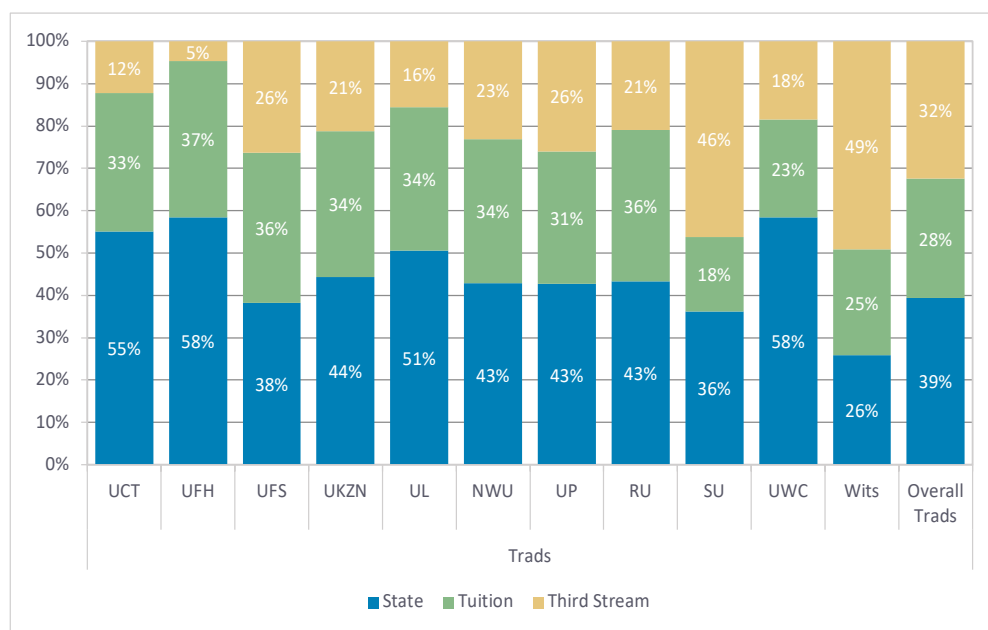


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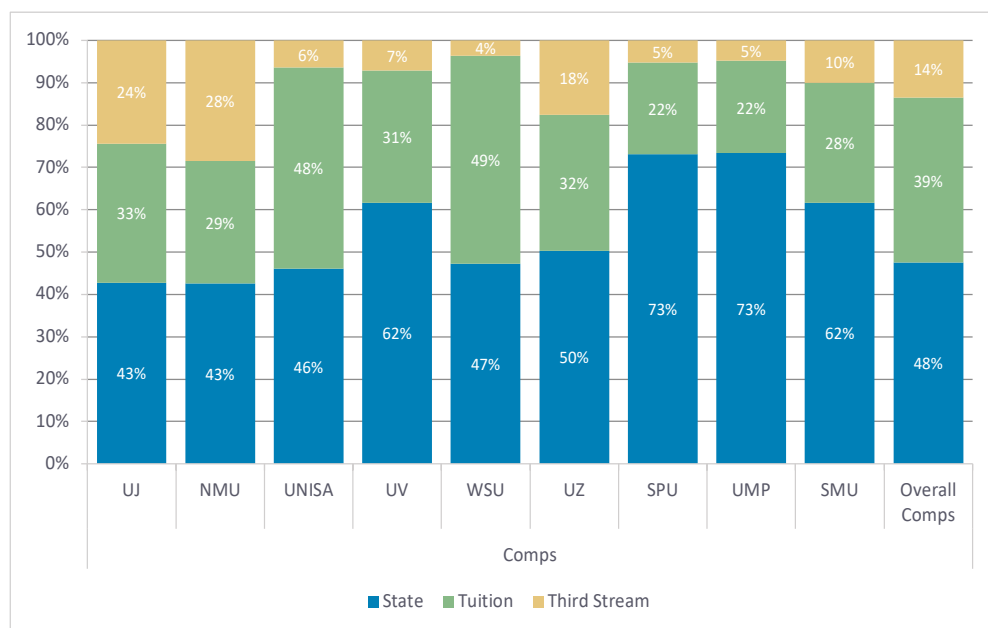


Figure 17: Proportion of Institutional funding per source and institutional type 2020: Overall UoTs

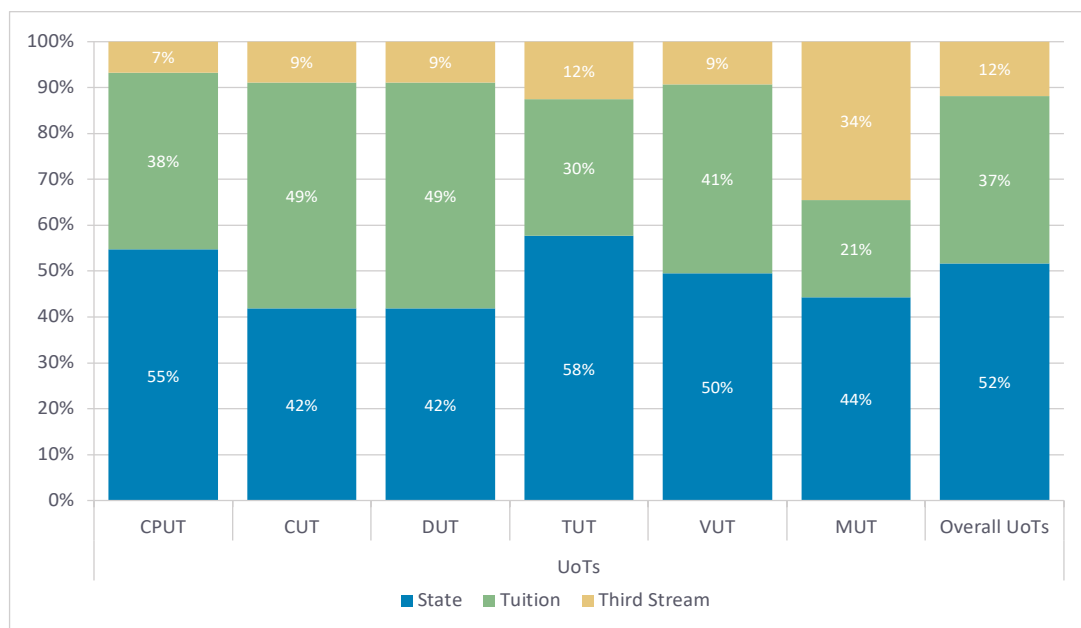


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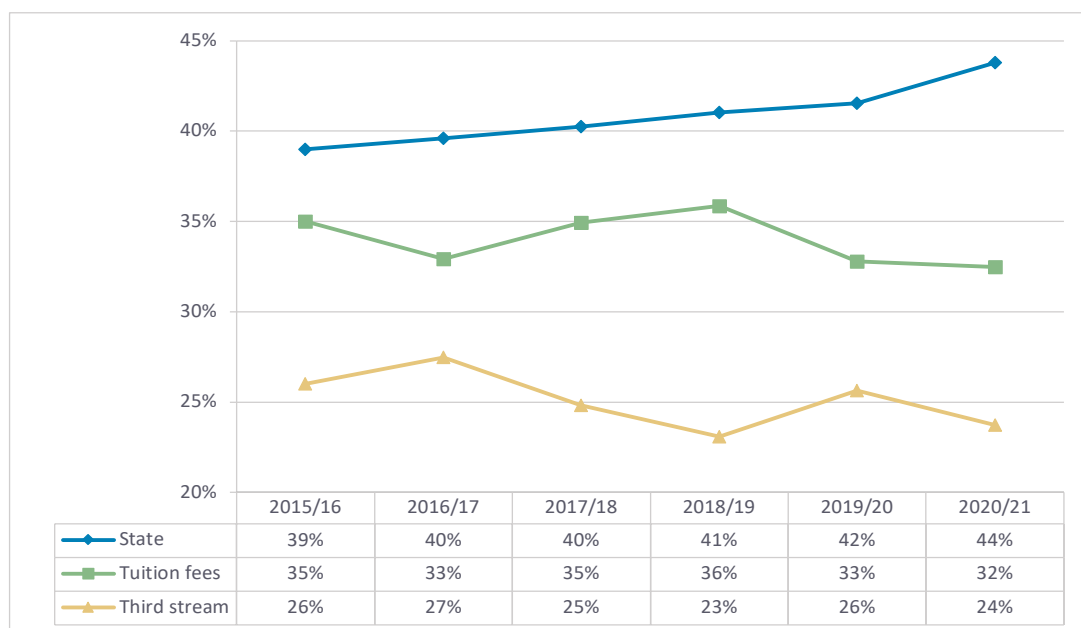


Figure 19: Developments funds.

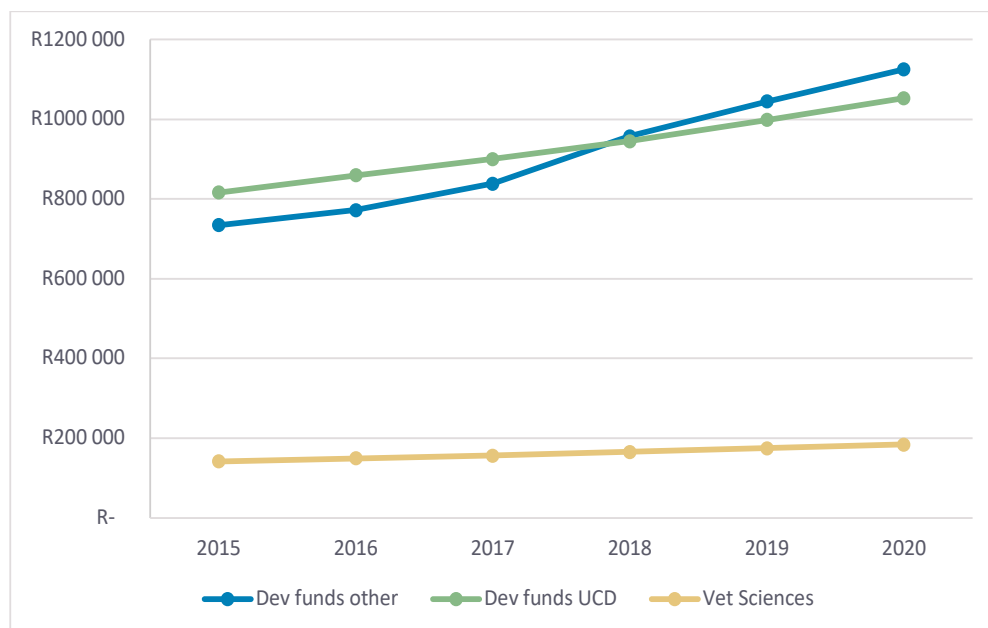


Figure 20: Teaching input grant 2015 -2020: UoTs

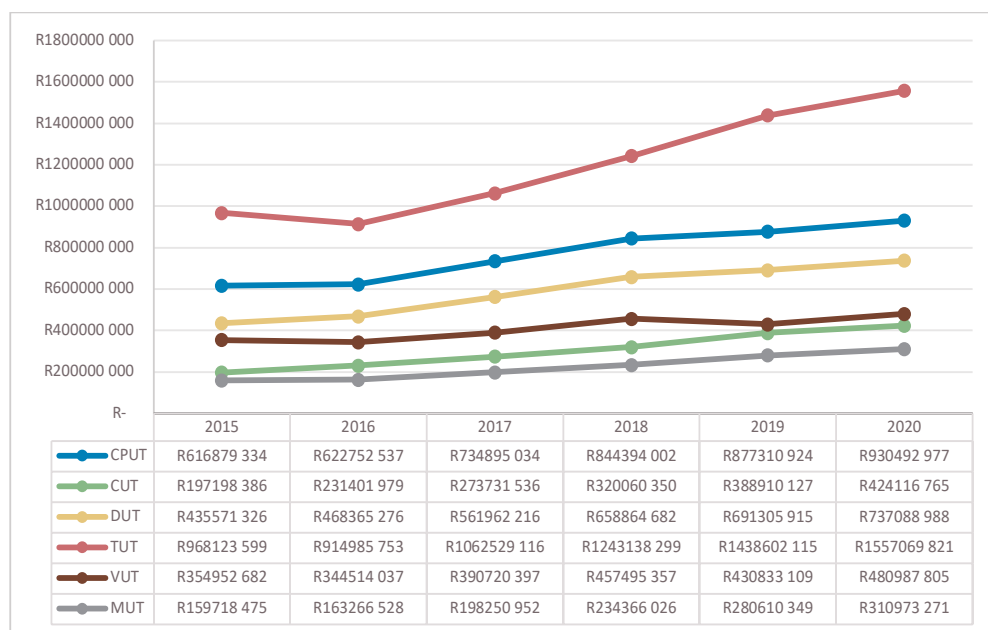


Figure 21: Teaching input grant 2015 -2020: Trads

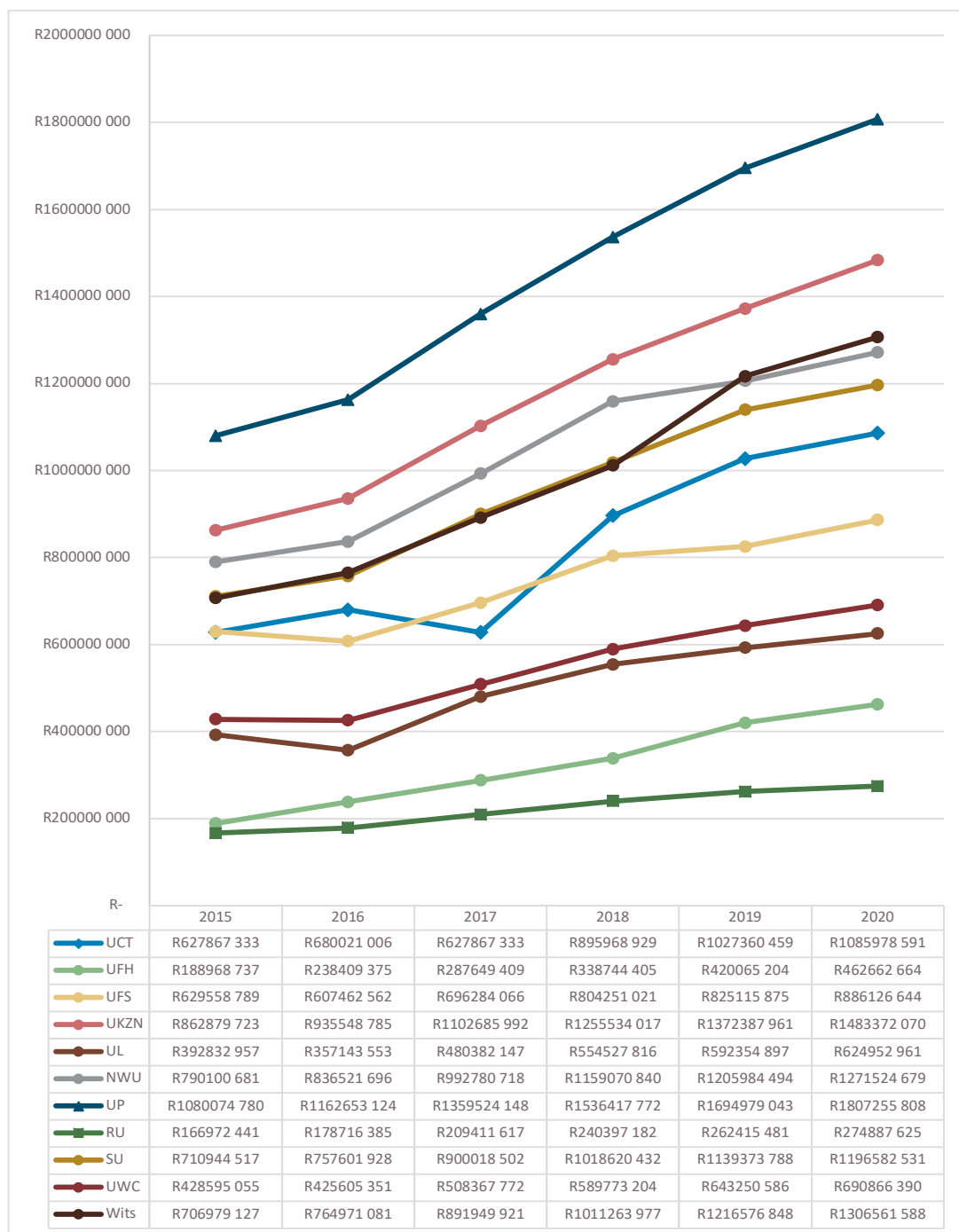


Figure 22: Teaching input grant 2015 -2020: Comps

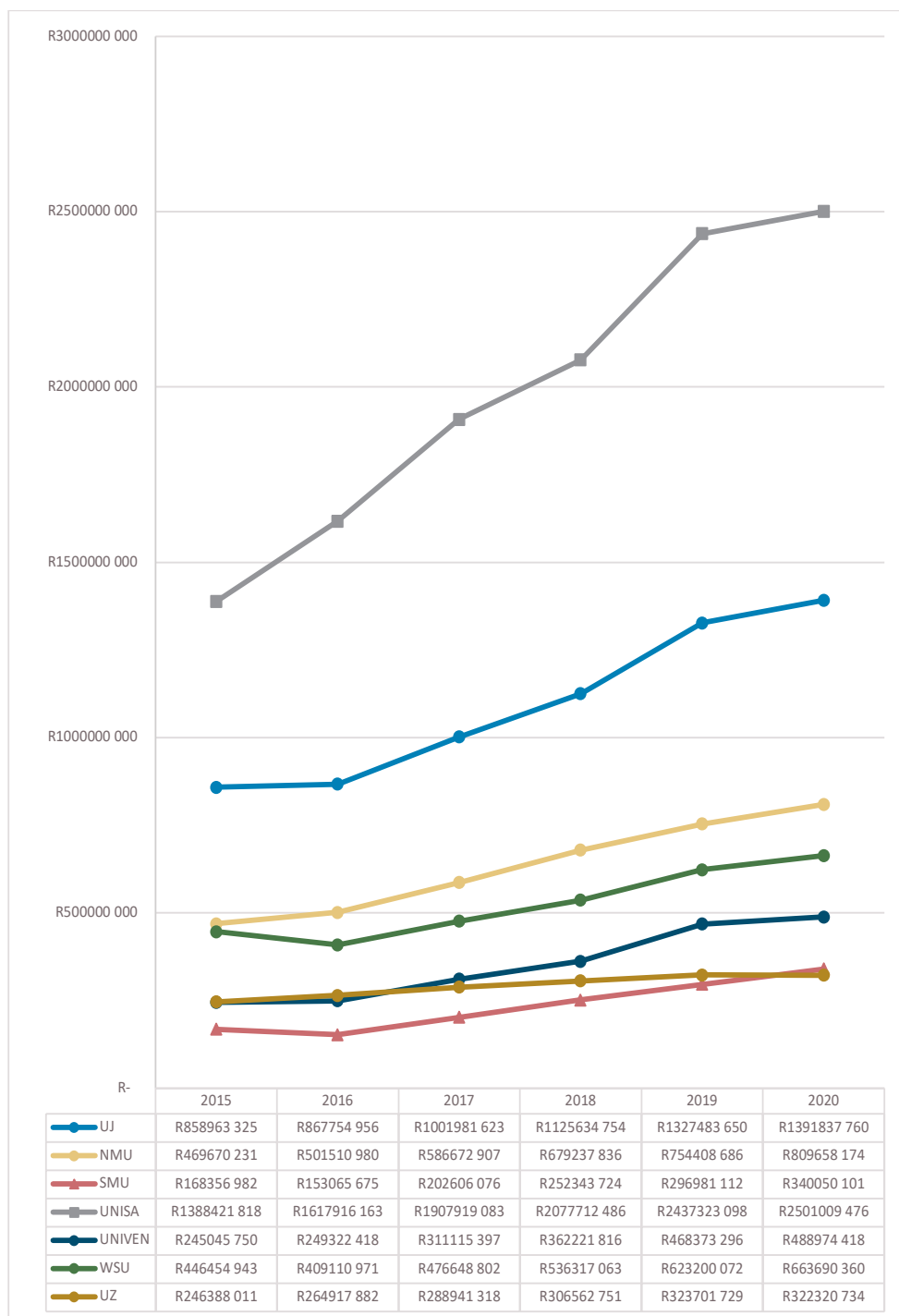


Figure 23: Teaching Input Units: Trads

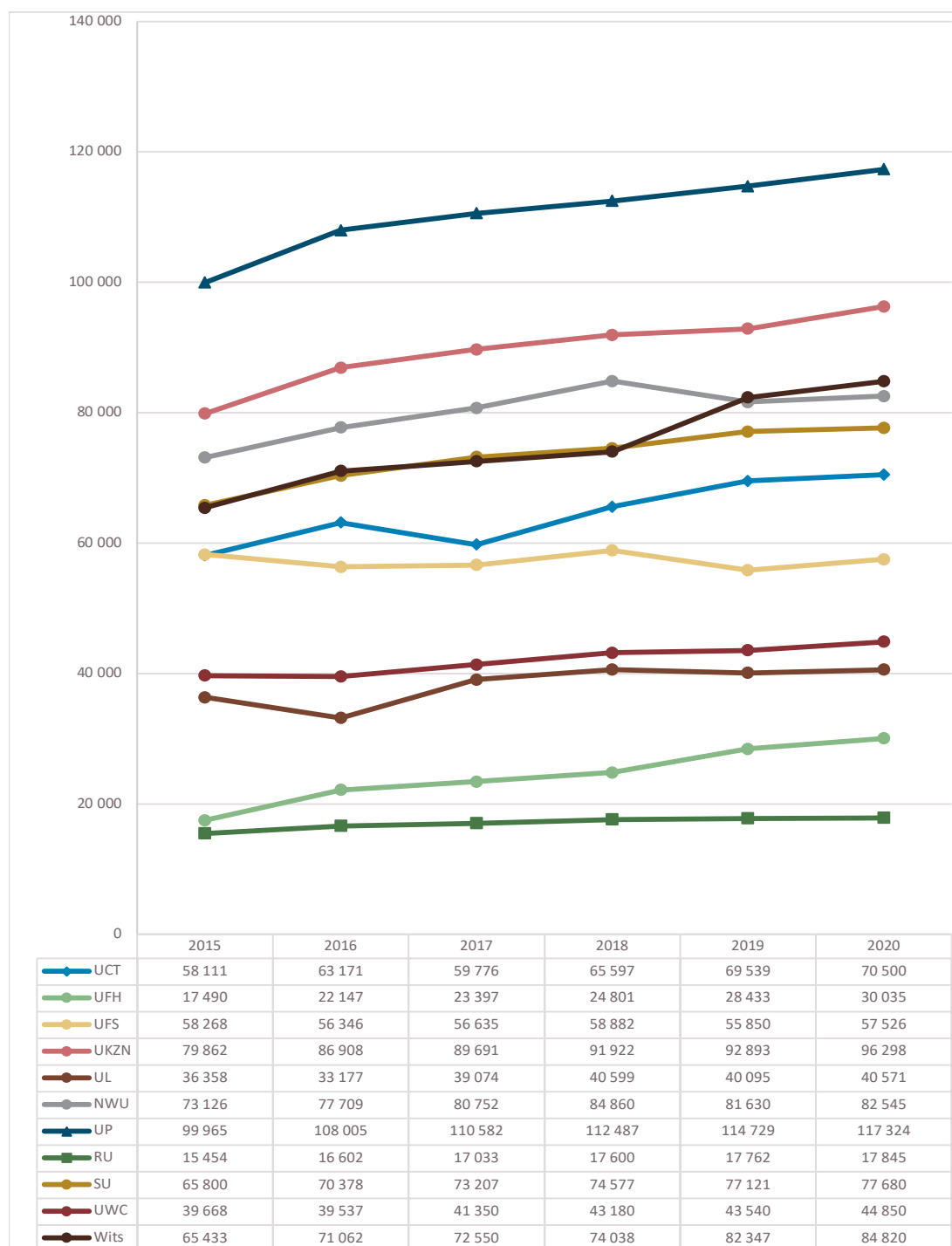


Figure 24: Teaching Input Units: UoTs

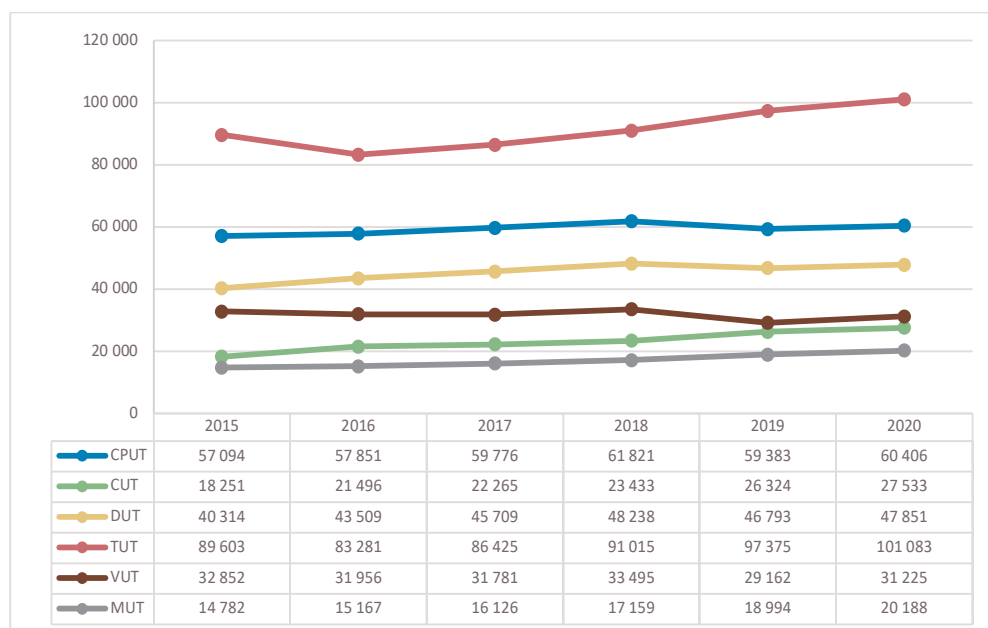


Figure 25: Teaching input units: Comps

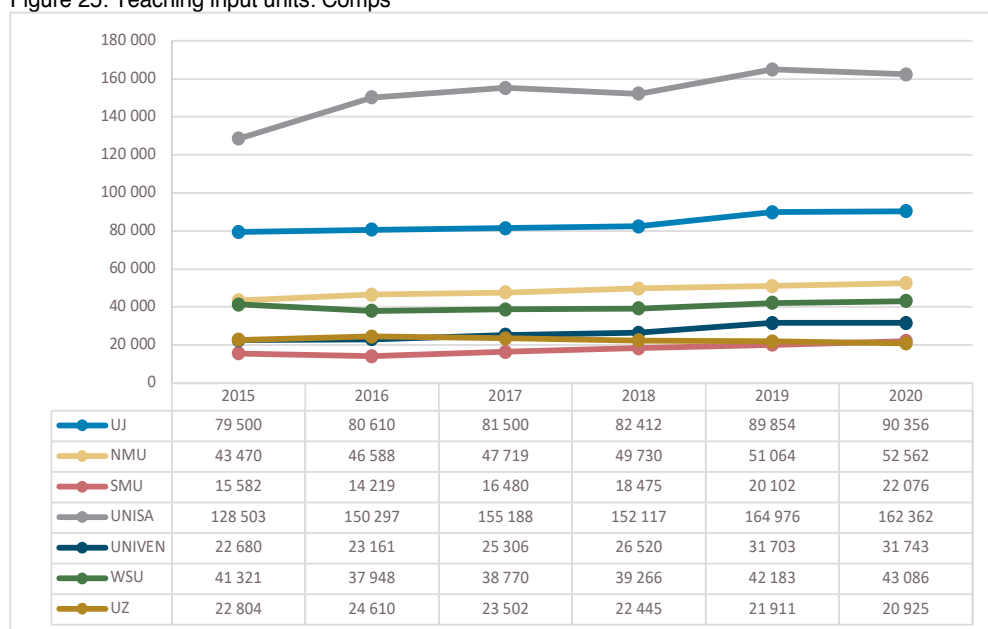


Figure 26: Teaching input grants: Comps

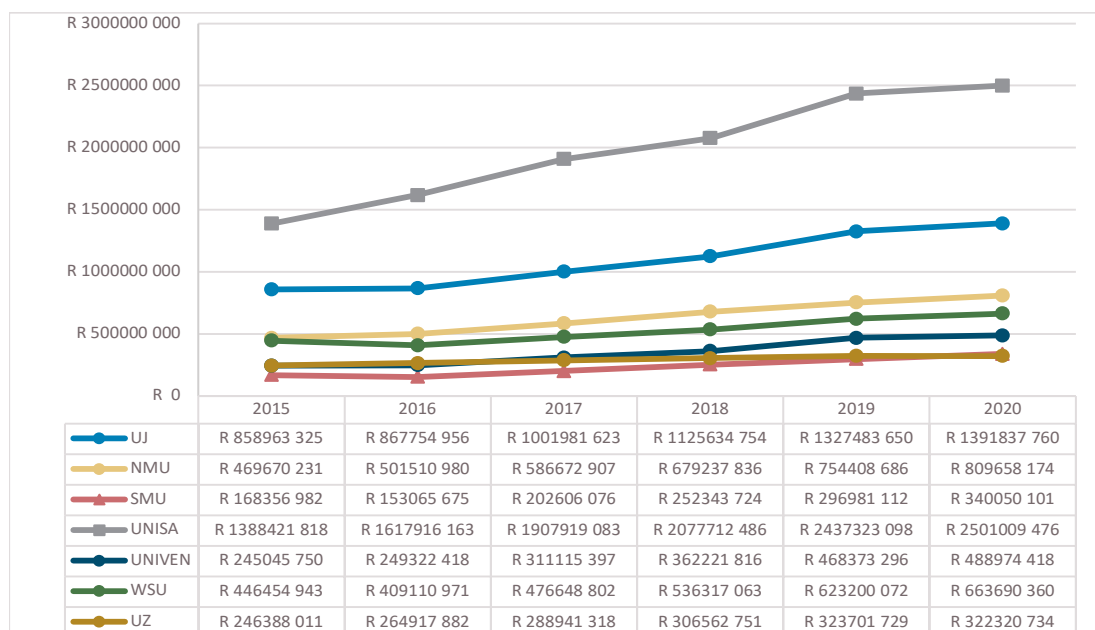


Figure 27: Teaching output units: Trads

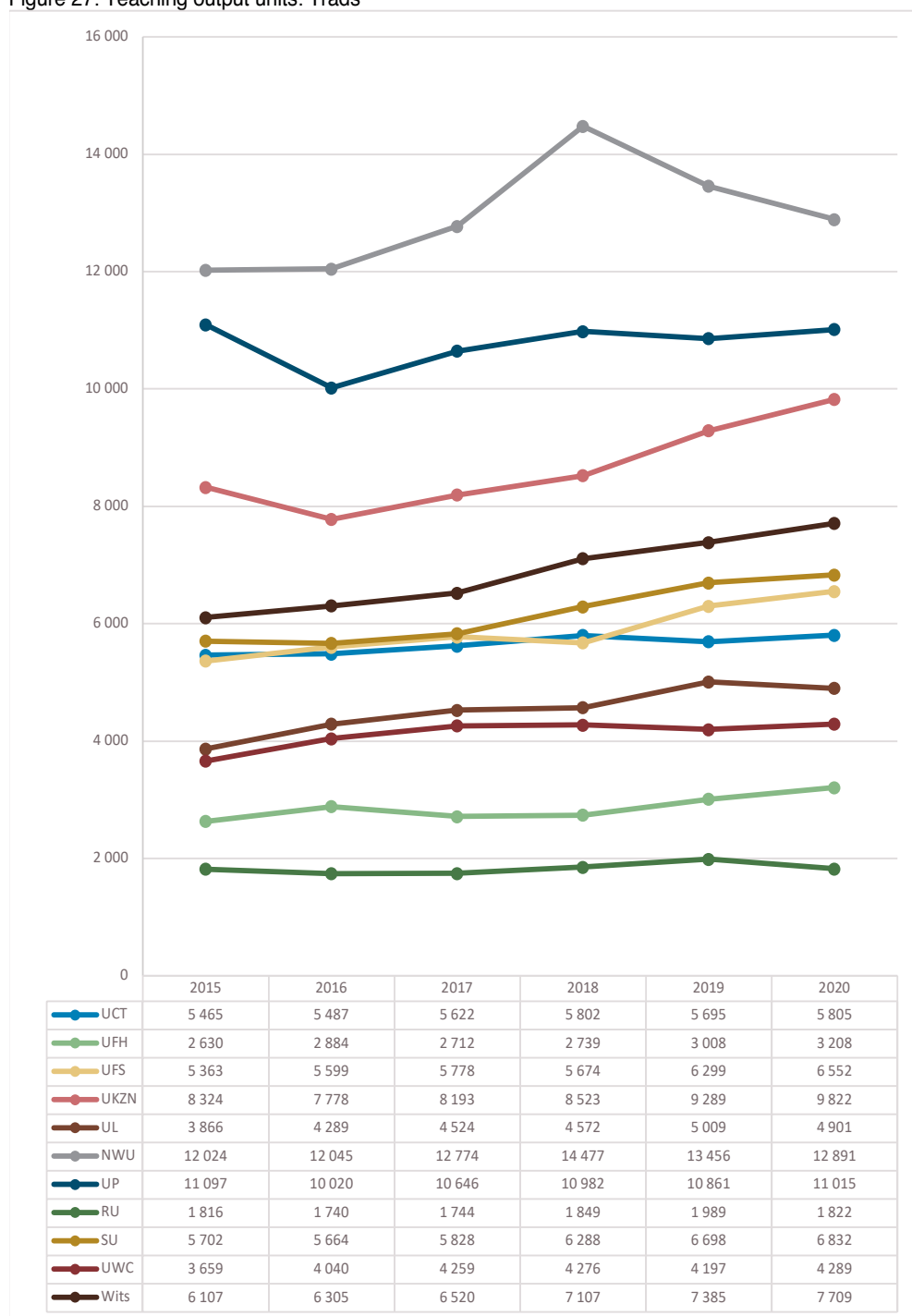


Figure 28: Teaching output grants: Trads

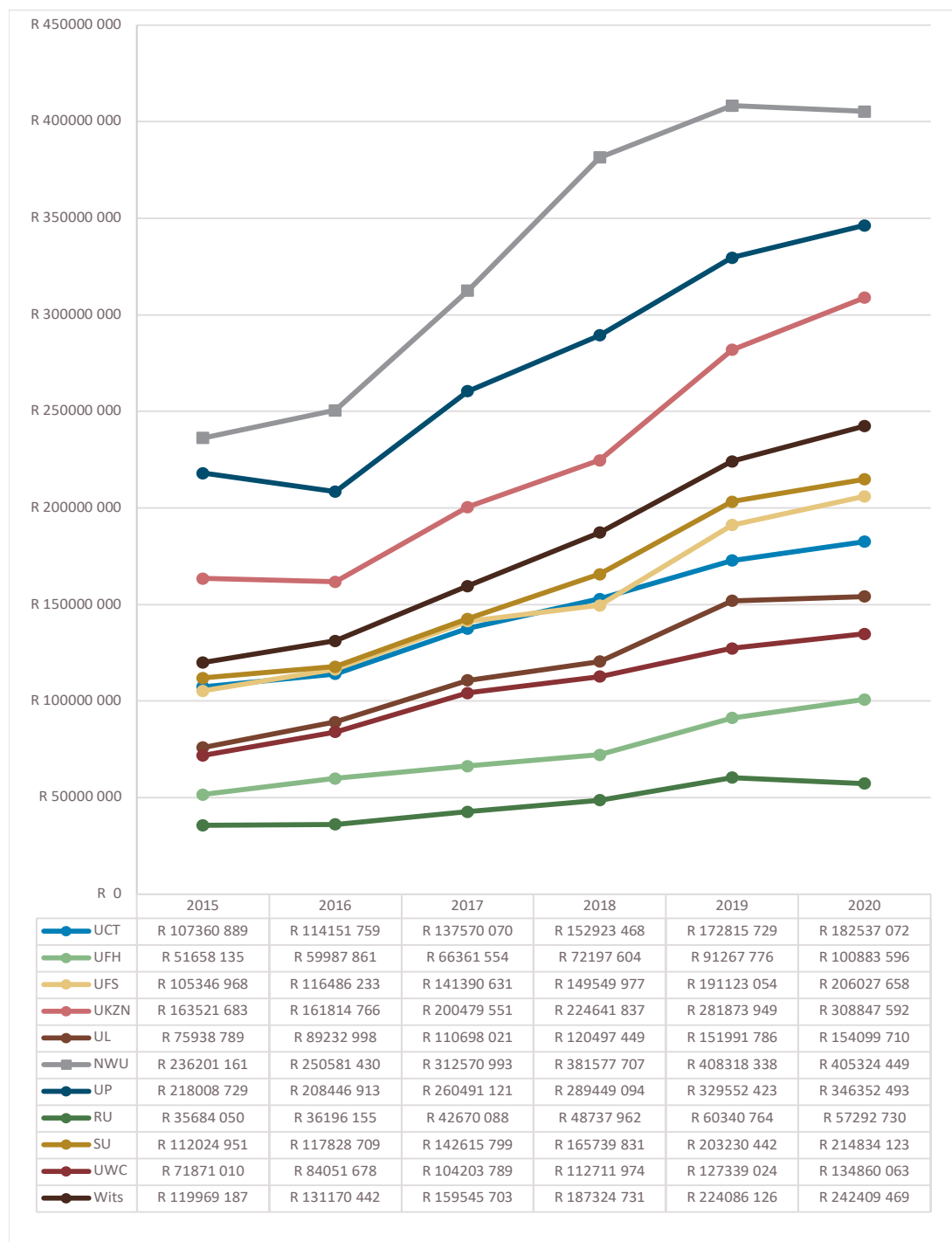


Figure 29: Teaching output units: UoTs

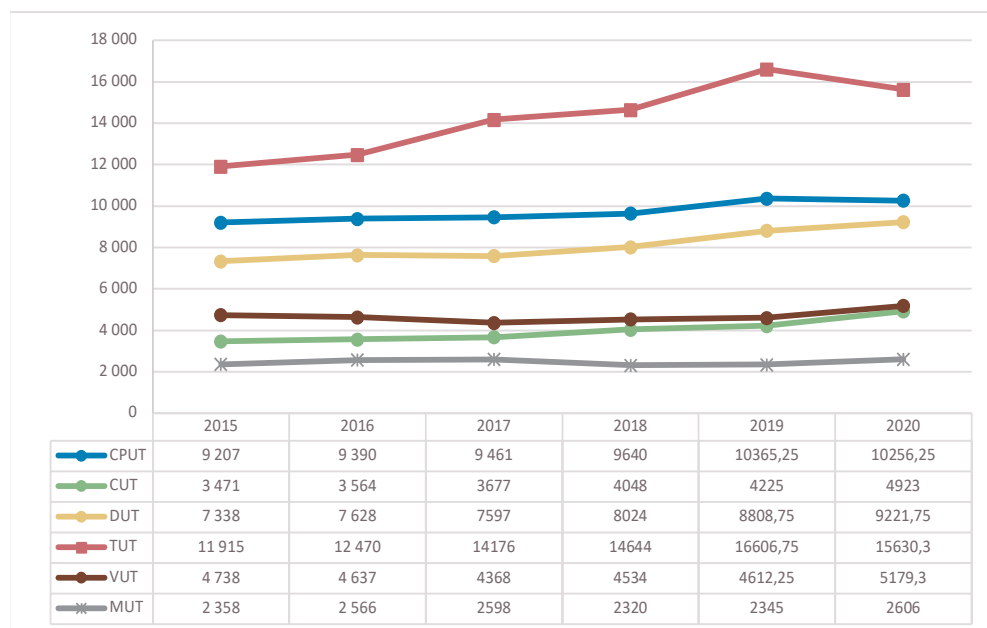


Figure 30: Teaching output grants: UoTs

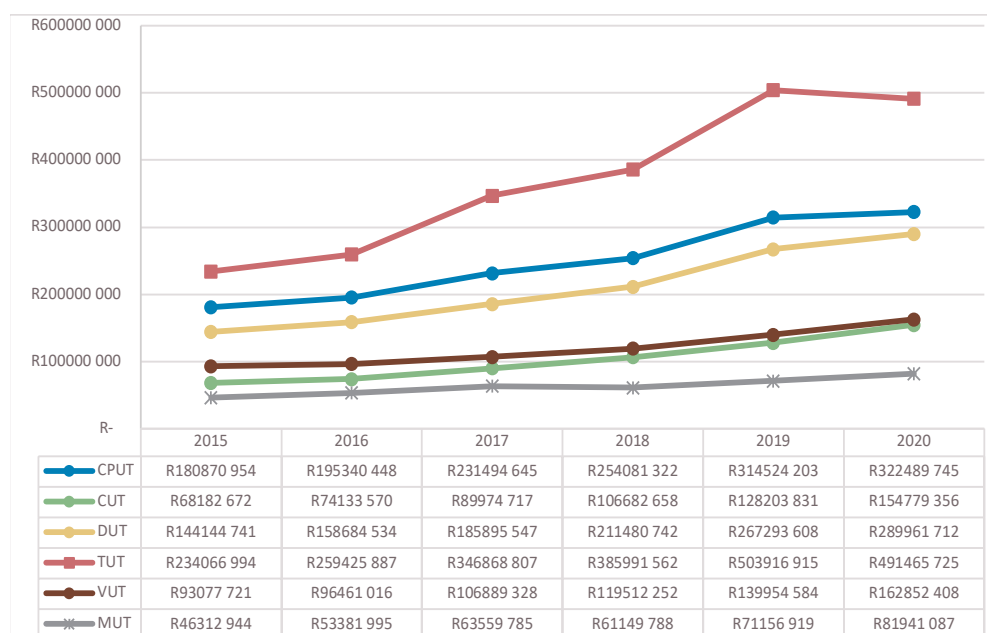


Figure 31: Teaching output units: Comps

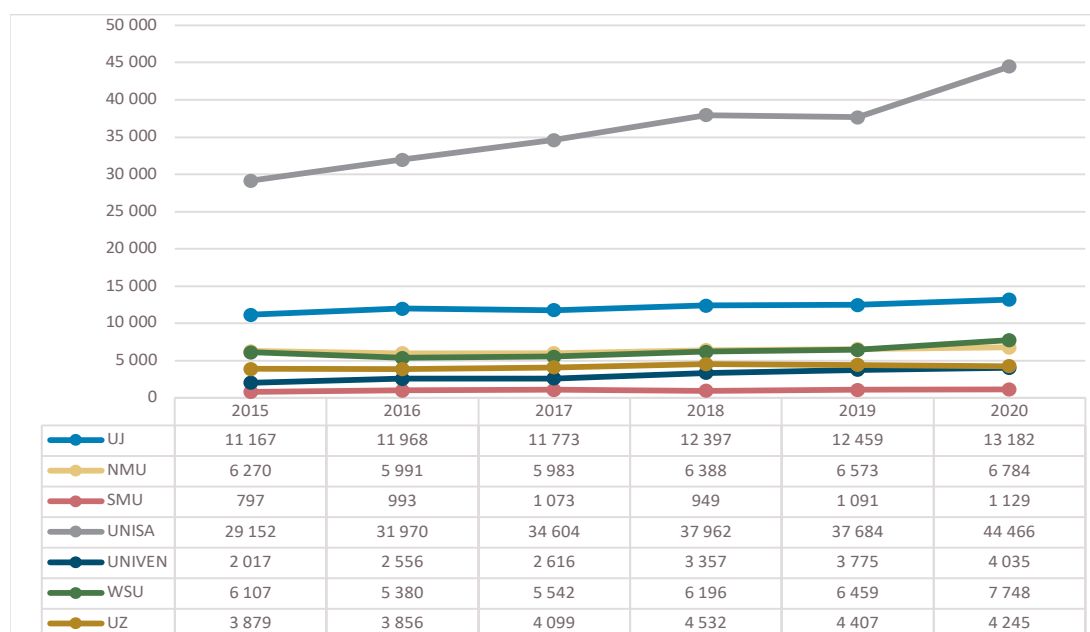
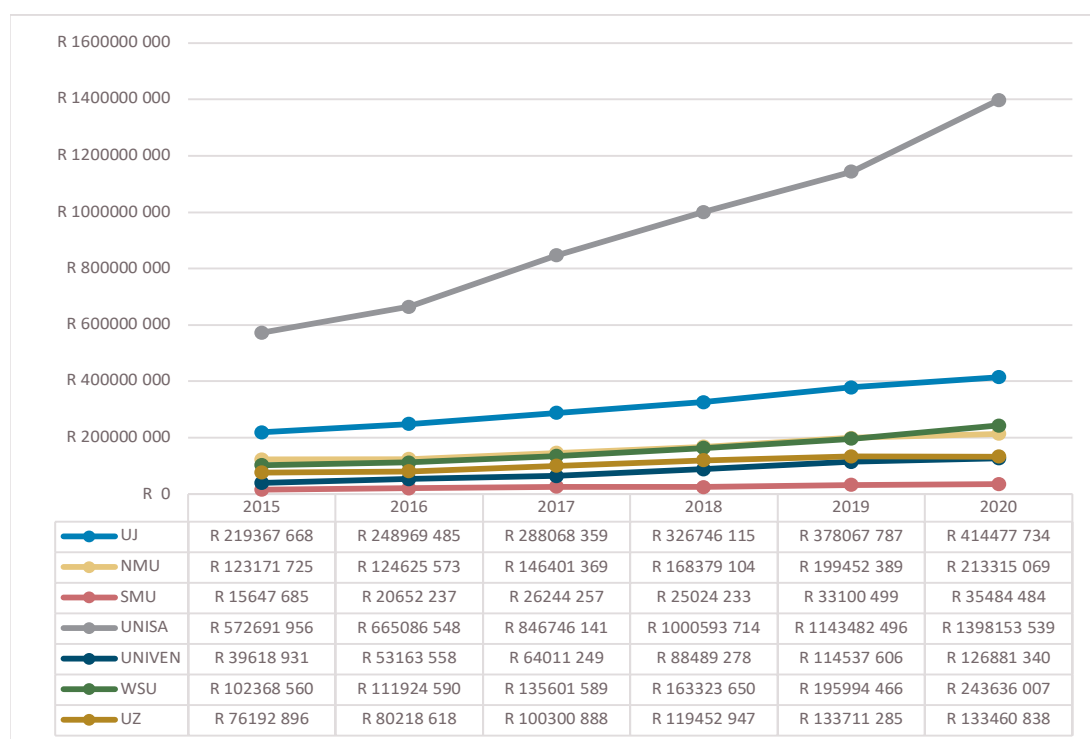


Figure 32: Teaching output grants: Comps



**Permanent academic staff
with master and doctoral
qualifications**

Figure 33: Headcount permanent academic staff with Master per traditional university

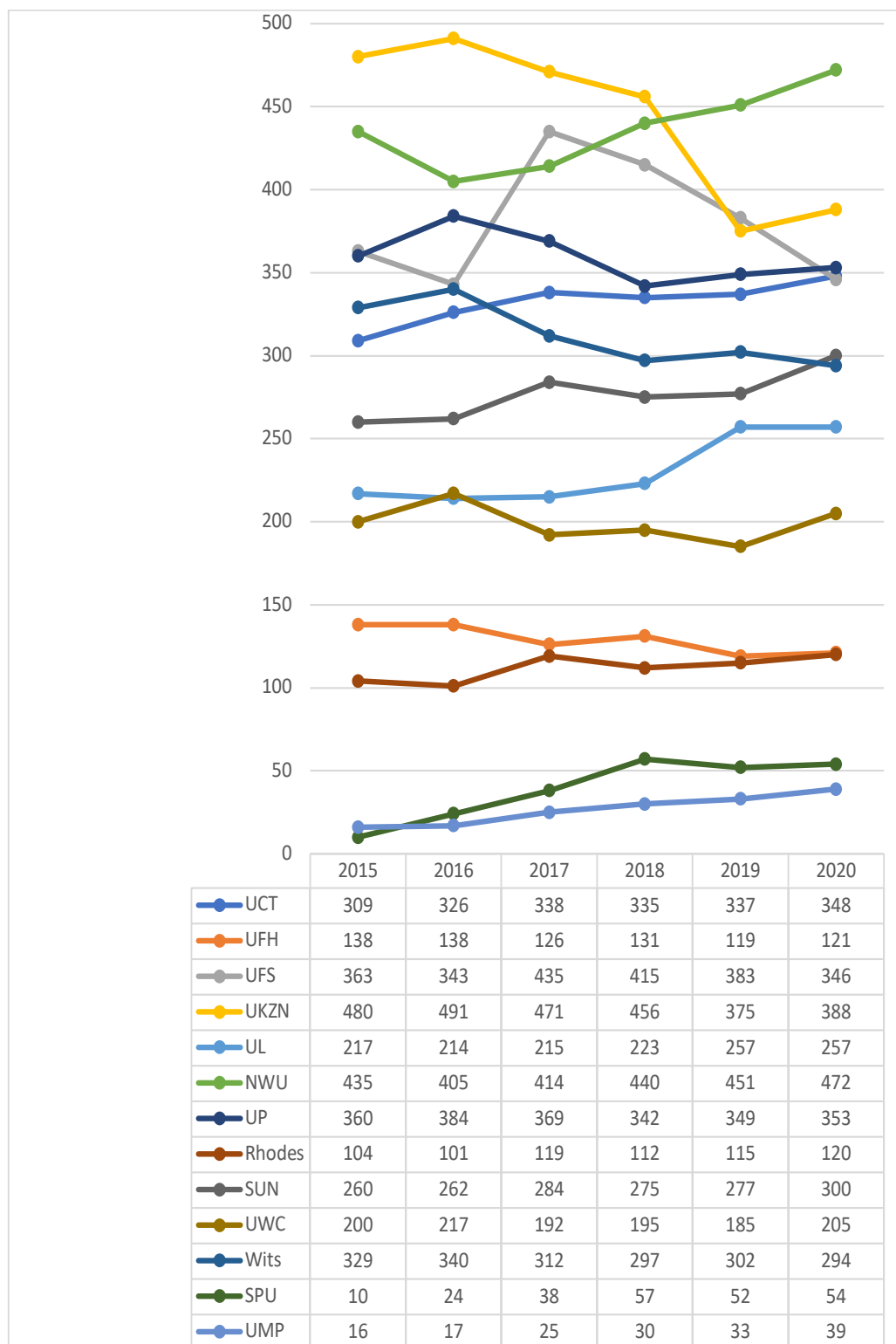


Figure 34: Headcount permanent academic staff with Master degree per comprehensive university

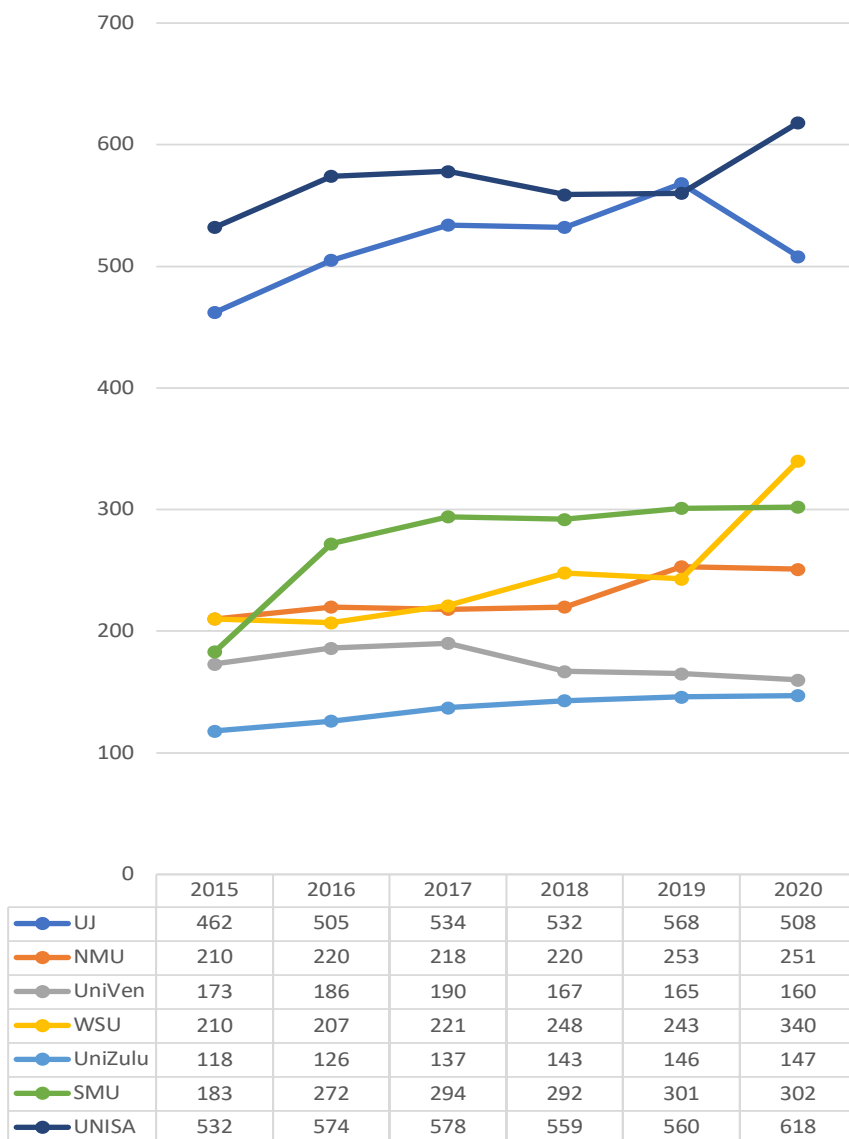


Figure 35: Headcount permanent academic staff with Master degree per university of technology

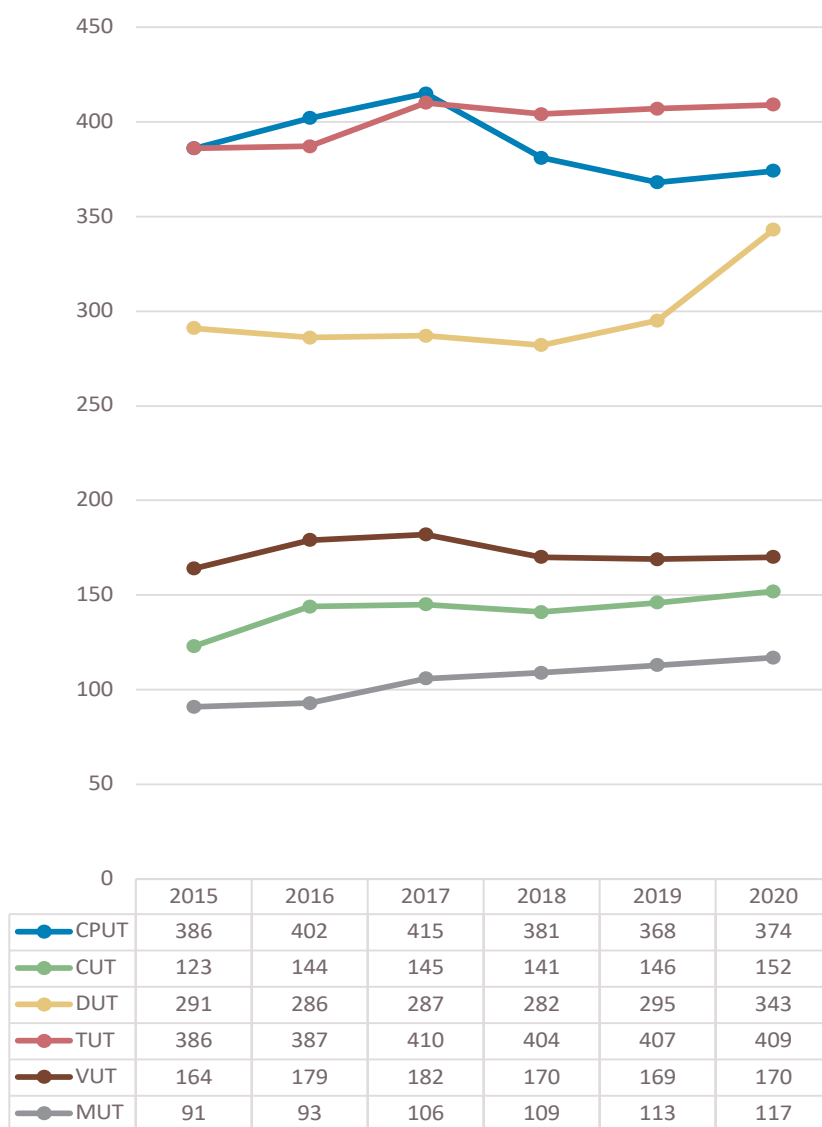


Figure 36: Headcount permanent academic staff with Doctoral per traditional university

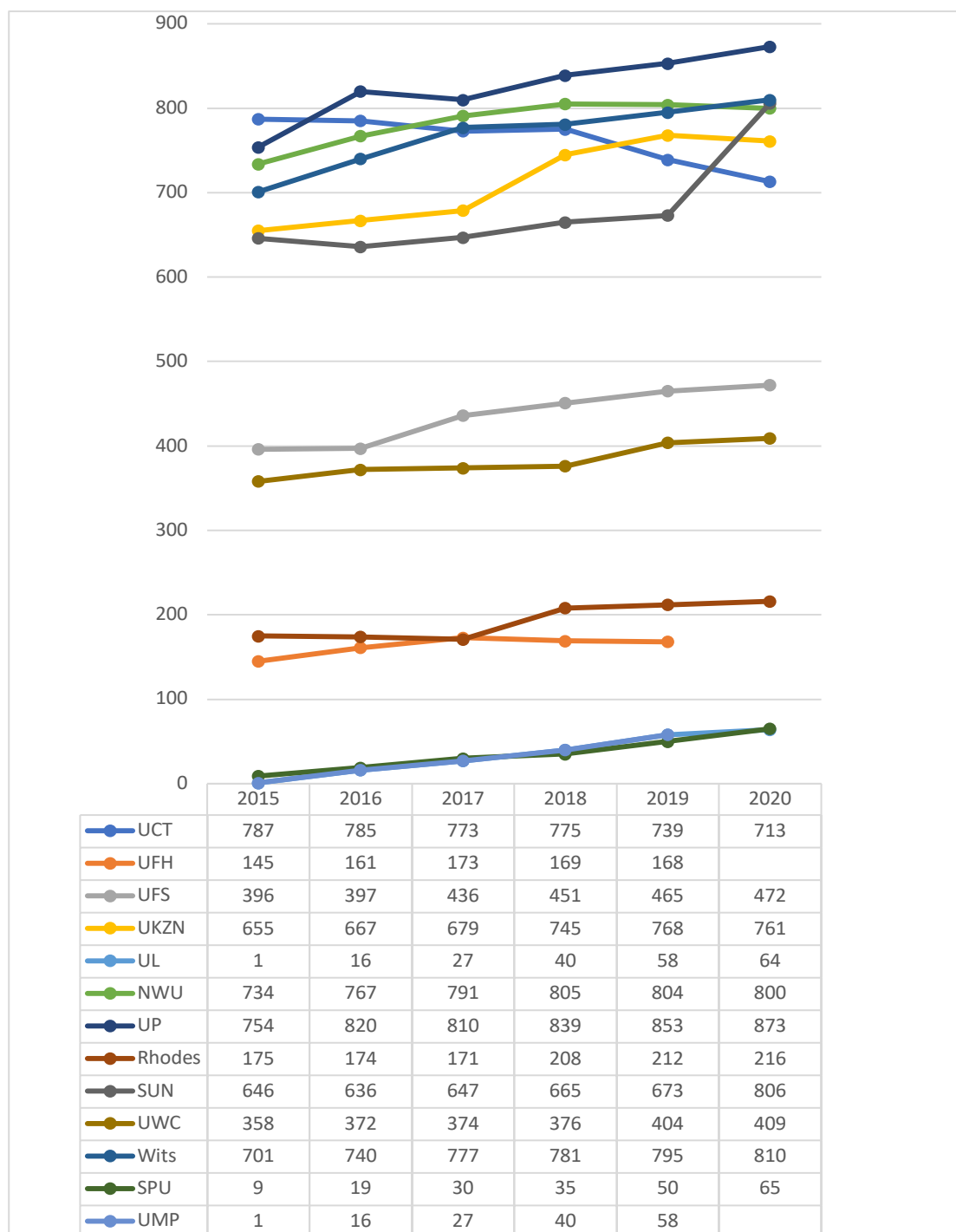


Figure 37: Headcount permanent academic staff with doctoral per comprehensive university

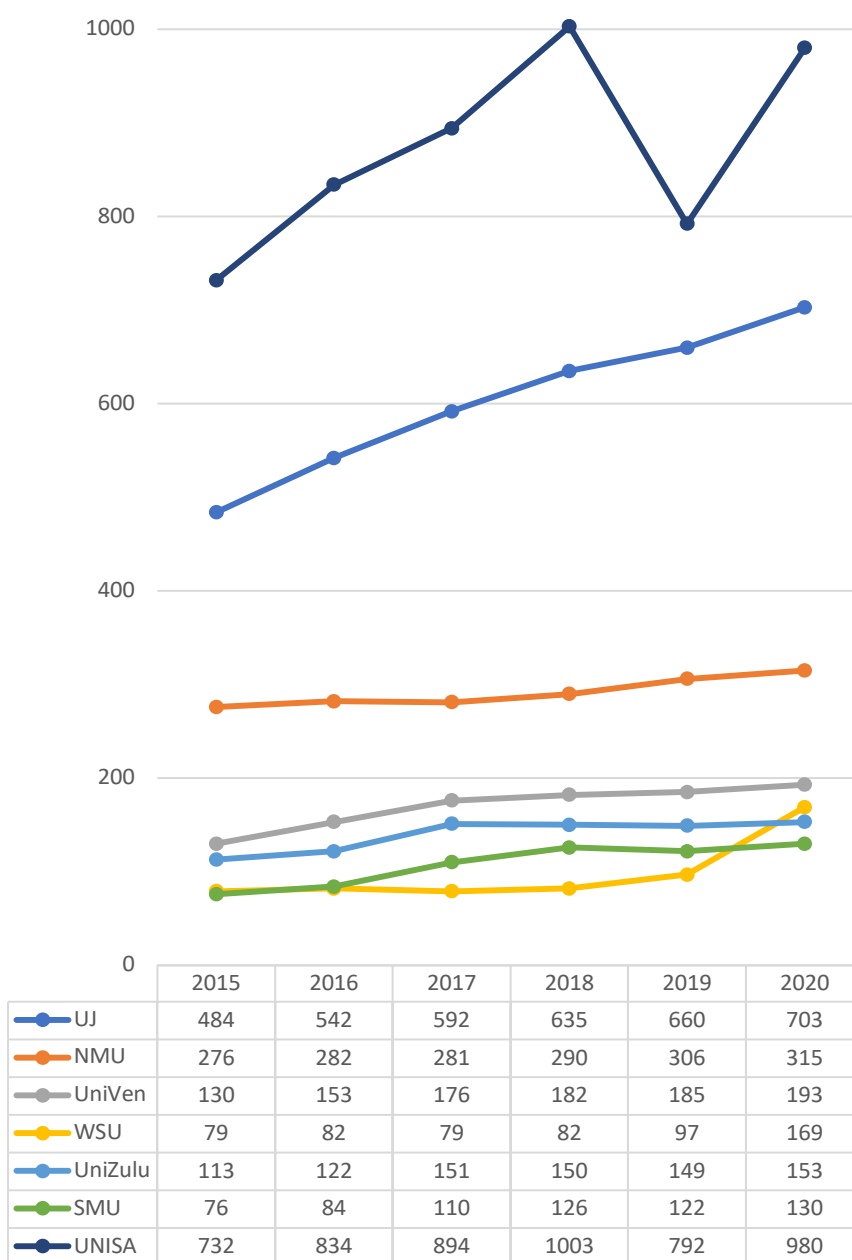


Figure 38: Headcount permanent academic staff with doctoral per university of technology

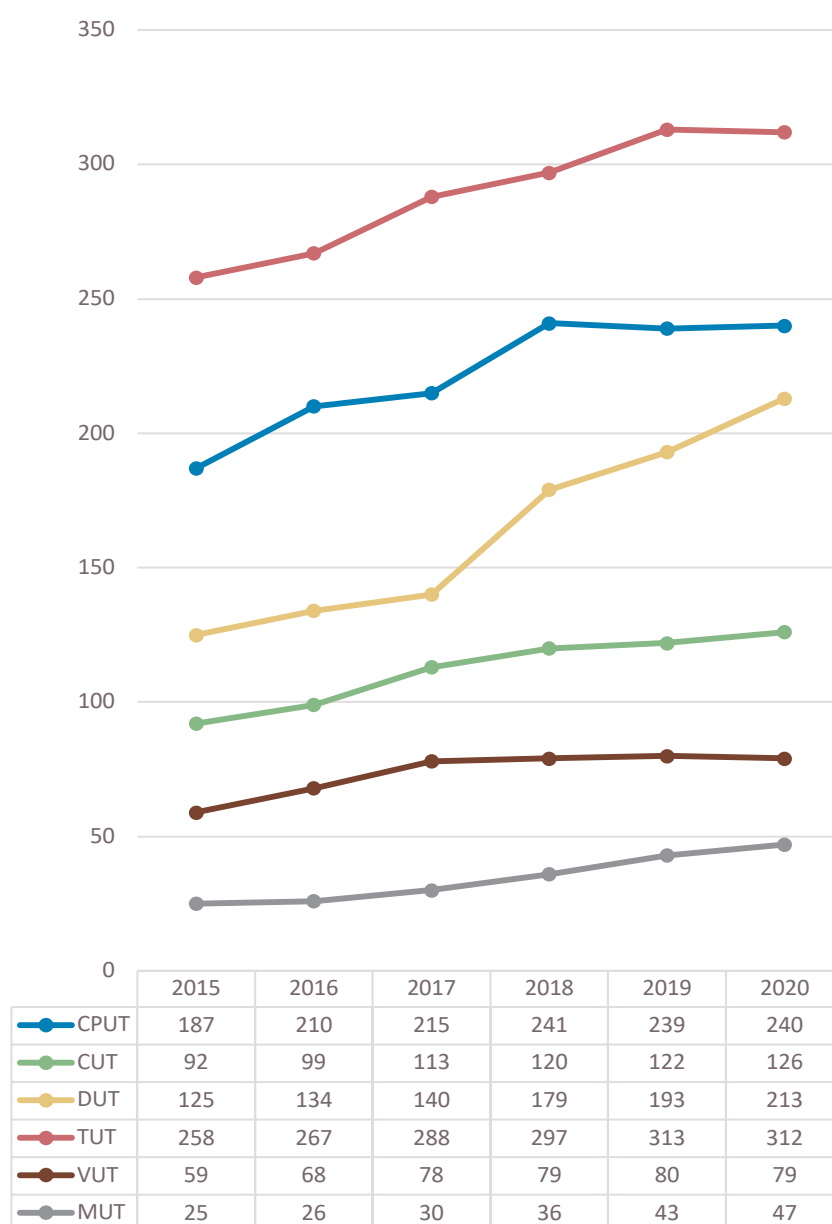


Figure 39: FTE staff with master degree in field of study academics per traditional university

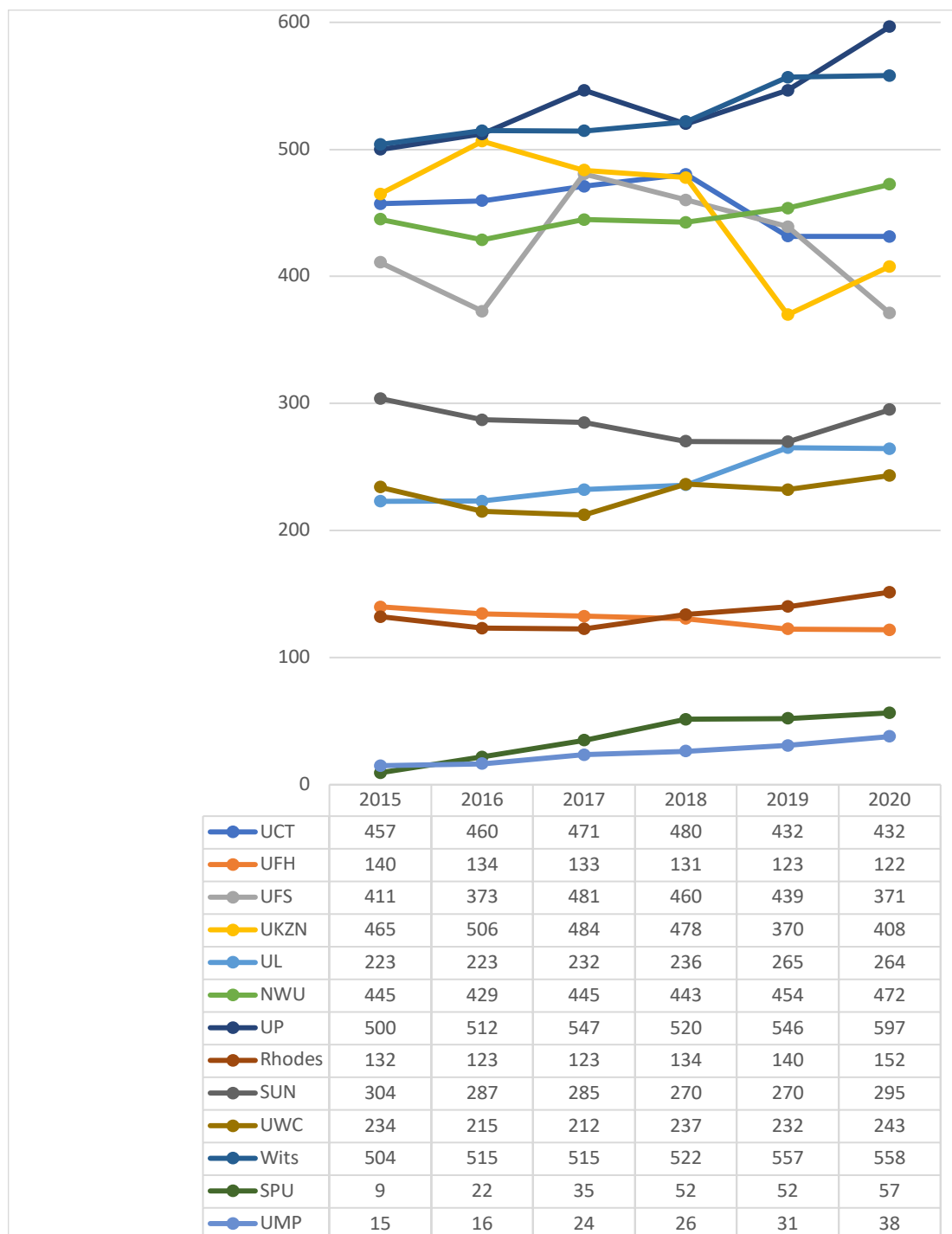


Figure 40: FTE staff with master degree in field of study academics per comprehensive university

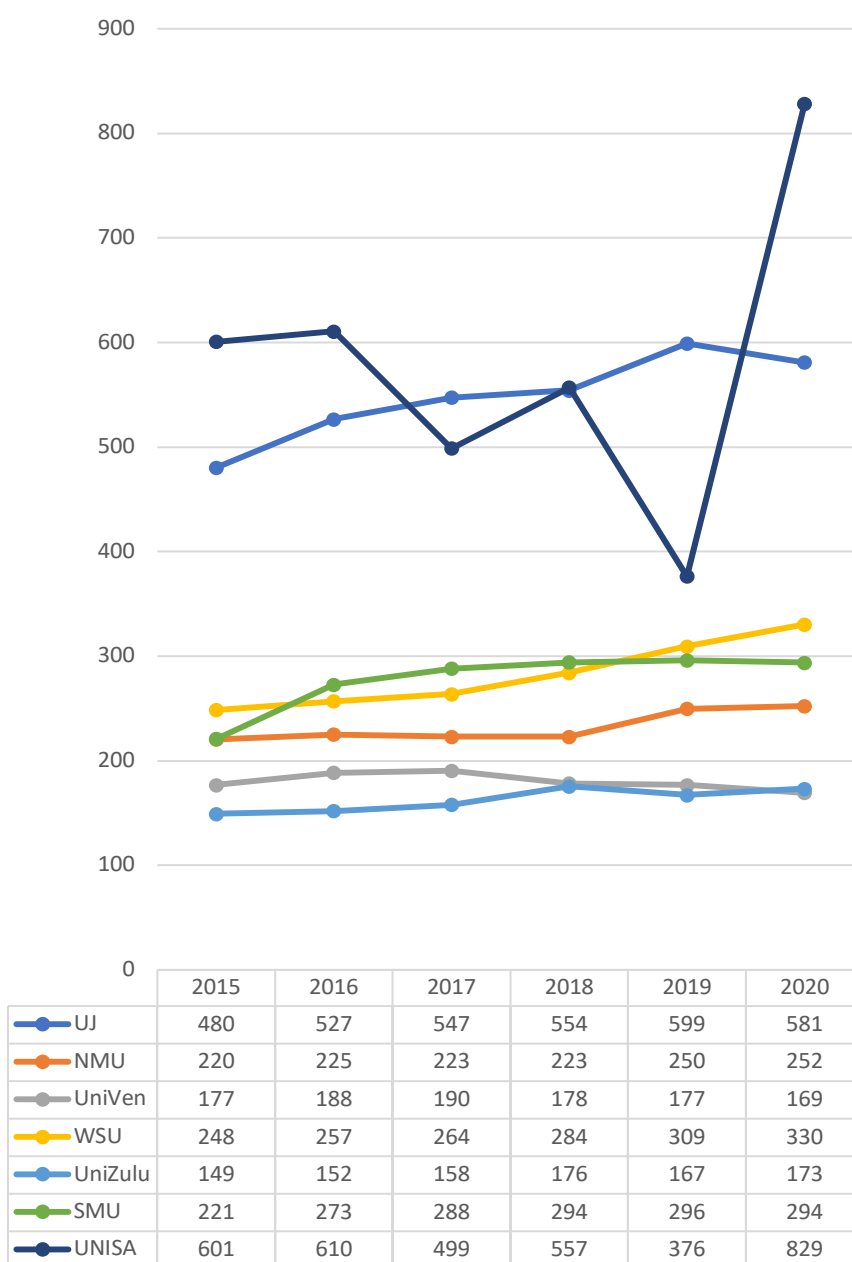


Figure 41: FTE staff with master degree in field of study academics per university of technology

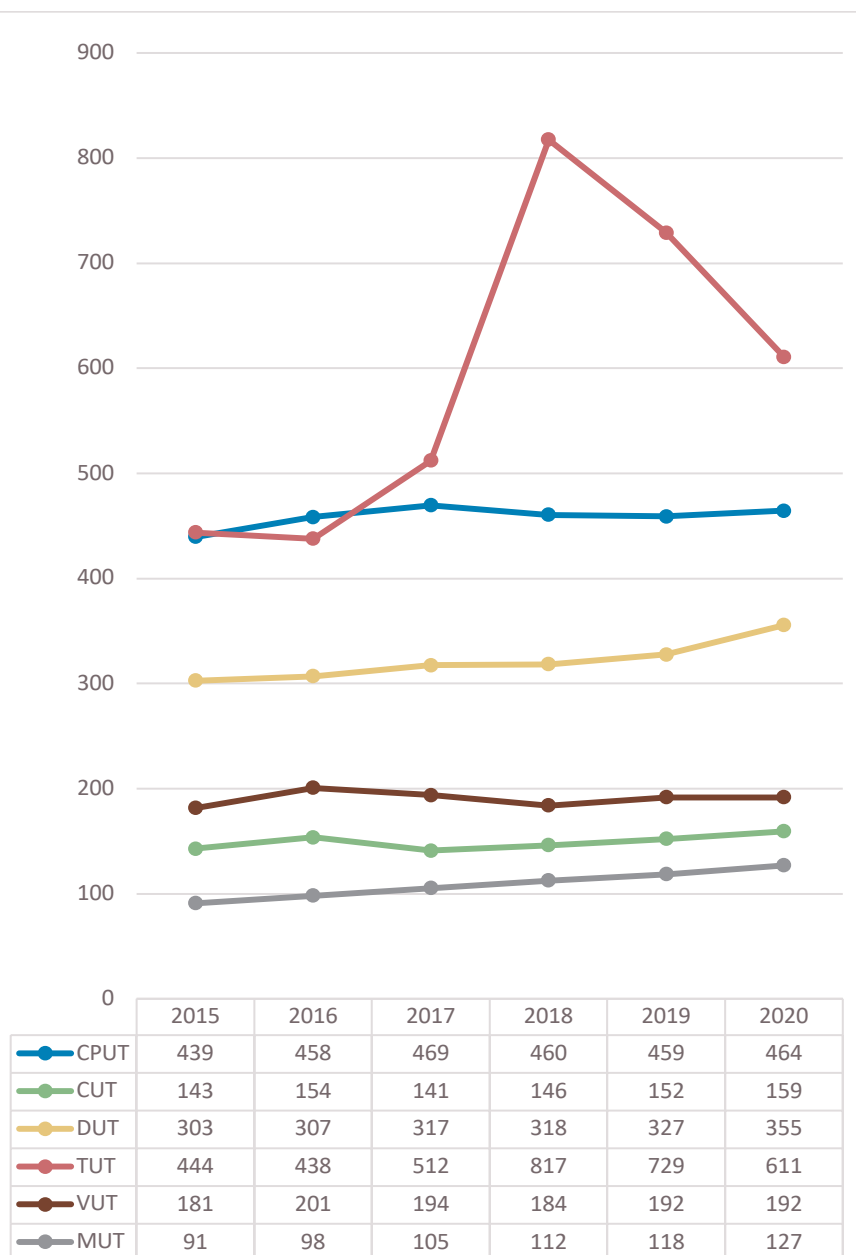


Figure 42: FTE staff with Doctoral in field of study academics per traditional university

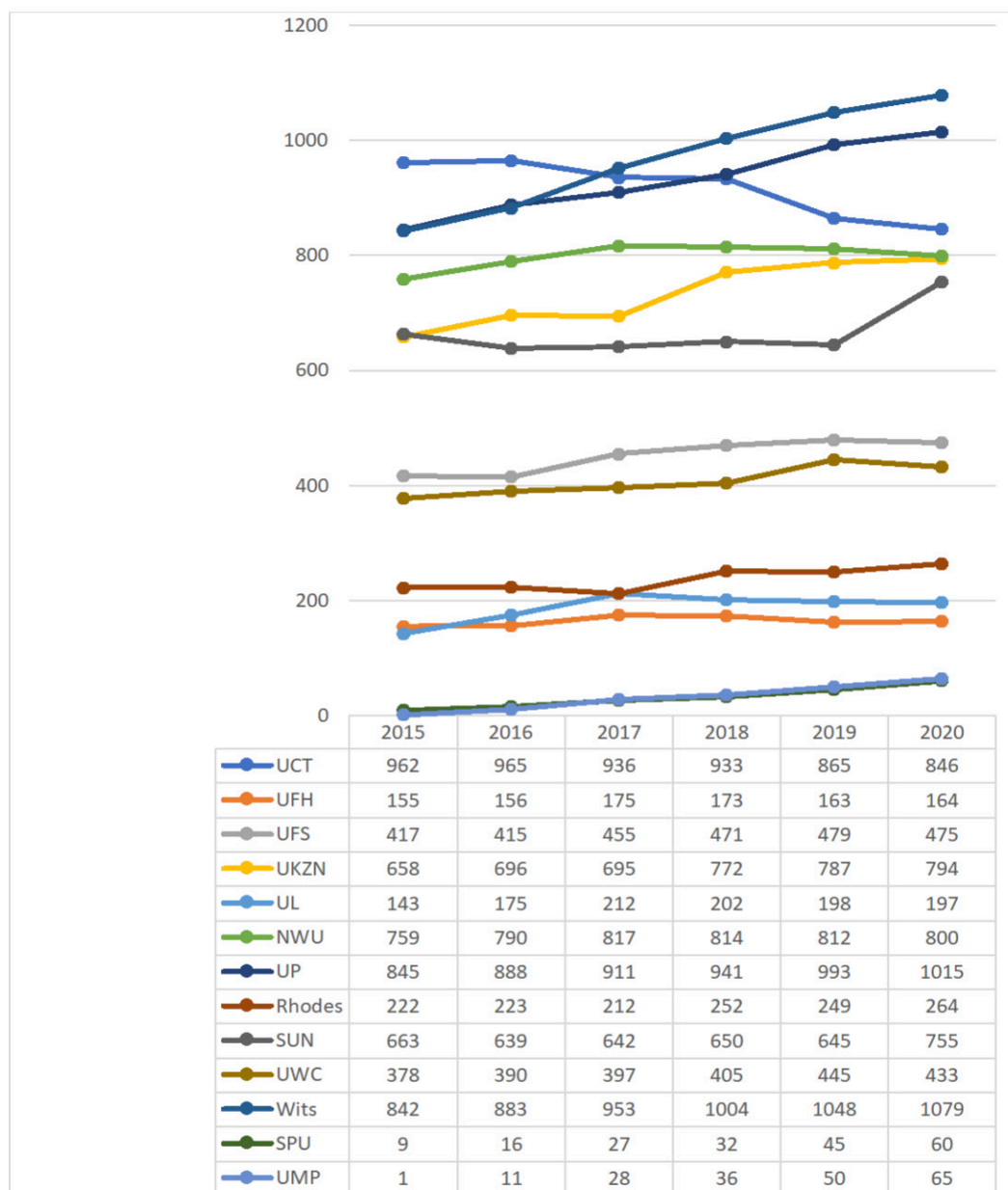


Figure 43: FTE staff with doctoral in field of study academics per comprehensive university

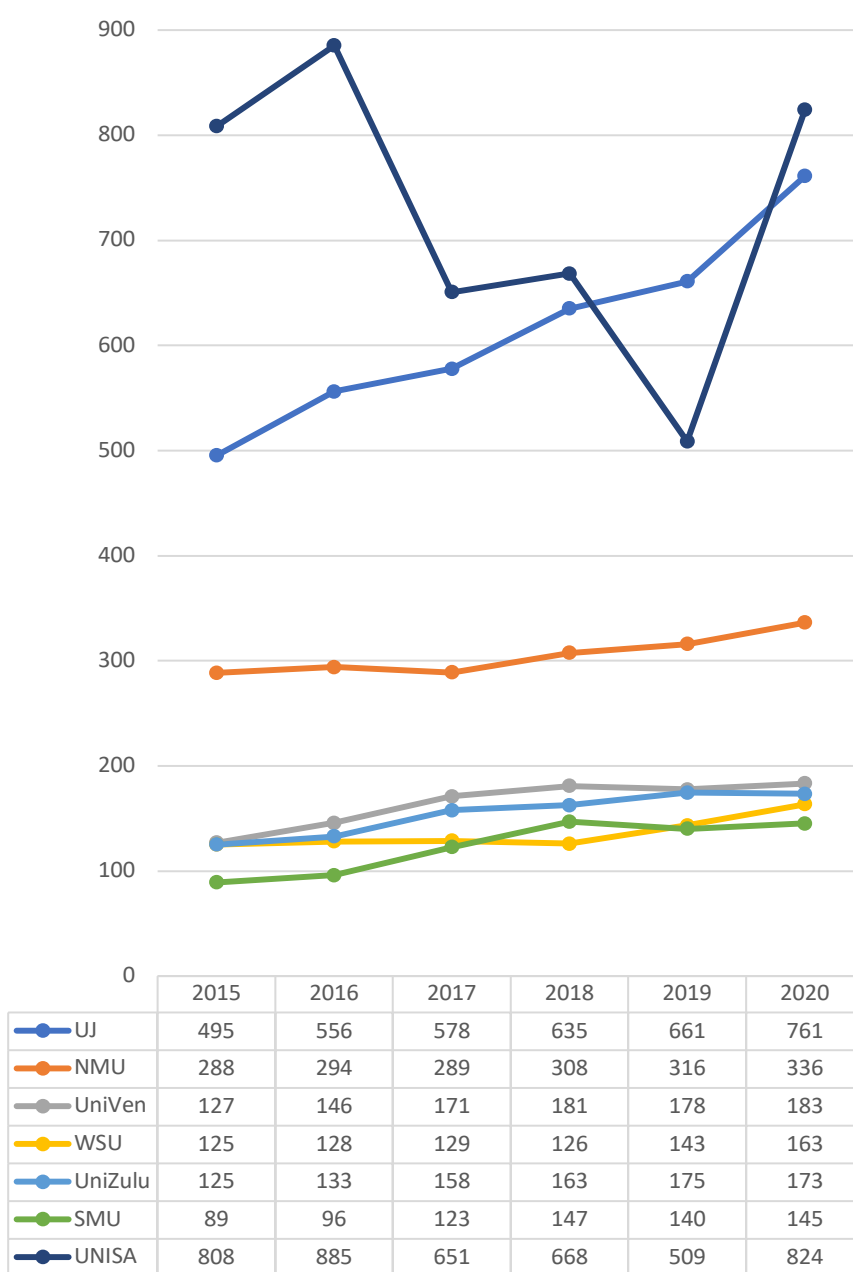
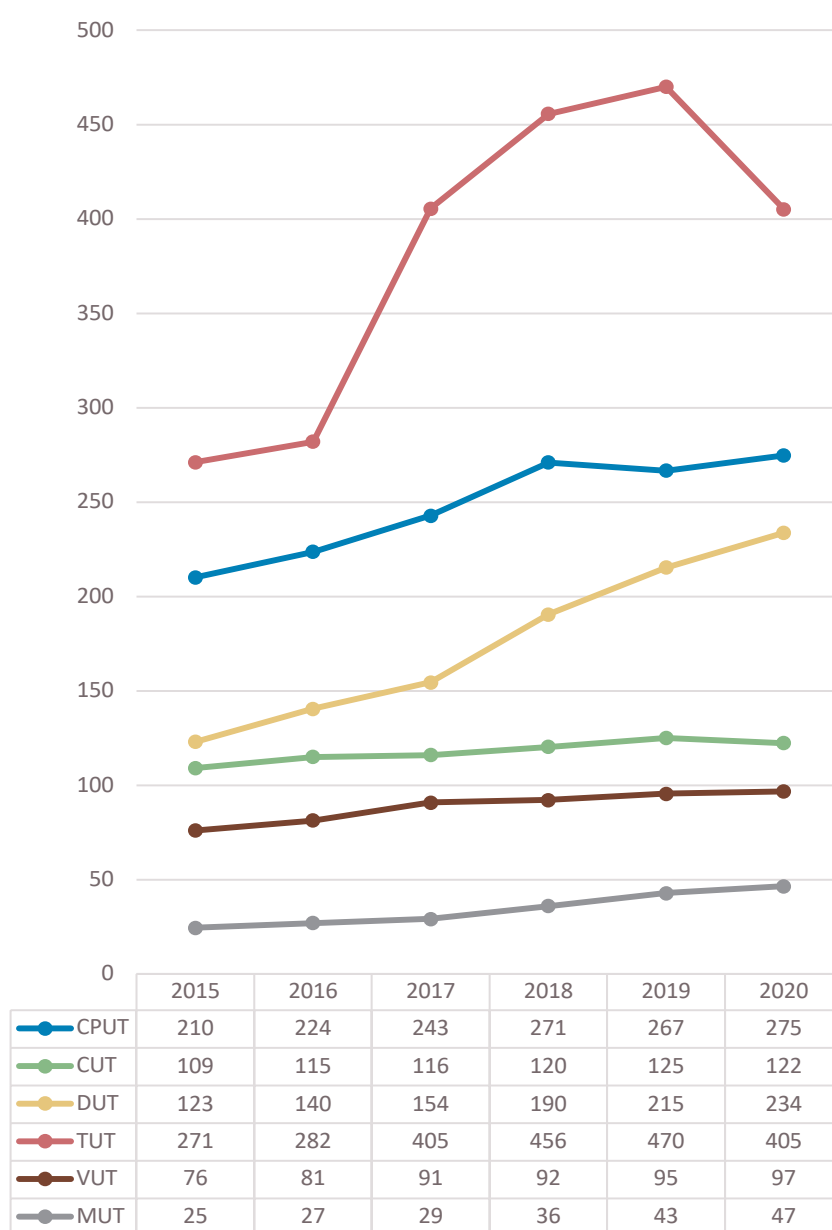


Figure 44: FTE staff with doctoral in field of study academics per university of technology



Master and doctoral students entrance and completion

Figure 45: Master degree enrolment per CESM

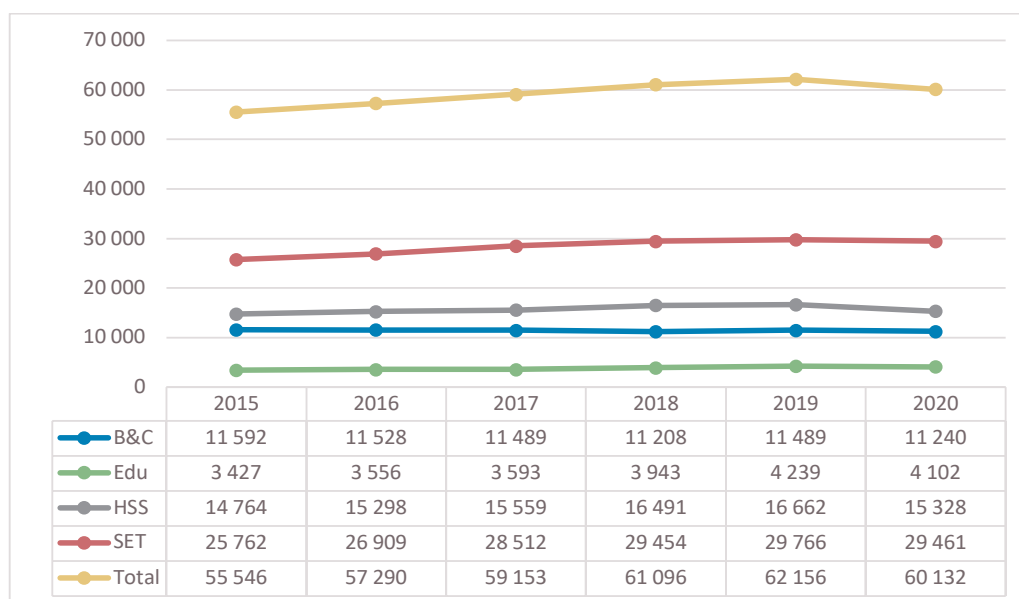


Figure 46: Doctoral enrolment per CESM

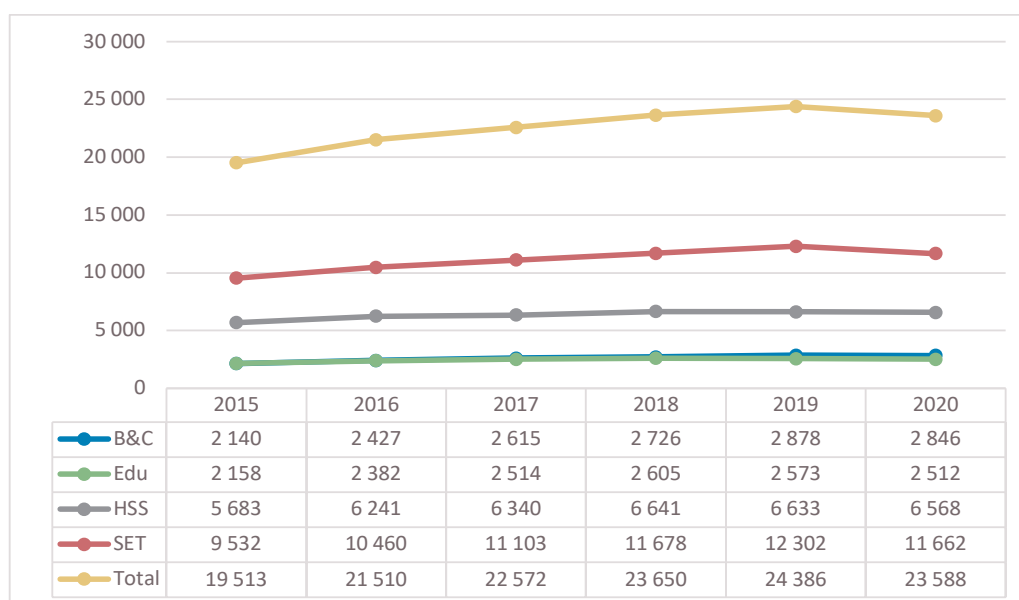


Figure 47: Master degree enrolment per funding group

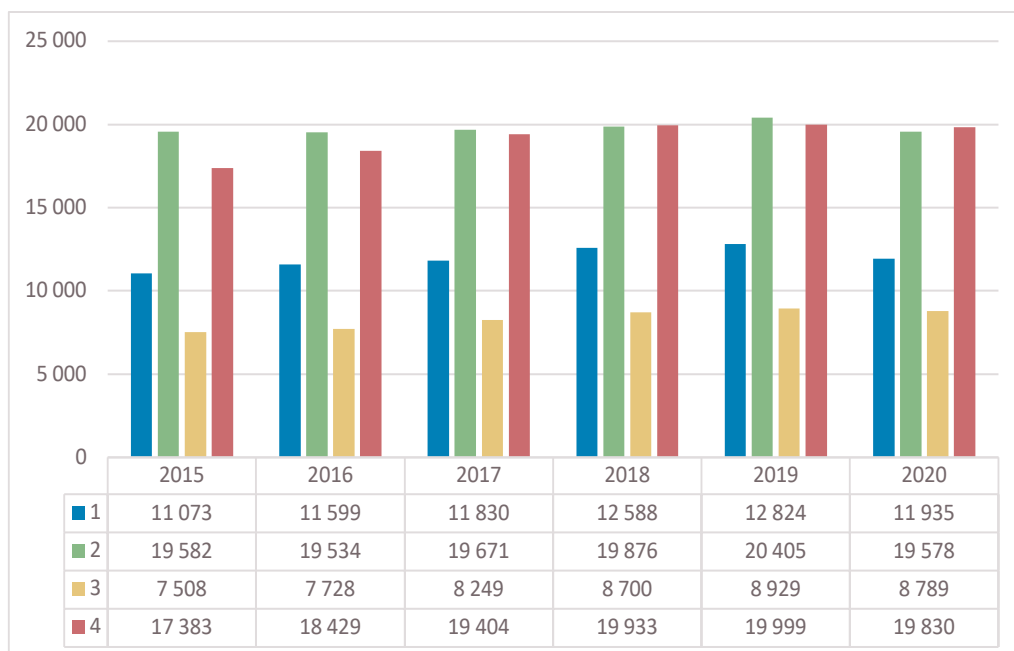


Figure 48: Doctoral enrolment per funding group

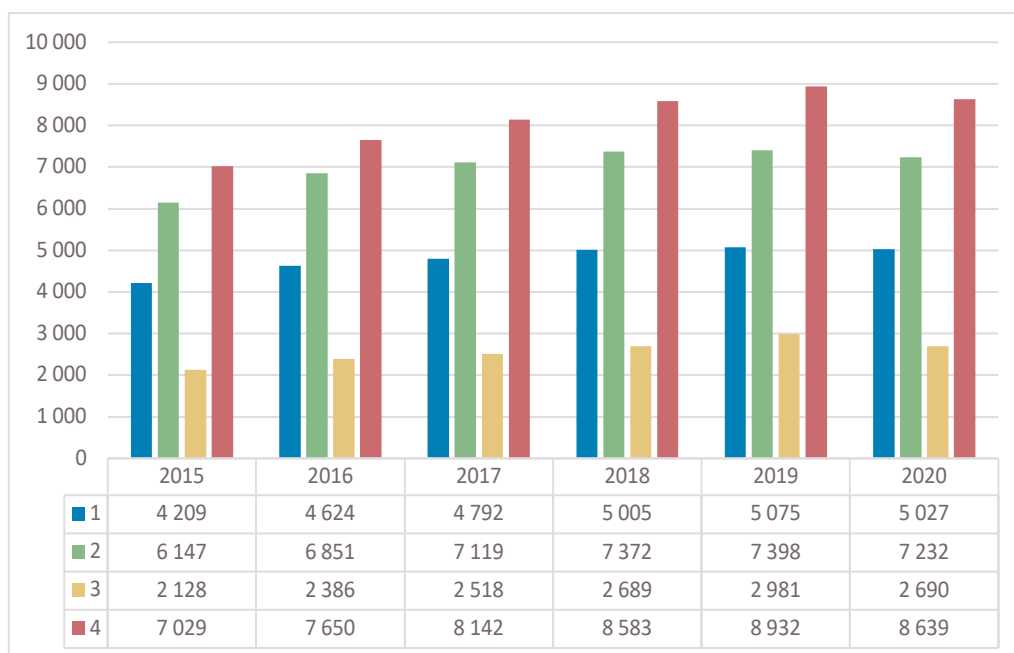


Figure 49: Master graduated students per CESM

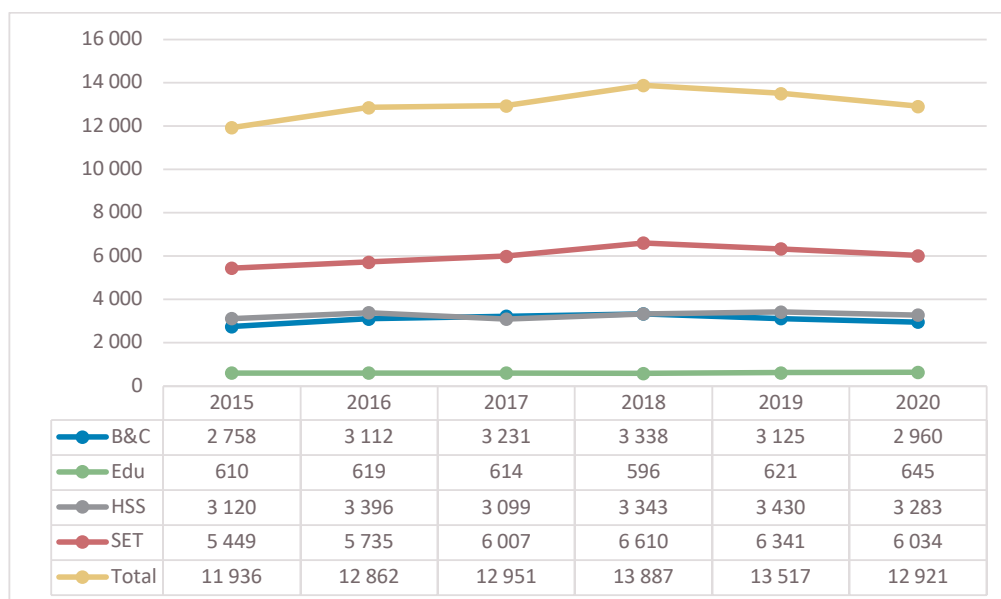


Figure 50: Doctoral graduated per CESM

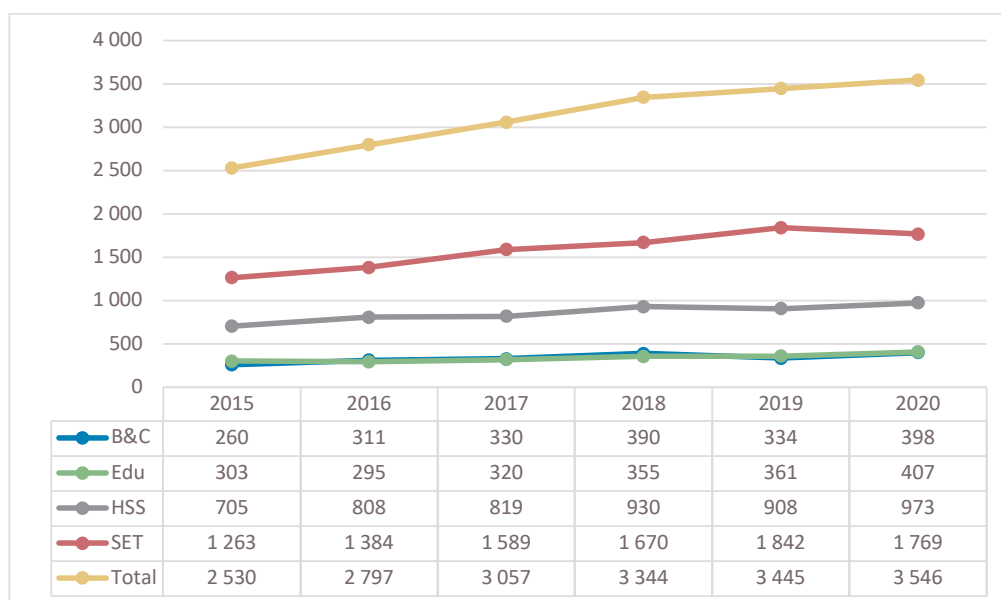


Figure 51: Master degree students enrolment per traditional university

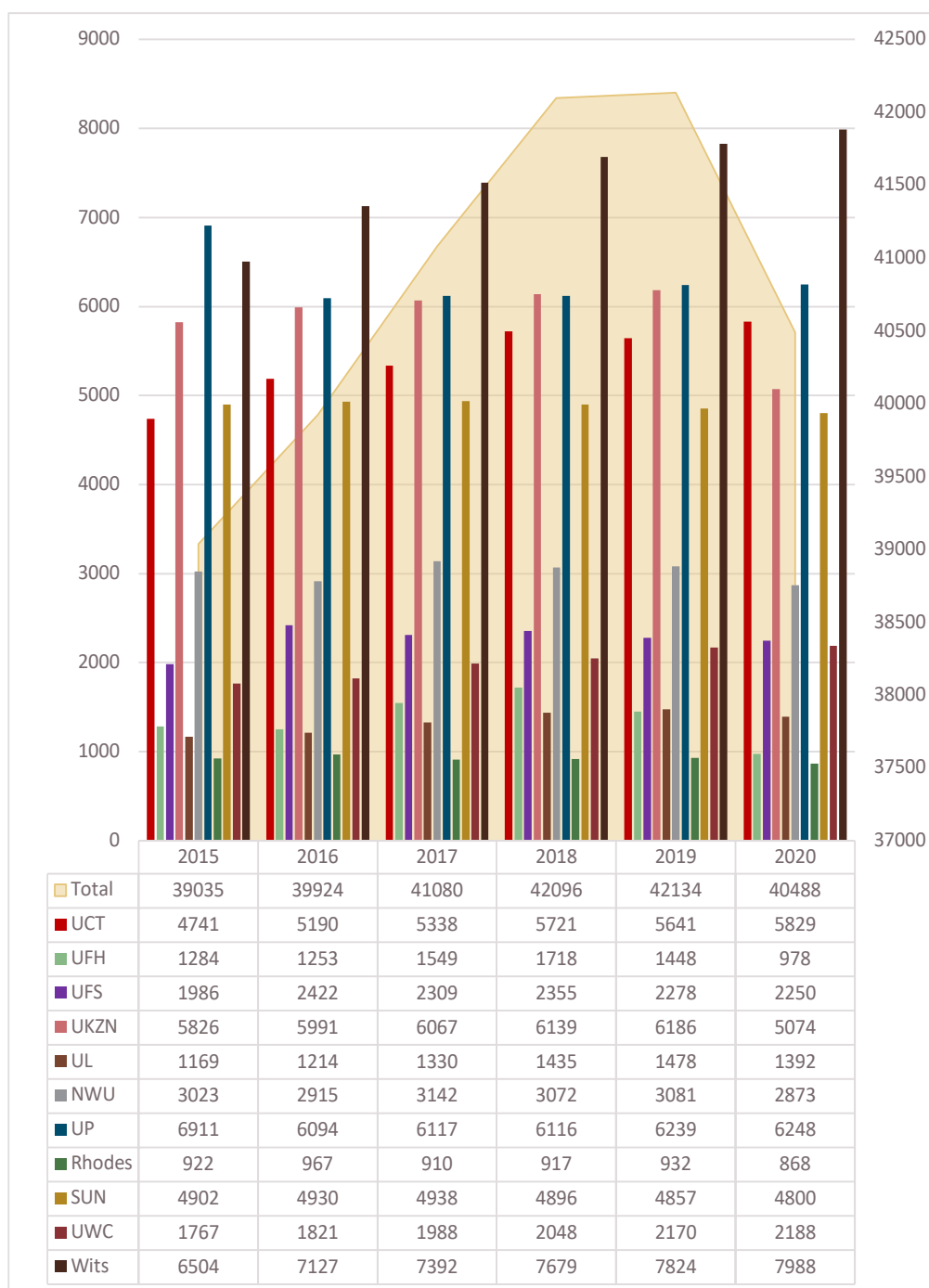


Figure 52: Master degree students enrolment per comprehensive university

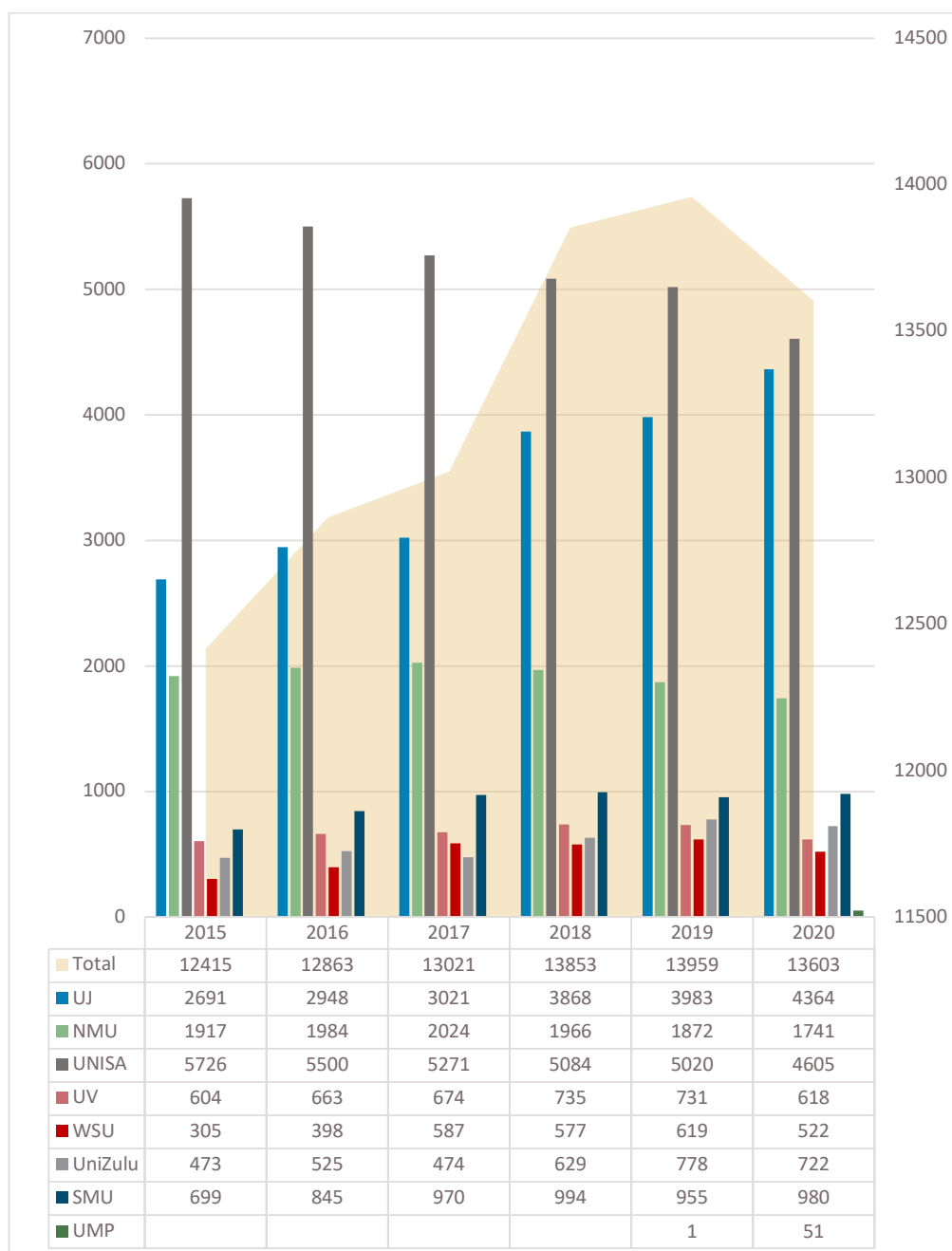


Figure 53: Master degree students enrolment per university of technology

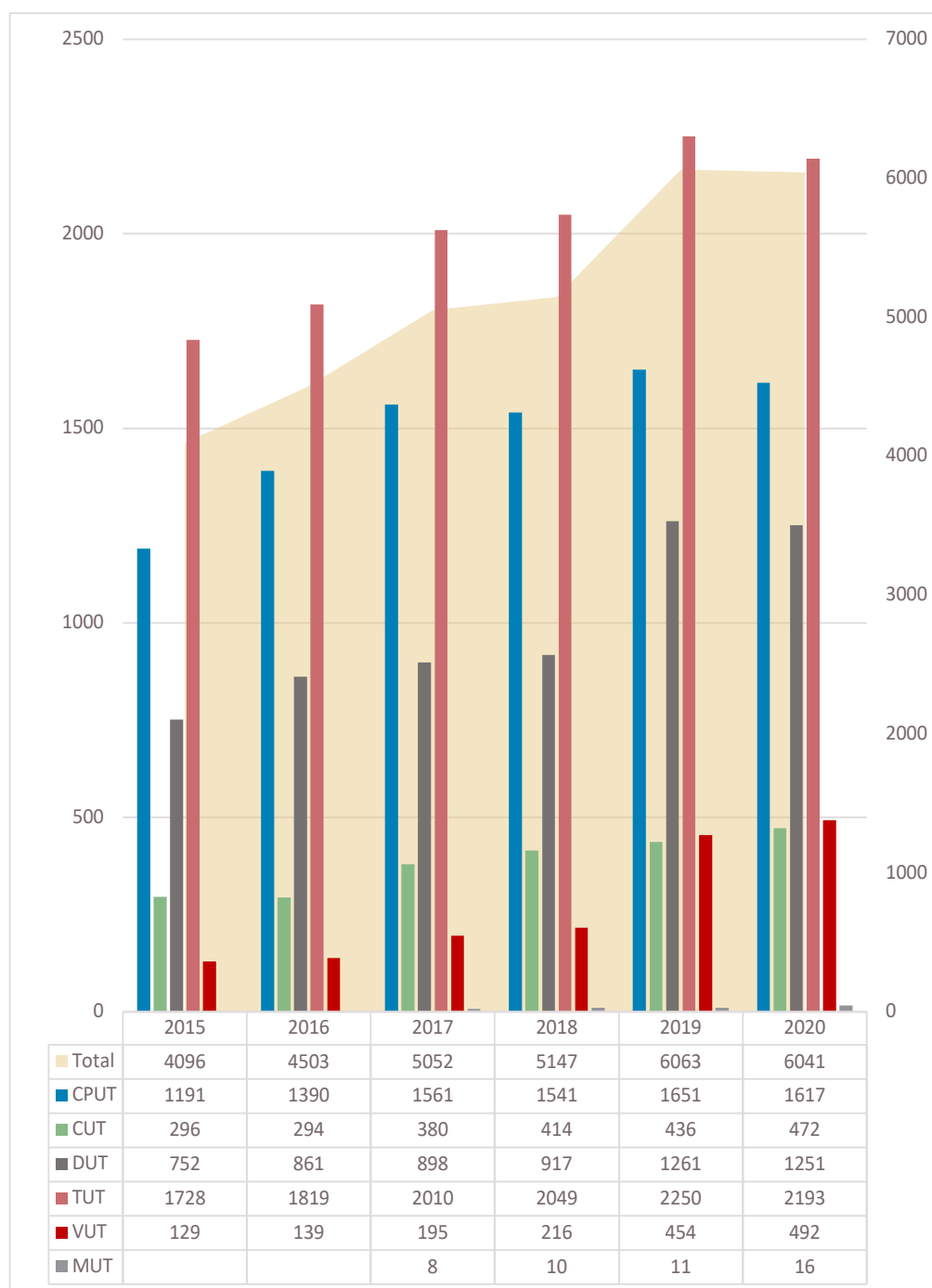


Figure 54: Doctoral students enrolled per traditional university

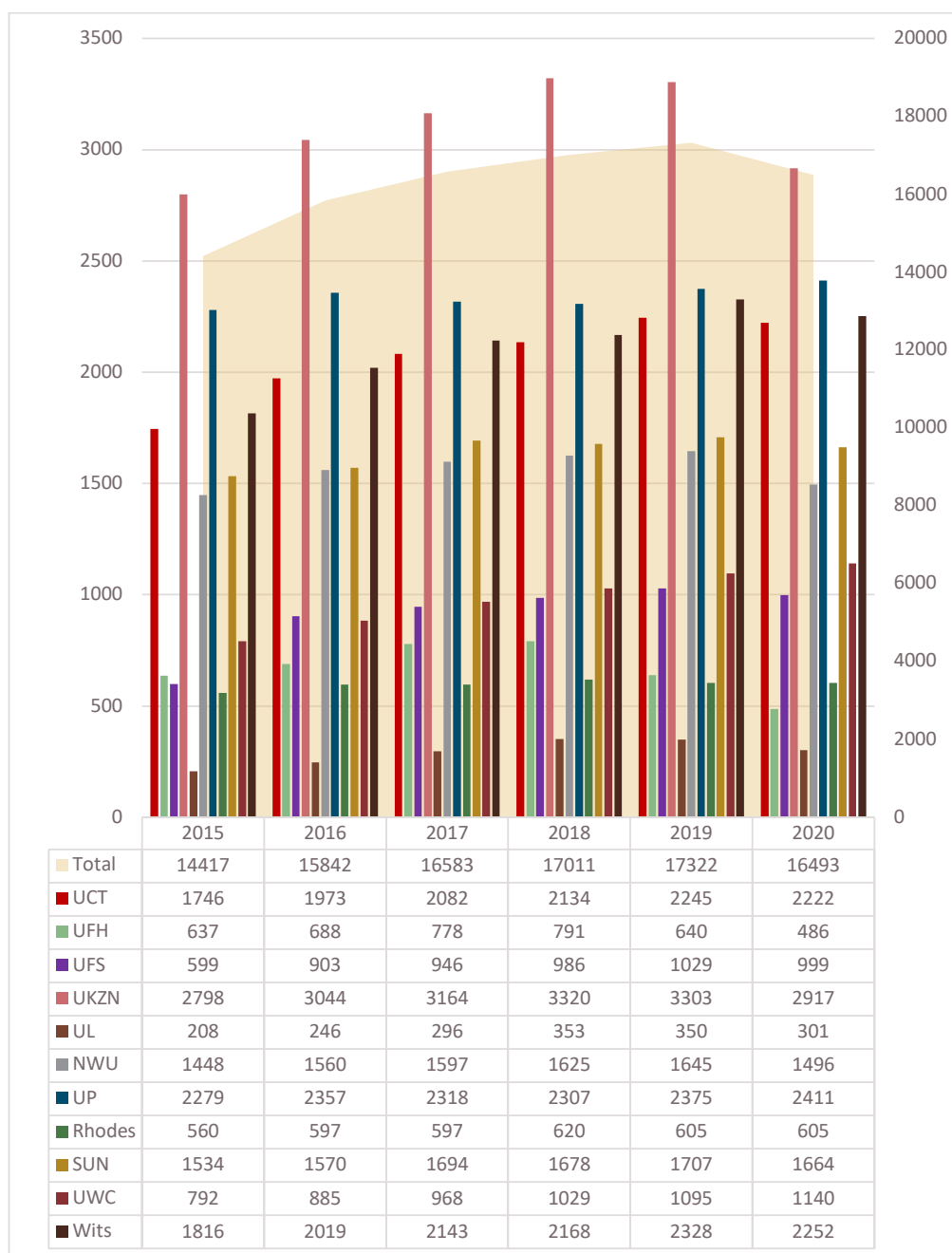


Figure 55: Doctoral students enrolled per comprehensive university

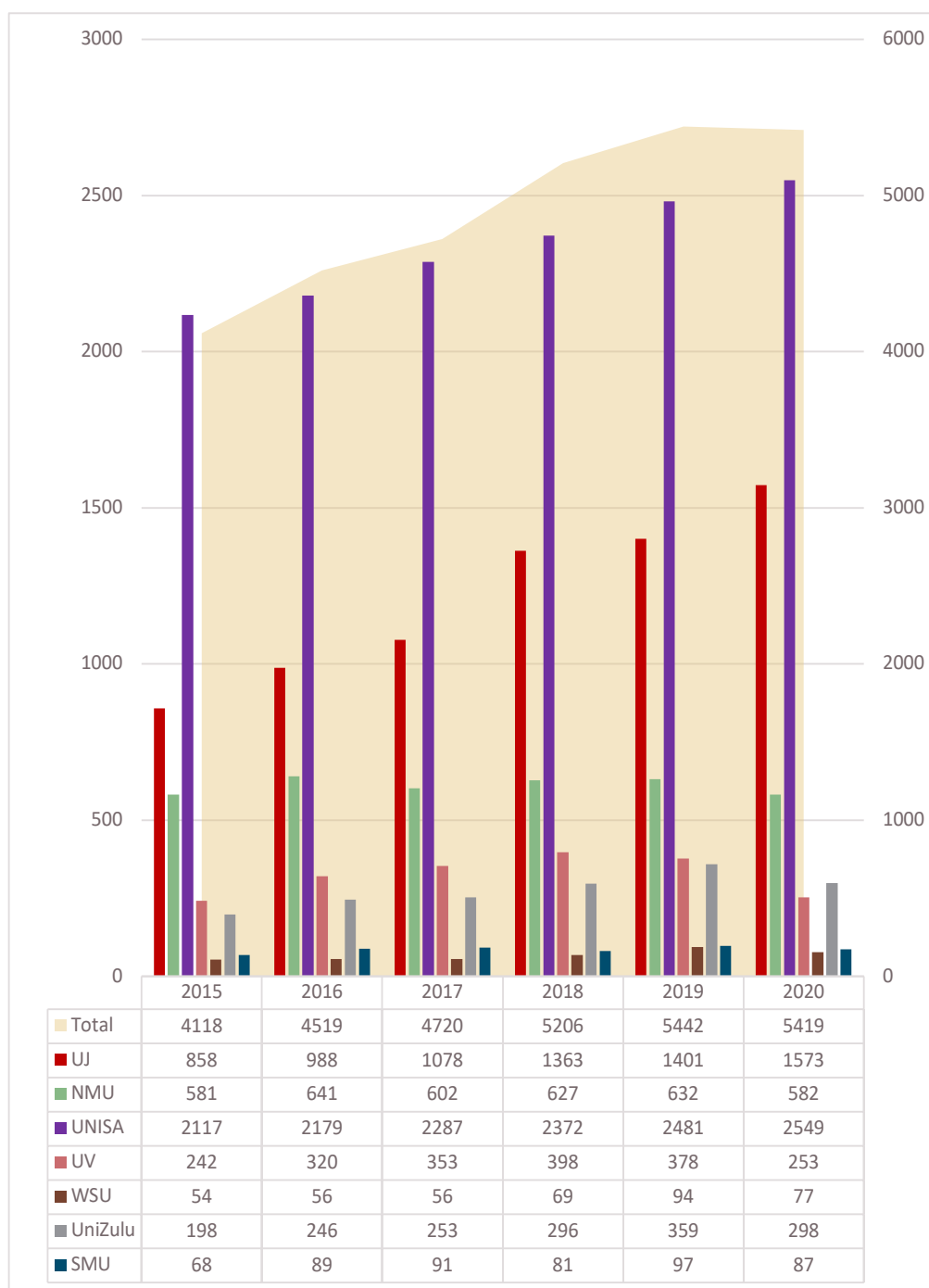


Figure 56: Doctoral students enrolled per university of technology

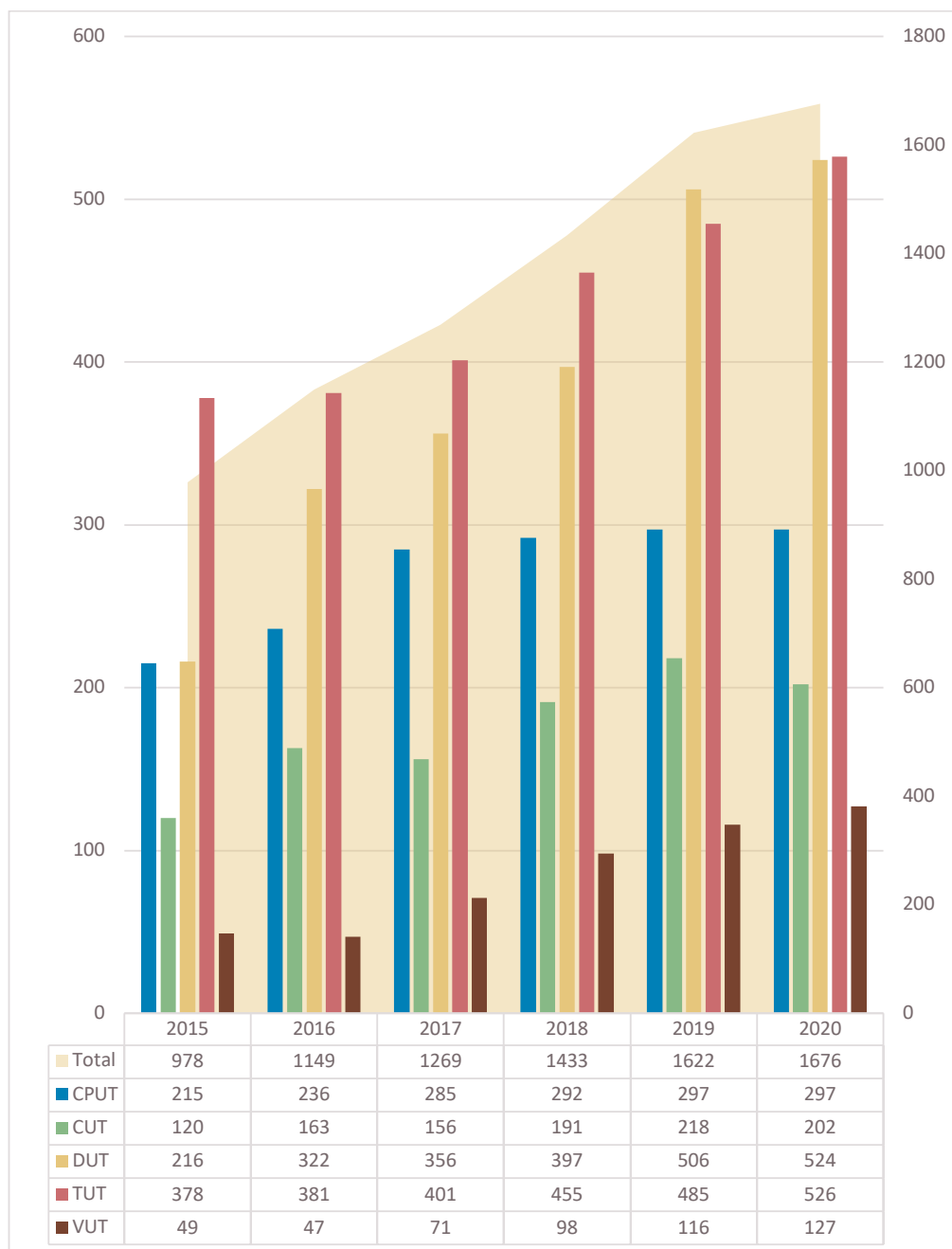


Figure 57: Master degree graduated students per traditional university

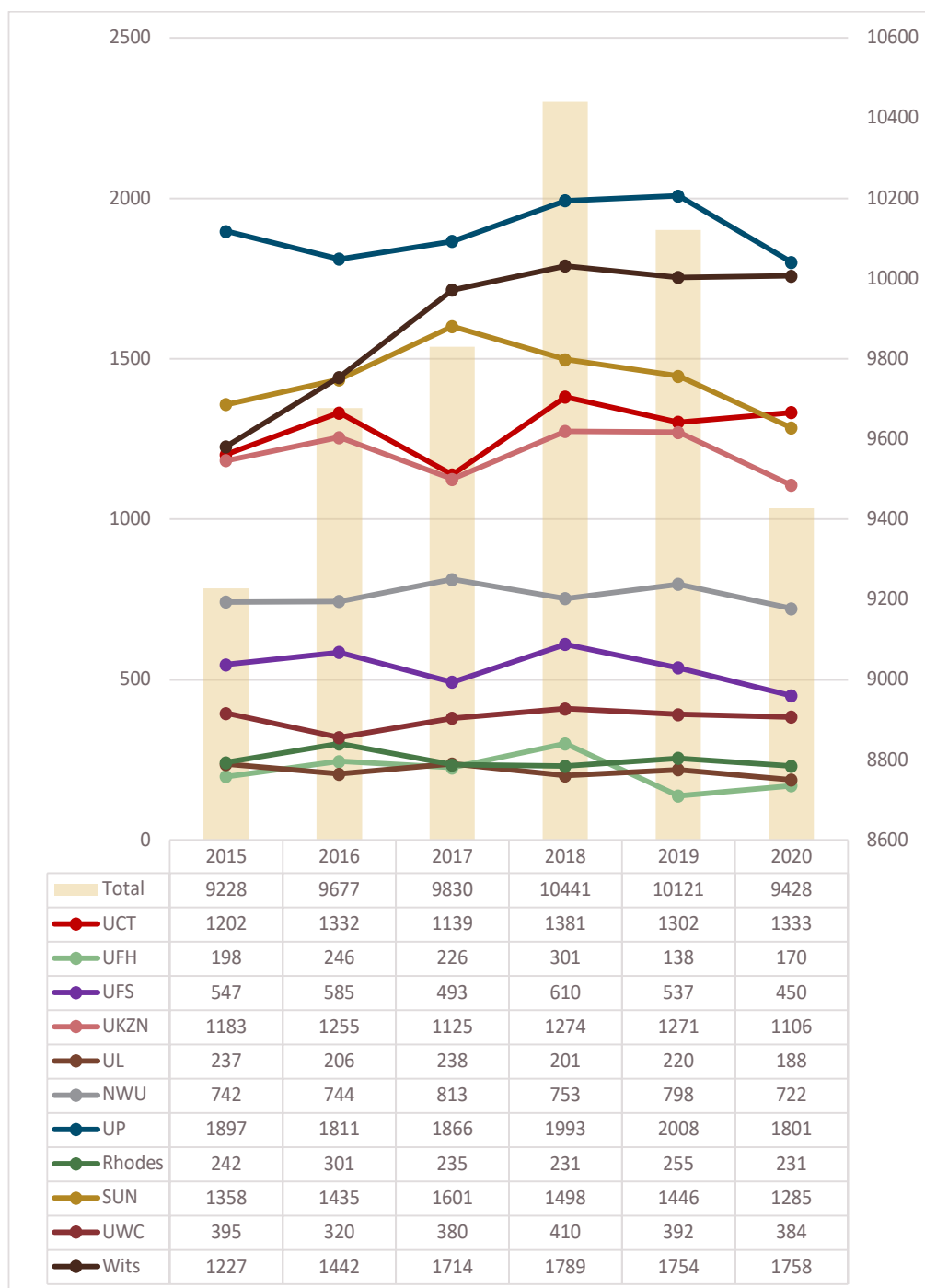


Figure 58: Master degree graduated students per comprehensive university

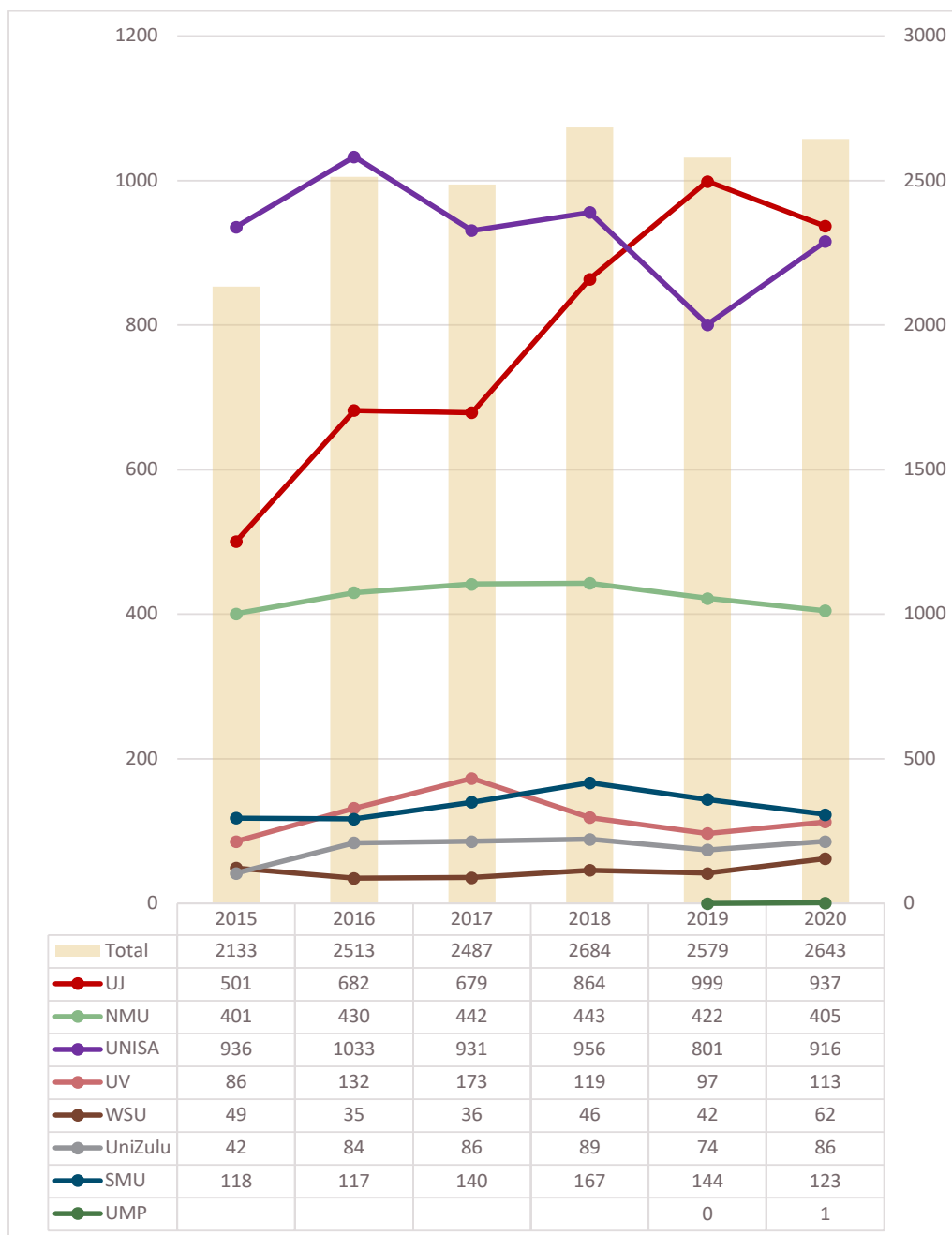


Figure 59: Master degree graduated students per university of technology

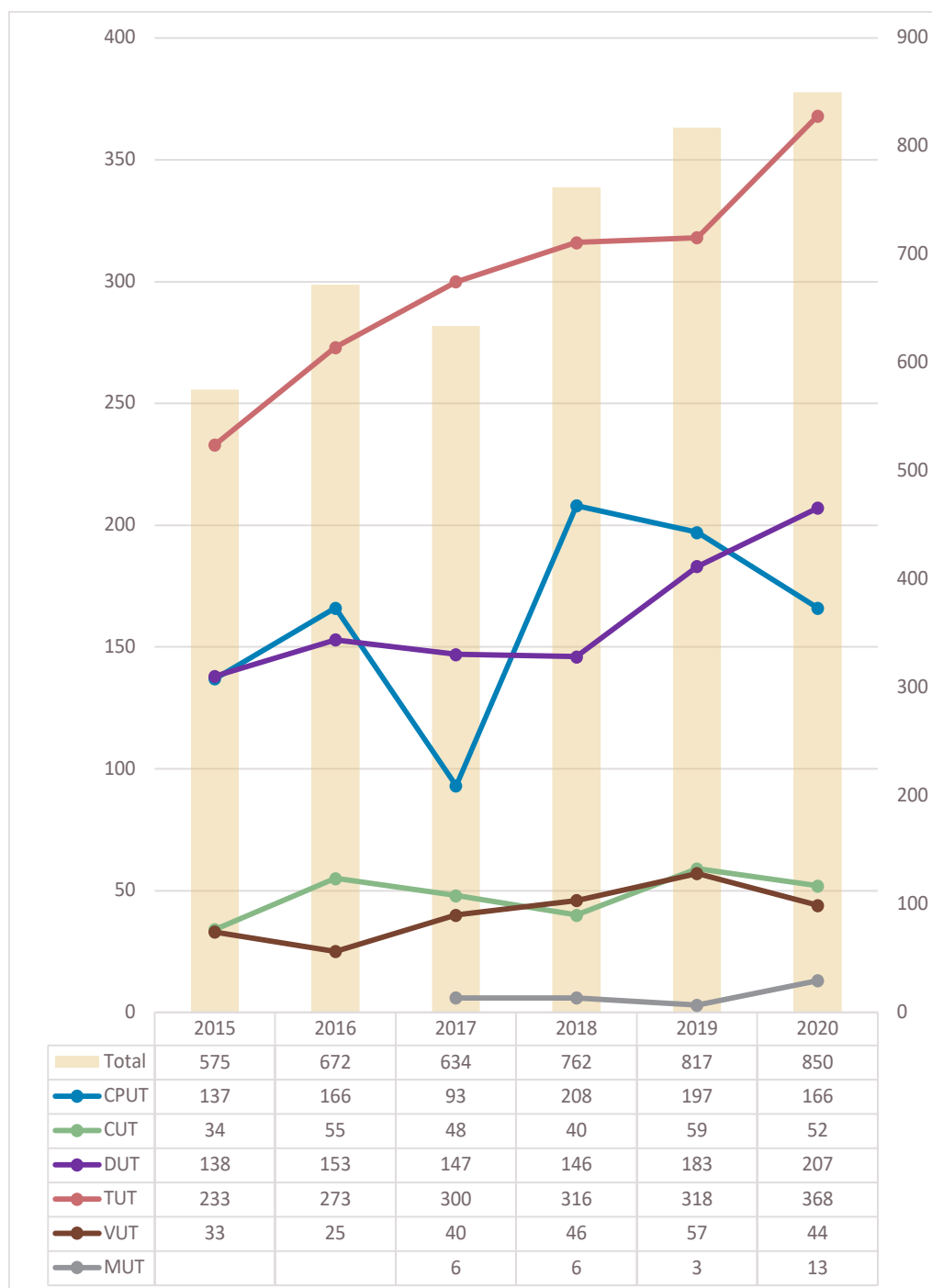


Figure 60: Doctoral graduated students per traditional university

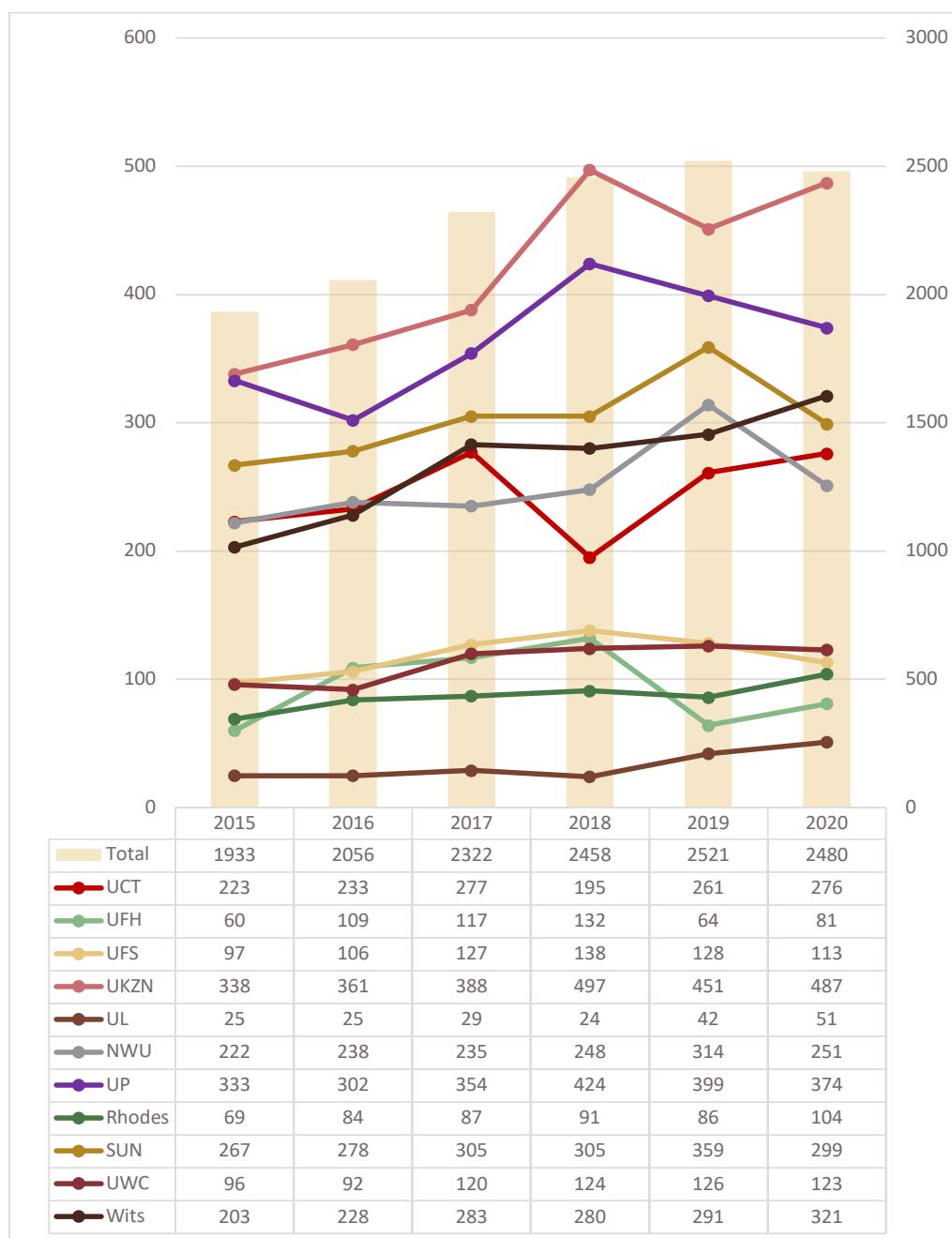


Figure 61: Doctoral graduated students per comprehensive university

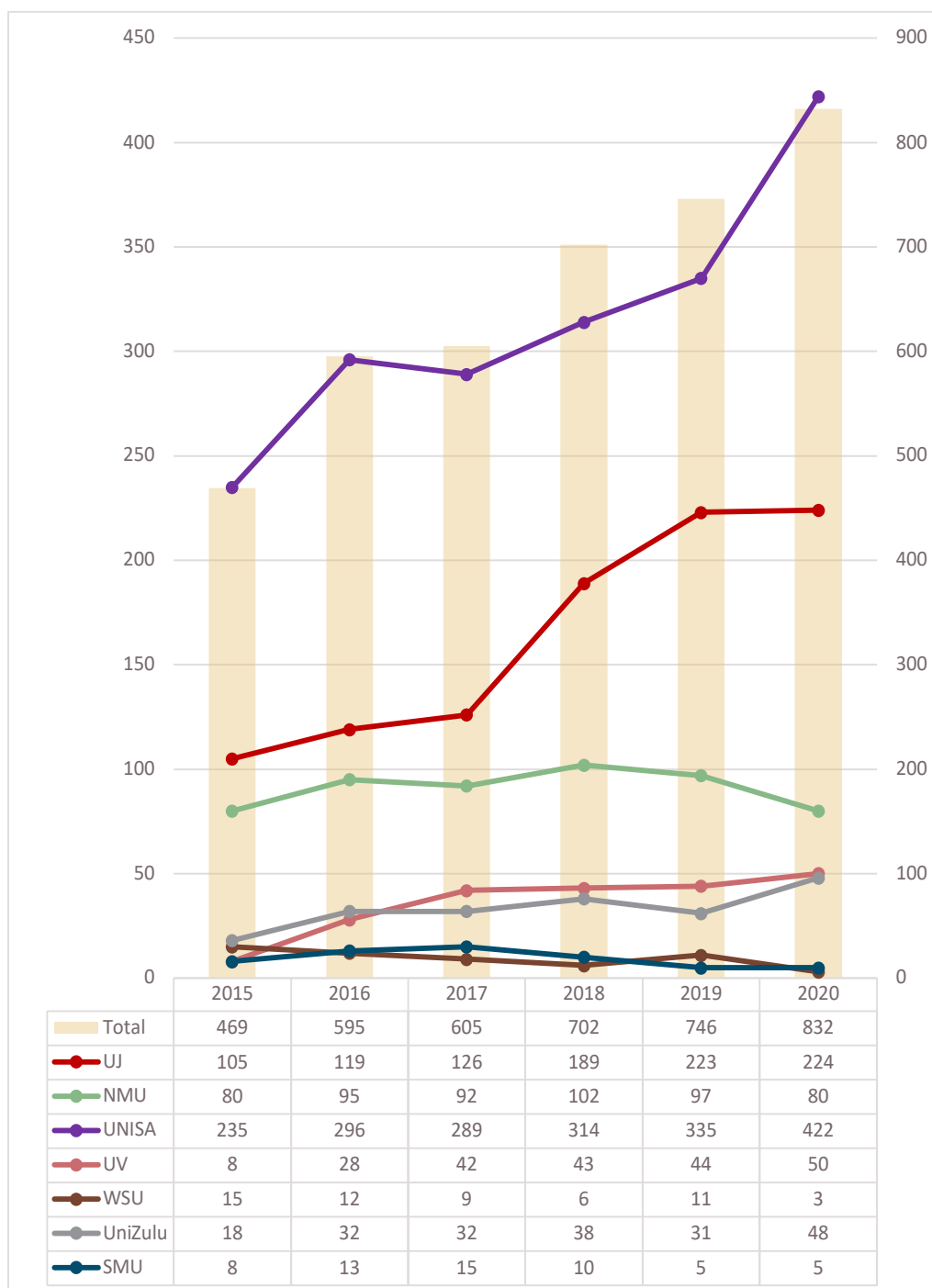
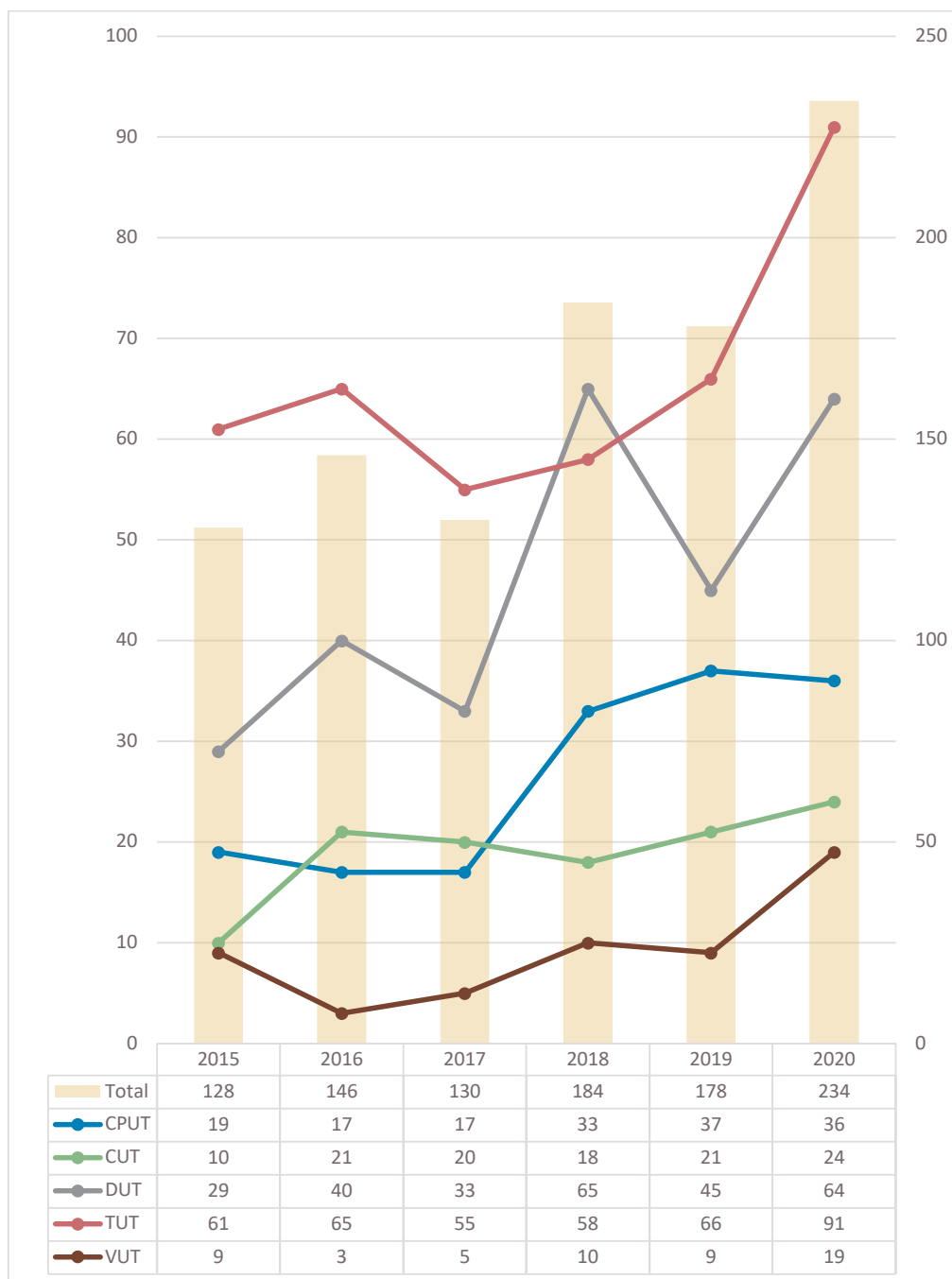


Figure 62: Doctoral graduated students per university of technology



Research students cohort analysis

Master Cohort Analysis

Figure 63: Master cohort analysis: overall

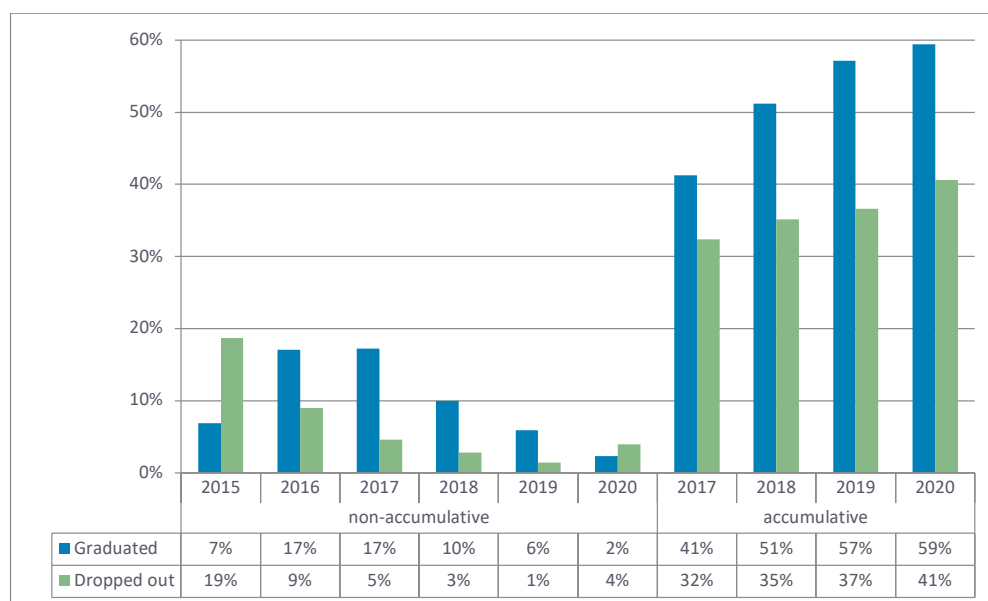


Figure 64: Master cohort analysis in science

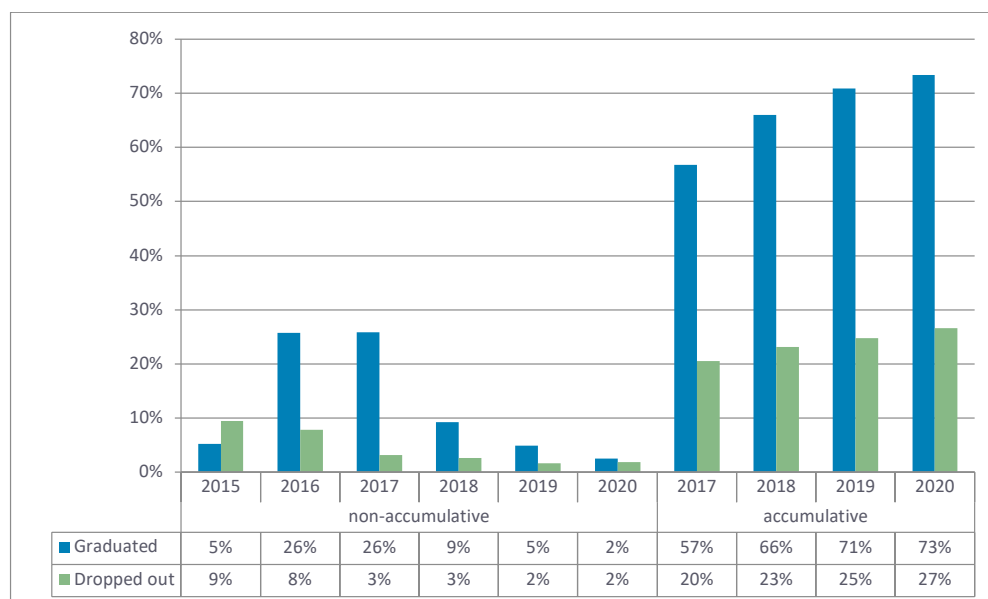


Figure 65: Master cohort analysis in engineering

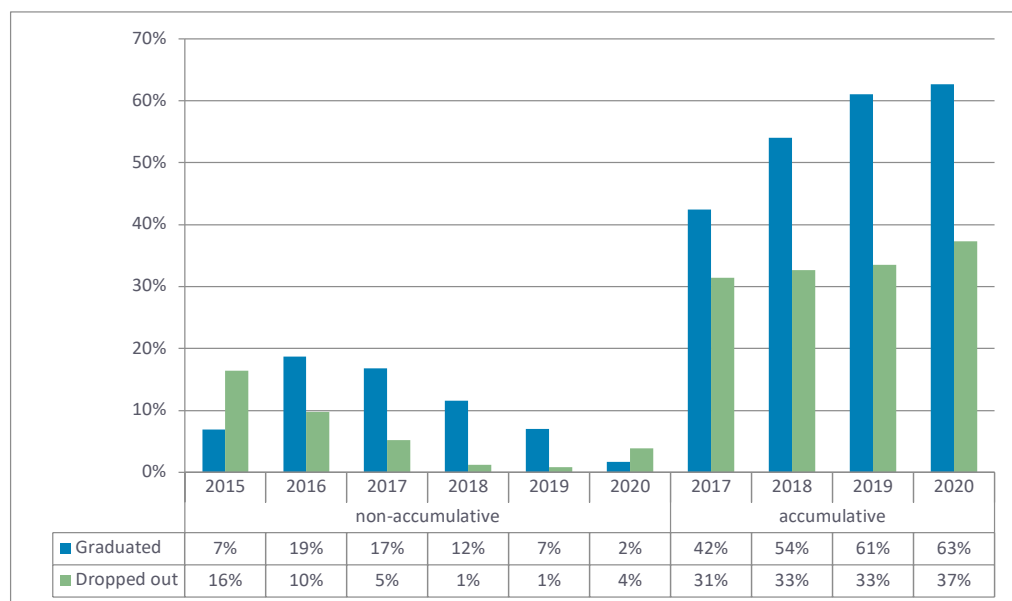


Figure 66: Master cohort analysis in Business Management Sciences

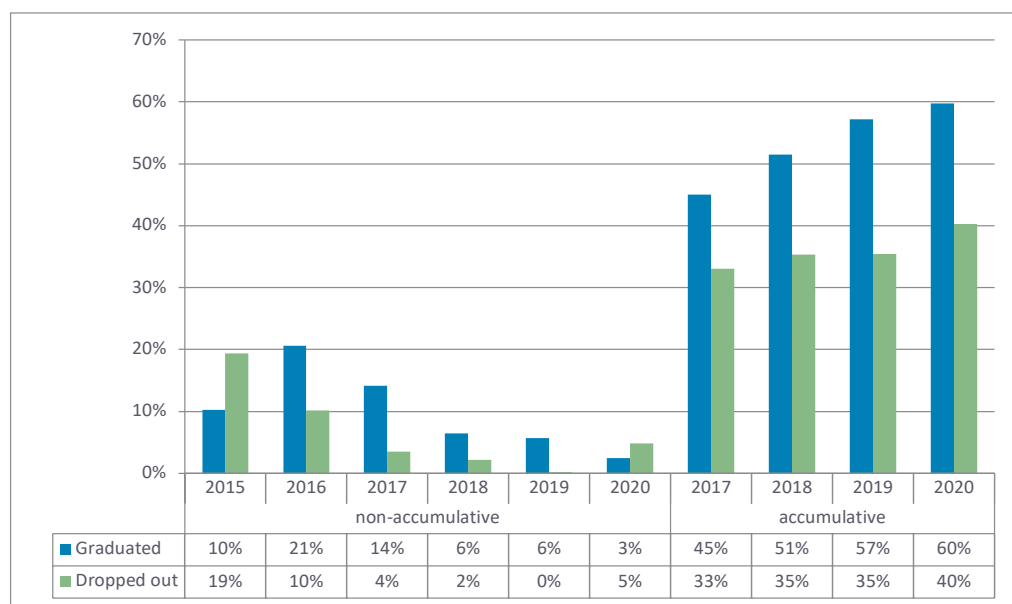


Figure 67: Master cohort analysis in Health

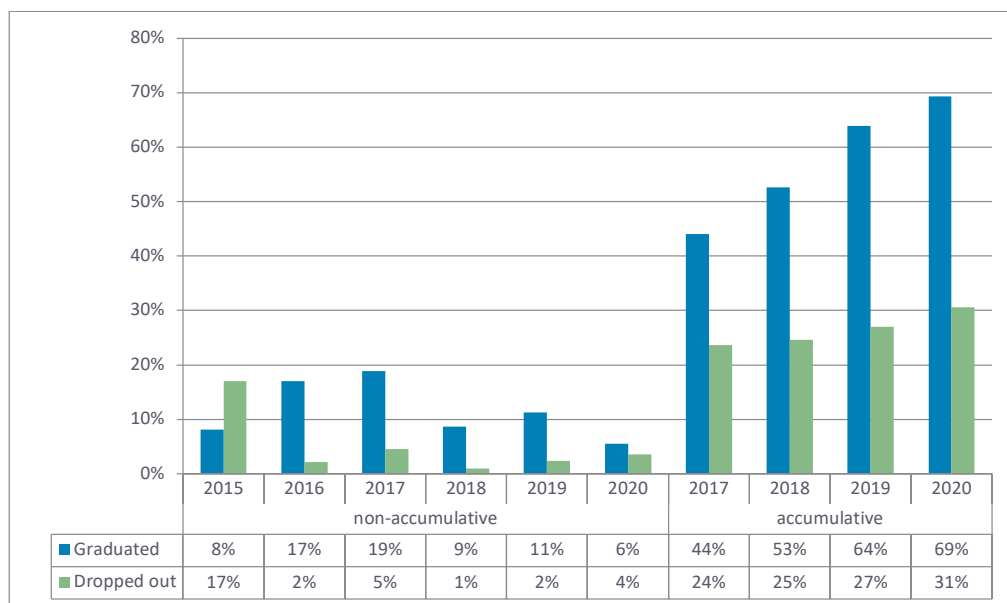


Figure 68: Master cohort analysis in Education

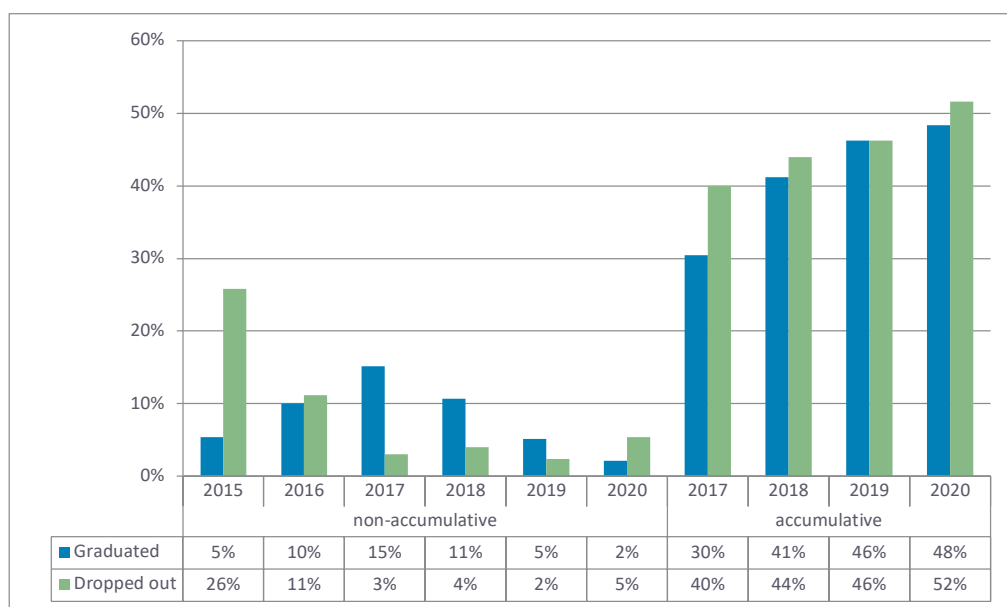


Figure 69: Master cohort analysis in Agriculture

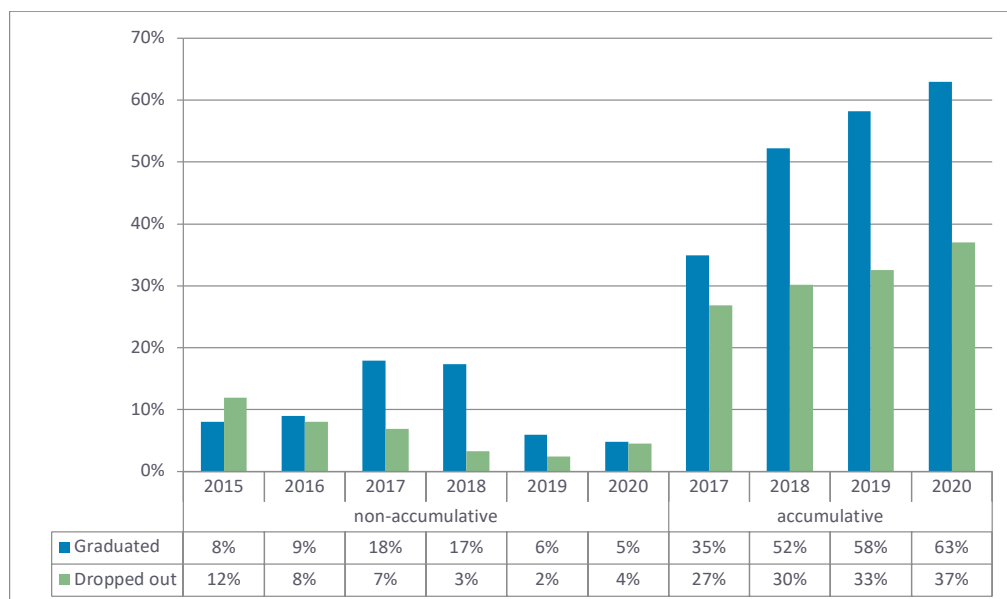


Figure 70: Percentage of the 2015 cohort doing research Master degree that graduated in 5 years (2019)

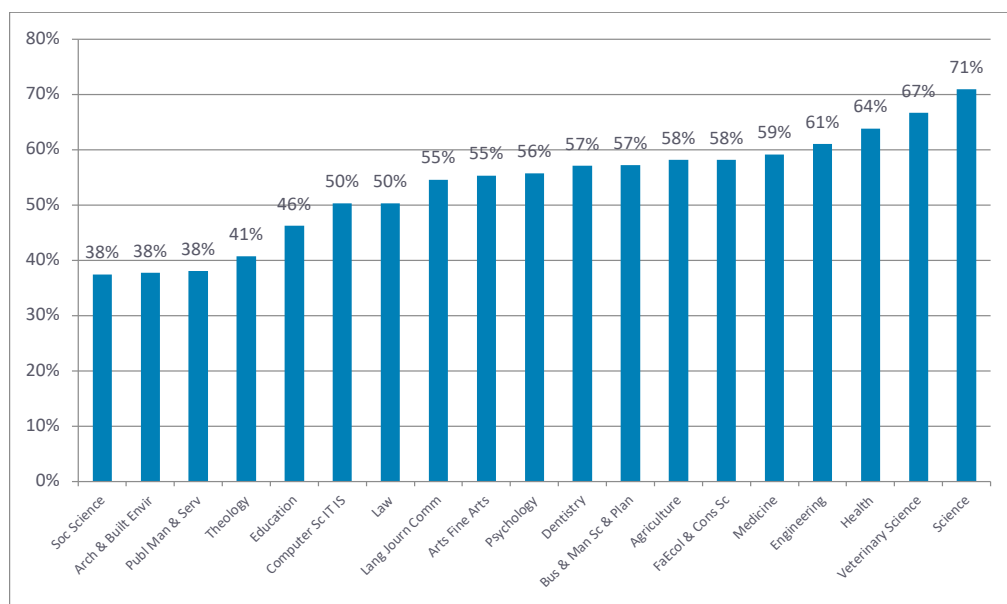


Figure 71: Headcount of the 2015 cohort doing research Master degree that graduated in 5 years (2019)

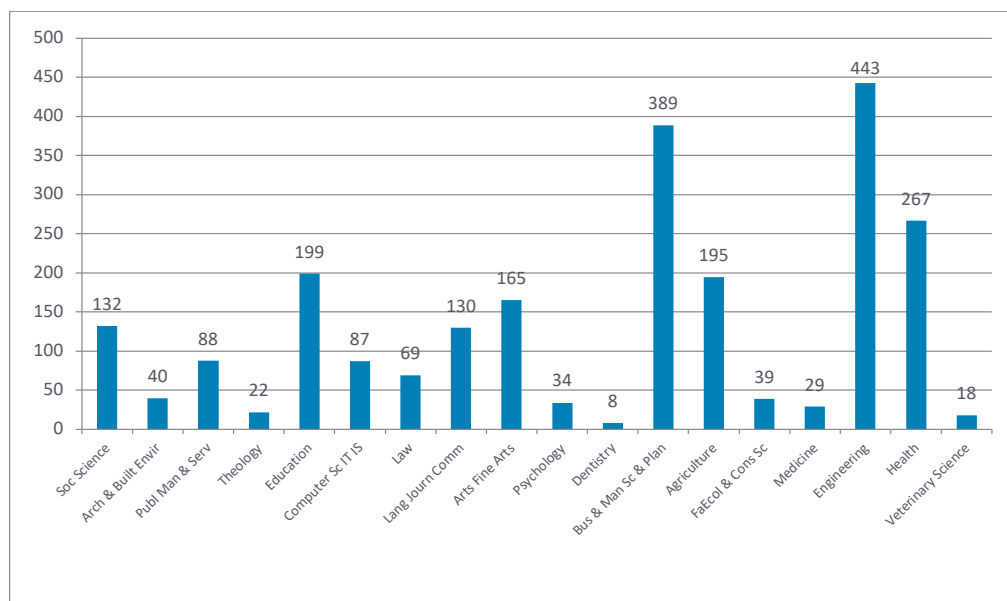


Figure 72: Master degree throughput by race, non-accumulative

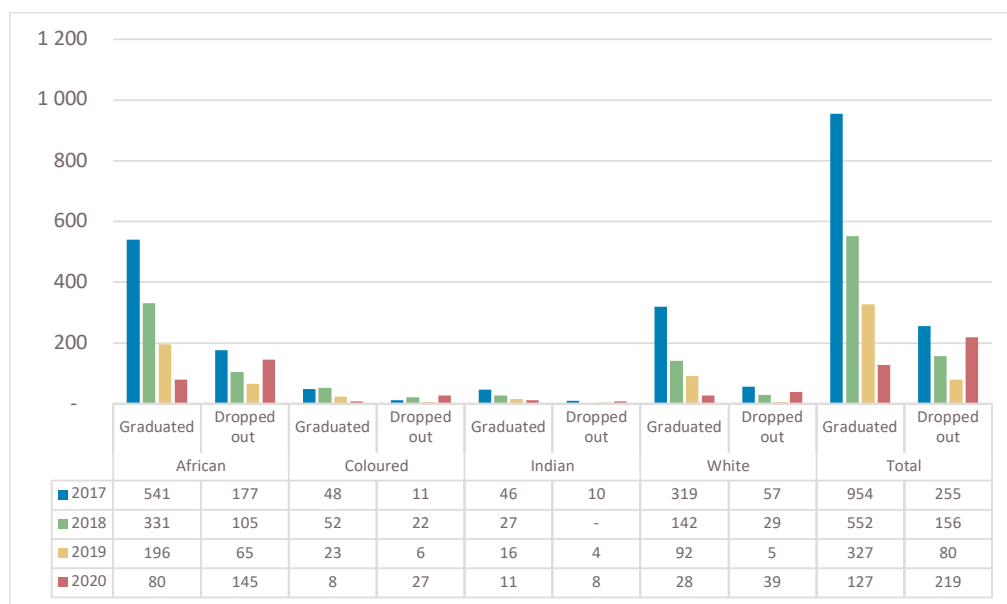


Figure 73: Master degree throughput by race, accumulative

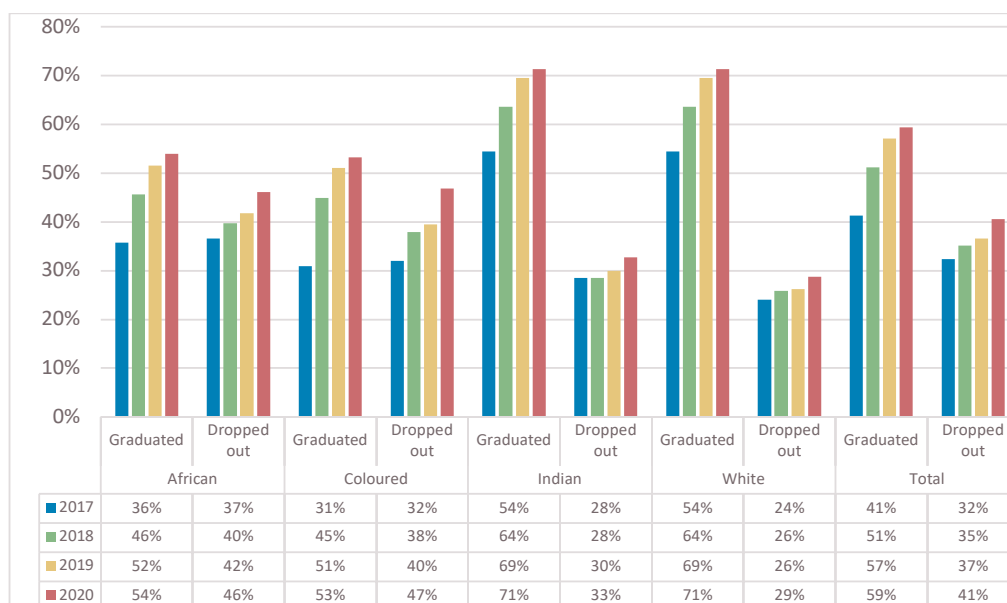


Figure 74: Master degree throughput by gender, non-accumulative

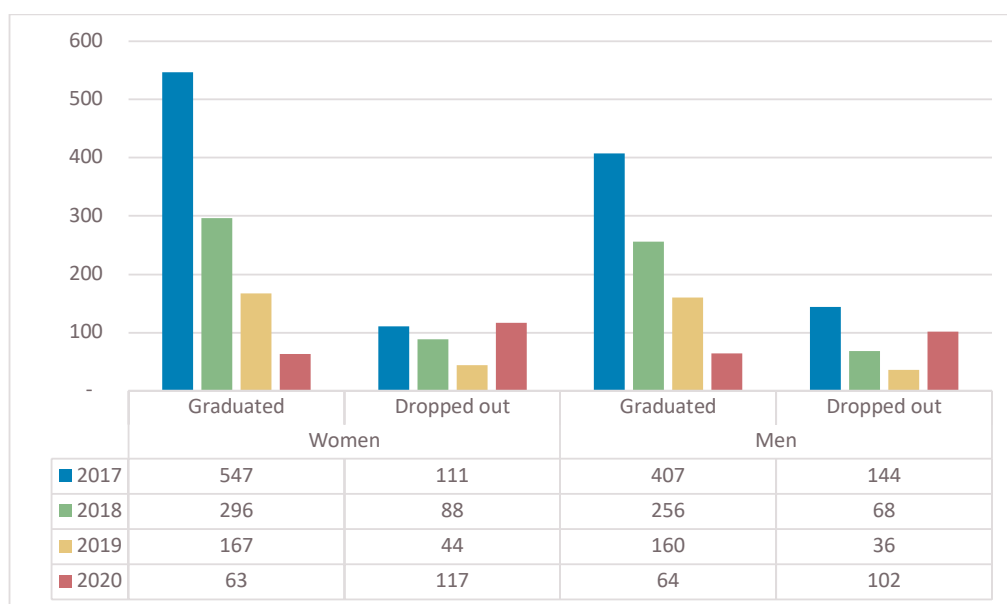


Figure 75: Master degree throughput by gender, accumulative

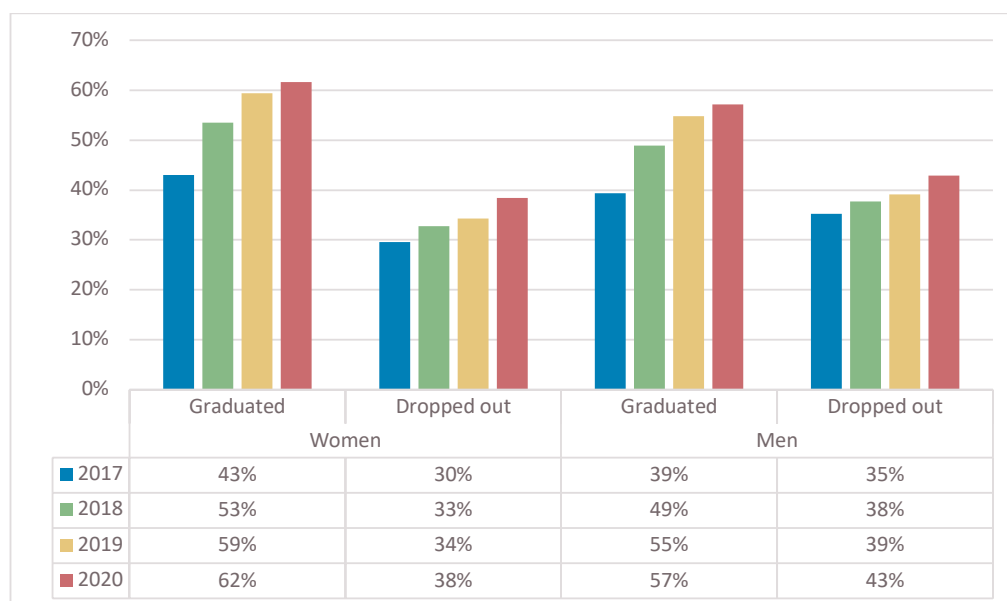
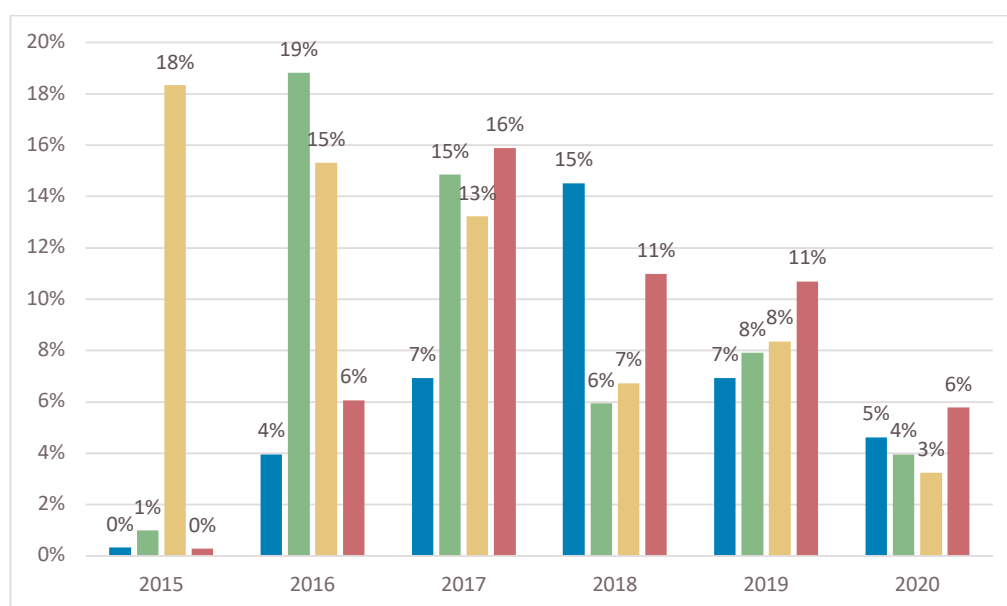


Figure 76: Master degree throughput per UoT, non-accumulative



*Master degree Cohort: Only these four UoTs are recorded. CUT, CPUT, DUT & TUT

Figure 77: Master degree throughput per UoT, accumulative

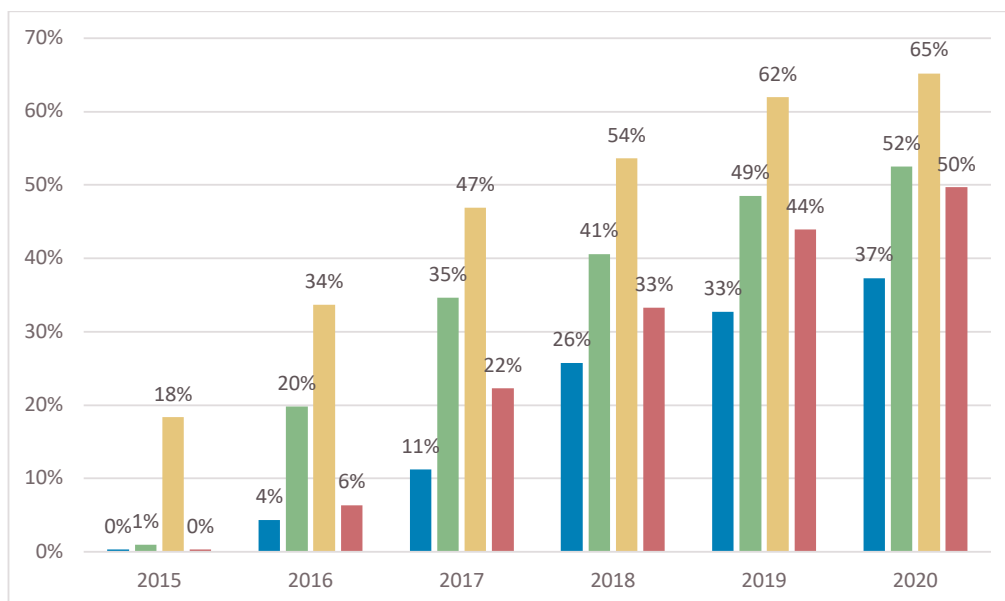


Figure 78: Master degree dropouts per UoT, non-accumulative

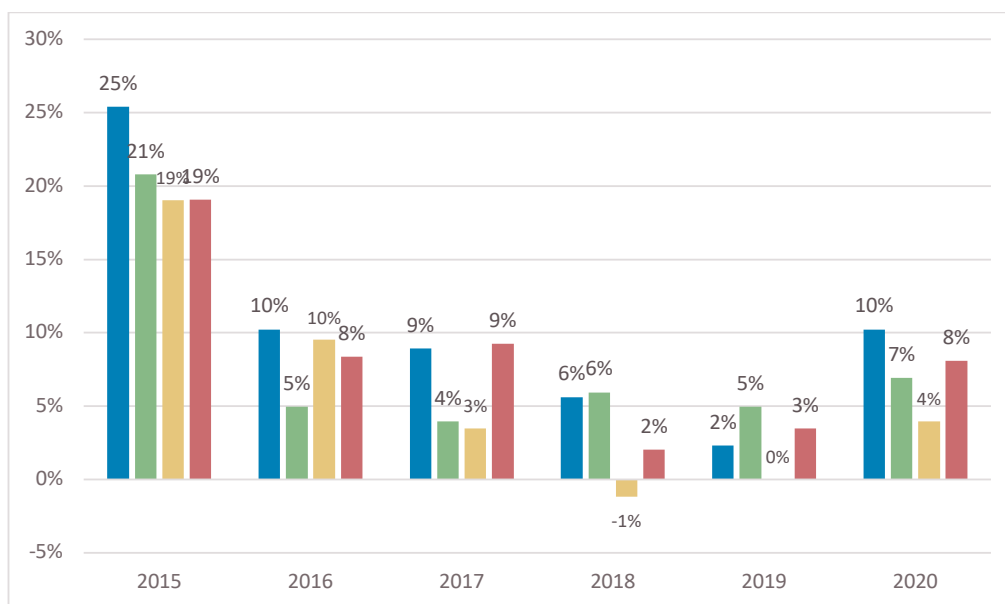


Figure 79: Master degree dropouts per UoT, accumulative

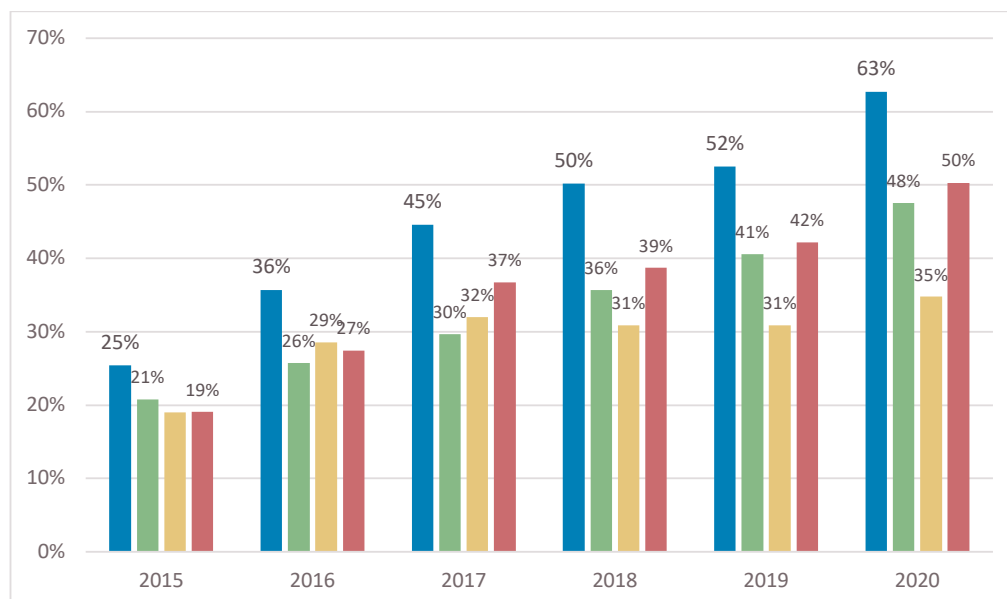


Figure 80: Master degree throughput per traditional university, non-accumulative

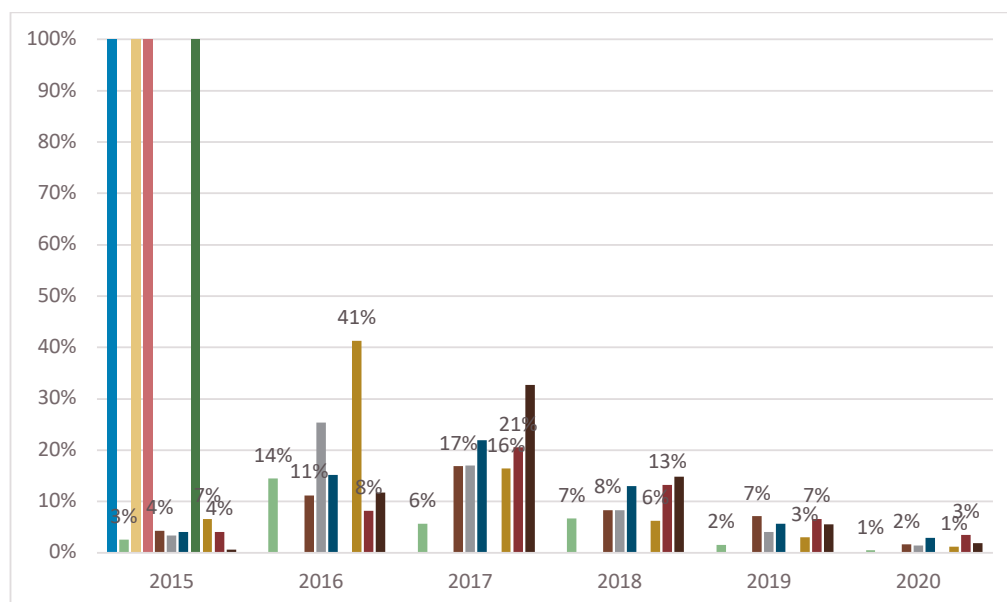


Figure 81: Master degree throughput per traditional university, accumulative

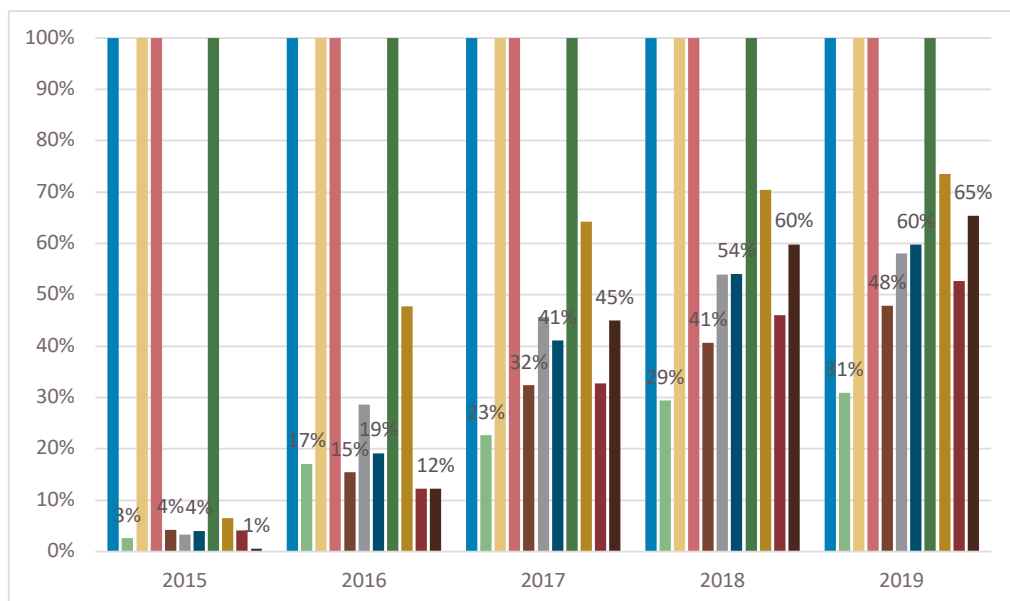


Figure 82: Masters degree dropouts per traditional university, non-accumulative

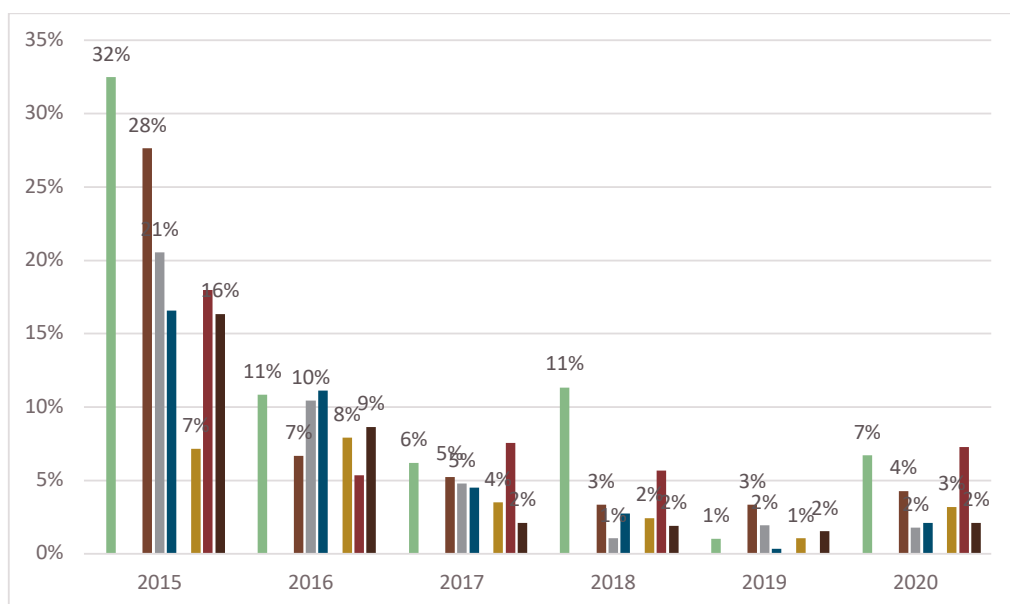


Figure 83: Master degree dropouts per traditional university, accumulative

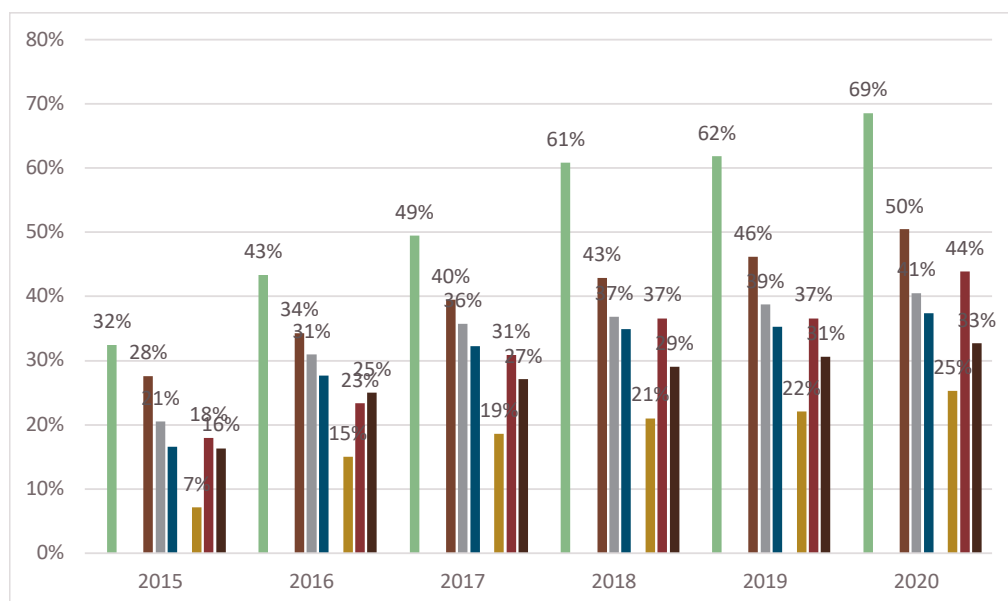


Figure 84: Master degree throughput per comprehensive university, non-accumulative

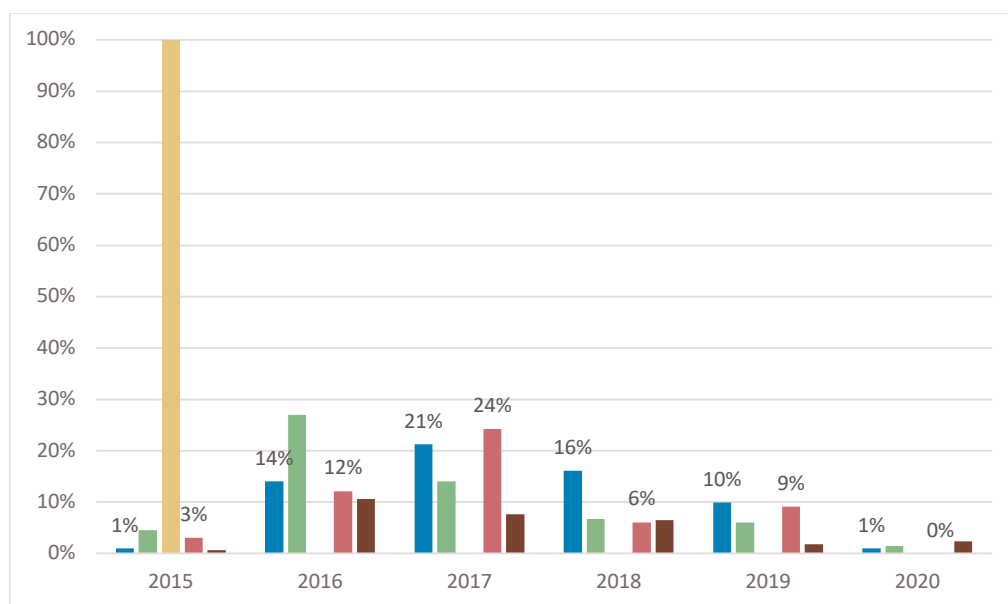


Figure 85: Masters throughput per comprehensive university, accumulative

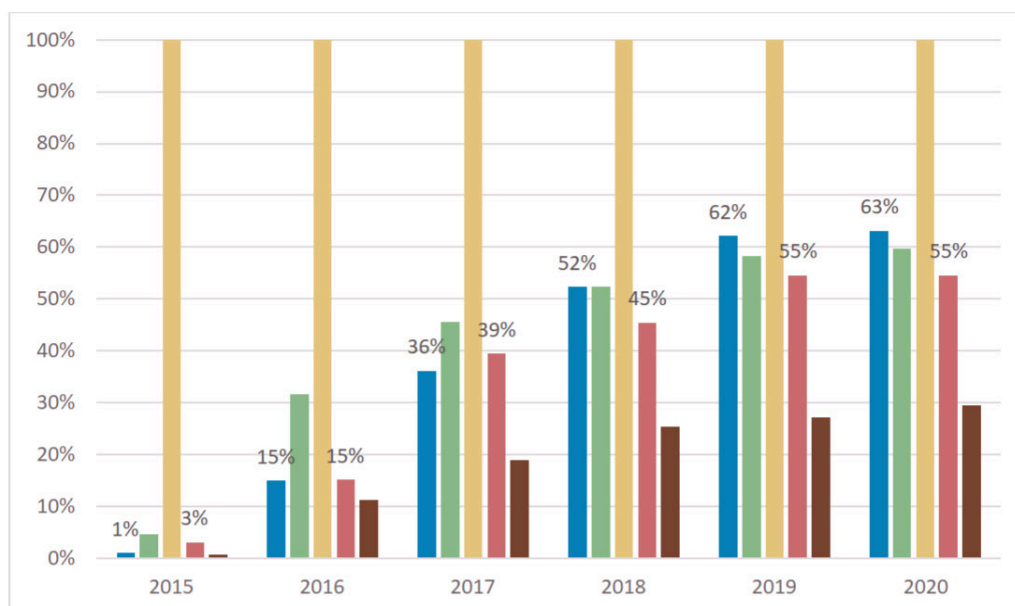


Figure 86: Masters dropouts per comprehensive university, non-accumulative

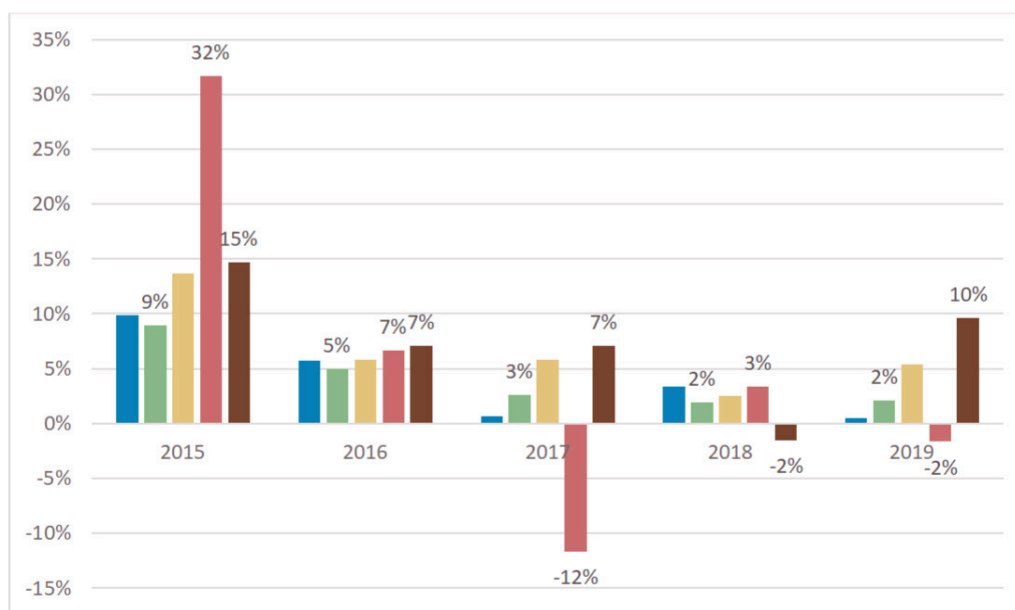
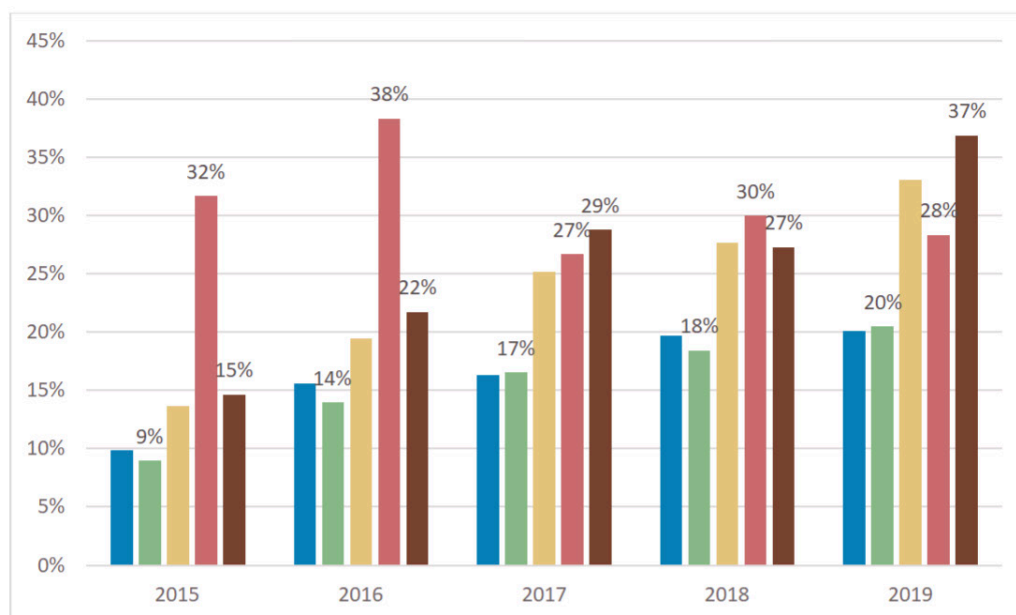


Figure 87: Masters dropouts per comprehensive university, accumulative



Doctoral Cohort Analysis

Figure 88: Doctoral cohort analysis

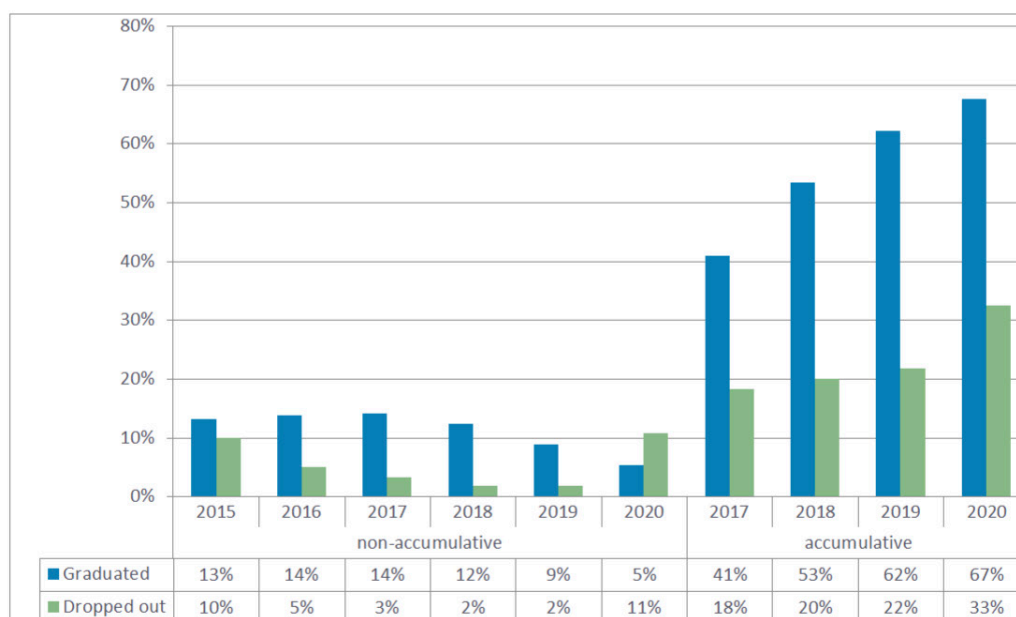


Figure 89: Doctoral throughput in science

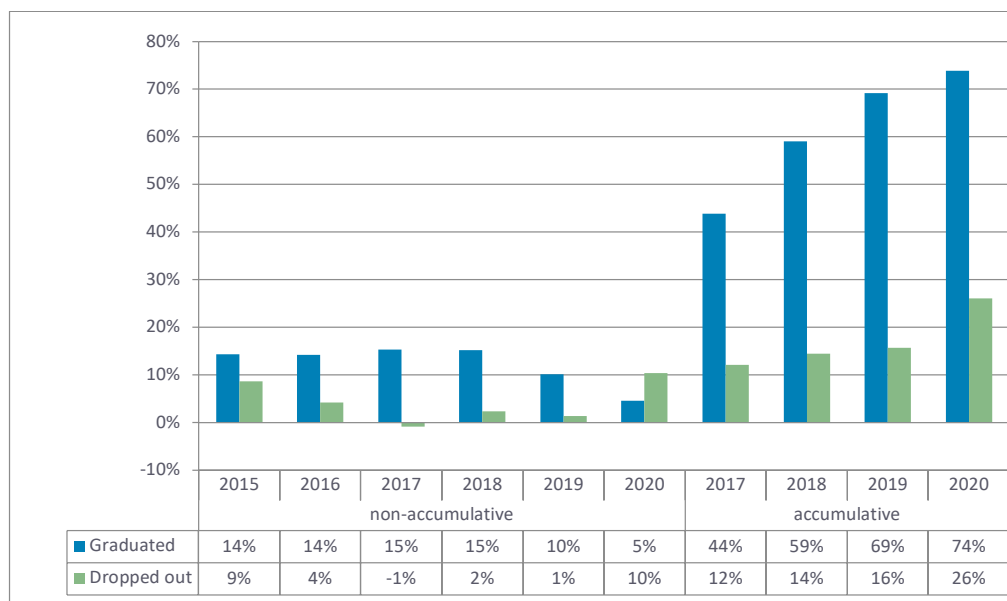


Figure 90: Doctoral throughput in engineering

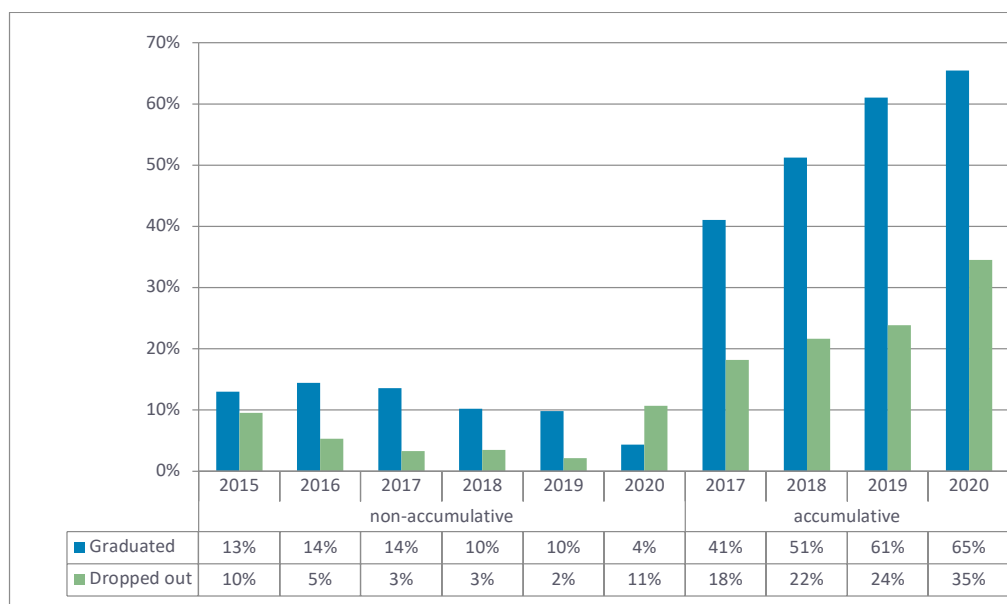


Figure 91: Doctoral throughput in Business and Management Science

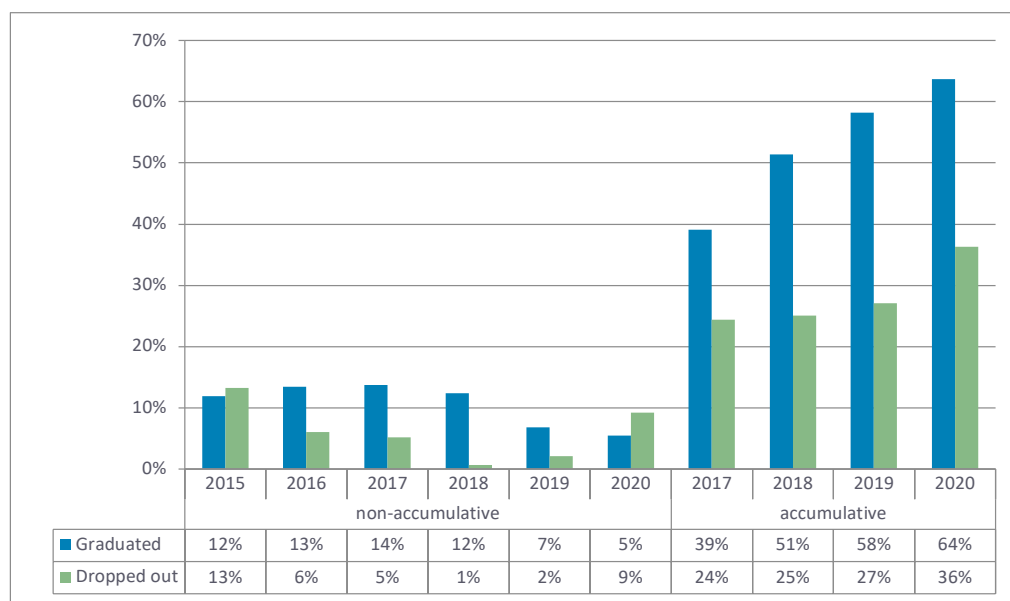


Figure 92: Doctoral throughput in Health

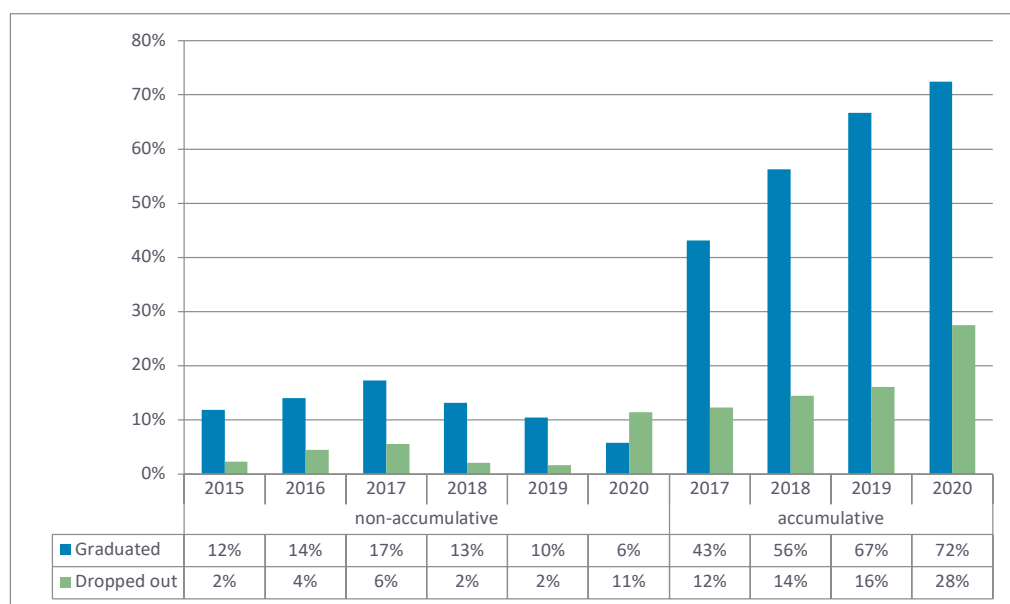


Figure 93: Doctoral throughput in Education

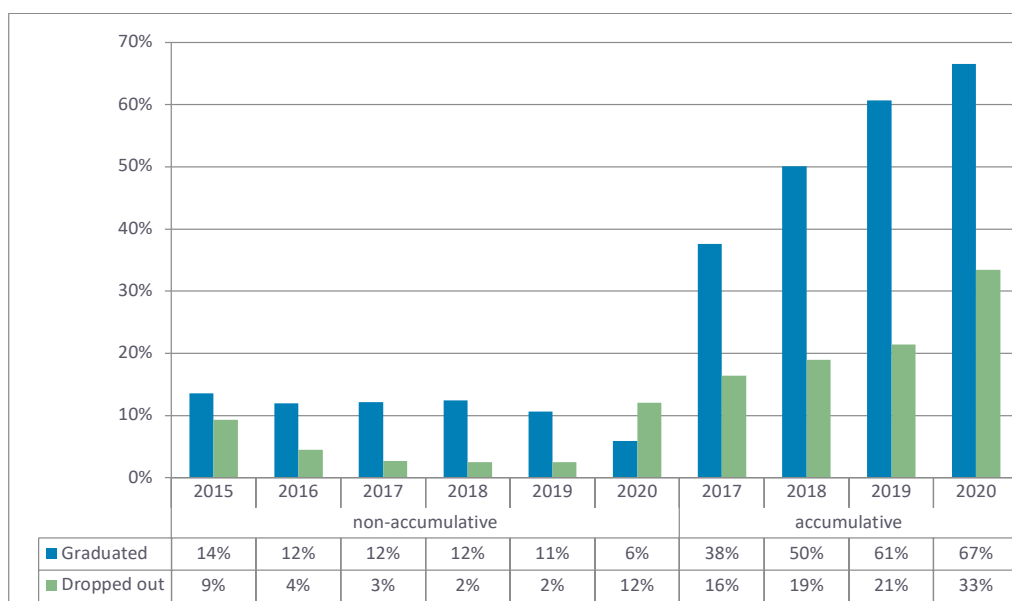


Figure 94: Doctoral throughput in Agriculture

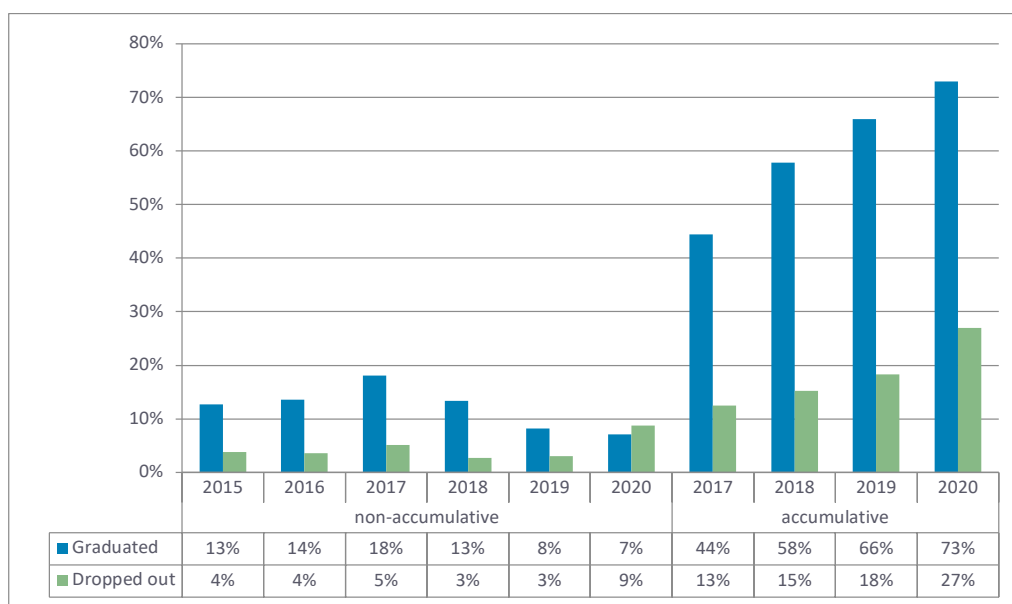


Figure 95: Percentage of the 2015 cohort doing Doctoral degrees that graduated in 5 years (2019)

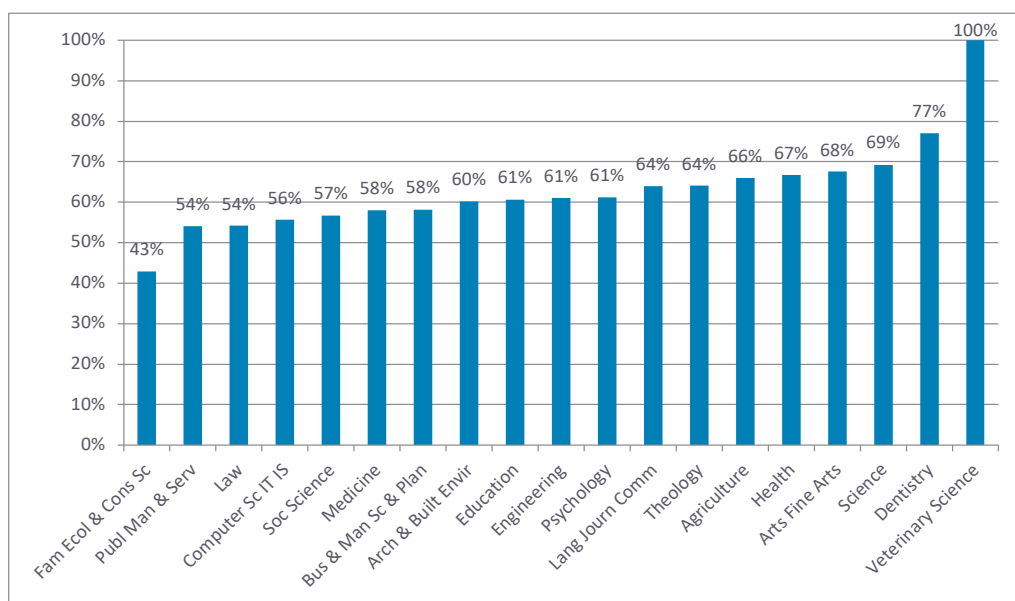


Figure 96: Headcount of the 2015 cohort doing doctoral degrees that graduated in 5 years (2019)

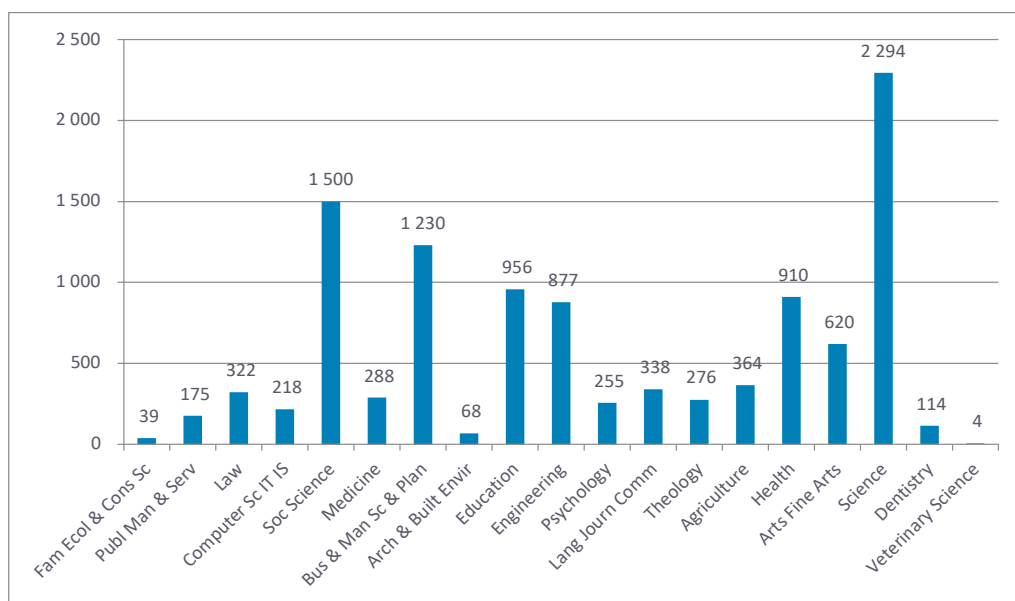


Figure 97: Percentage of the 2015 cohort doing Doctoral degrees that dropped out in 5 years (2019)

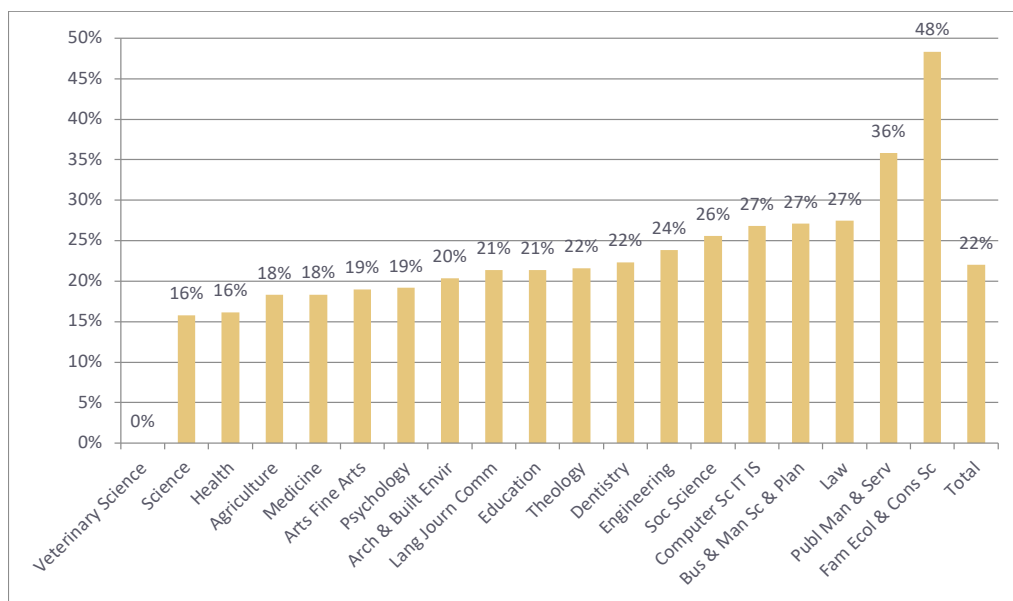


Figure 98: Headcount of the 2015 cohort doing Doctoral degrees that dropped out in 5 years (2019)

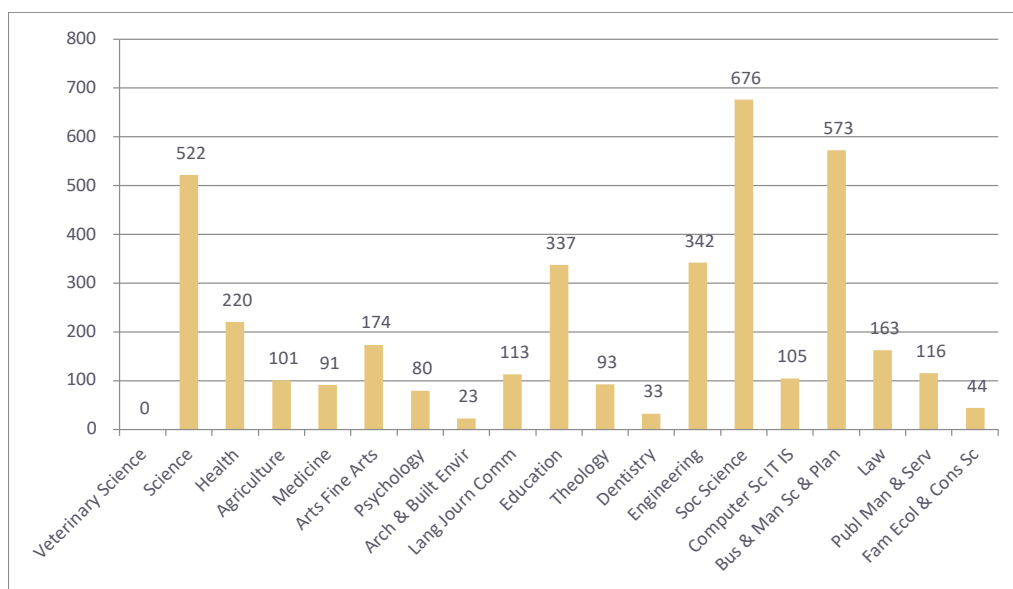


Figure 99: Doctoral throughput by race, non-accumulative

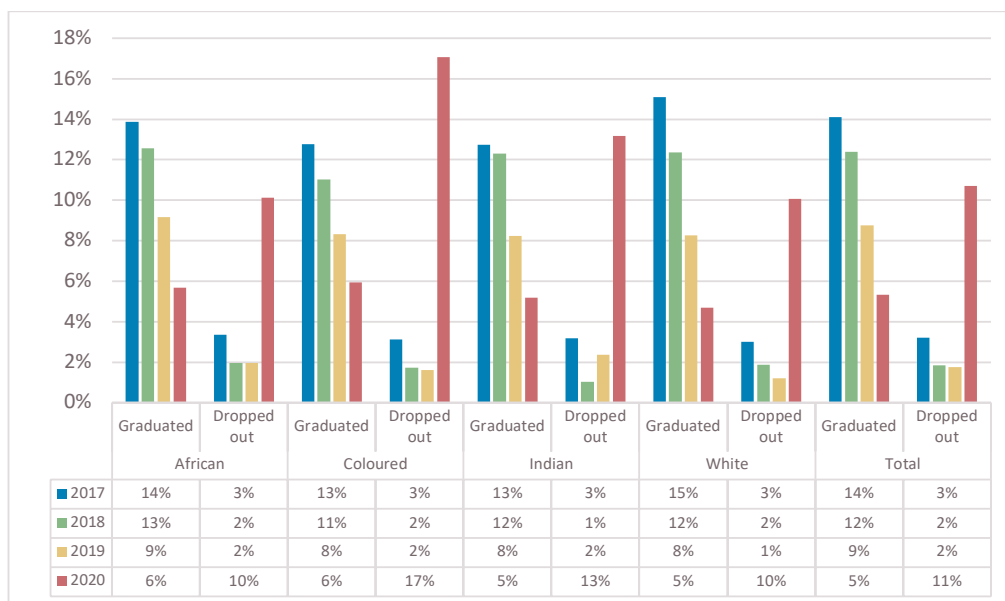


Figure 100: Doctoral throughput by race, accumulative

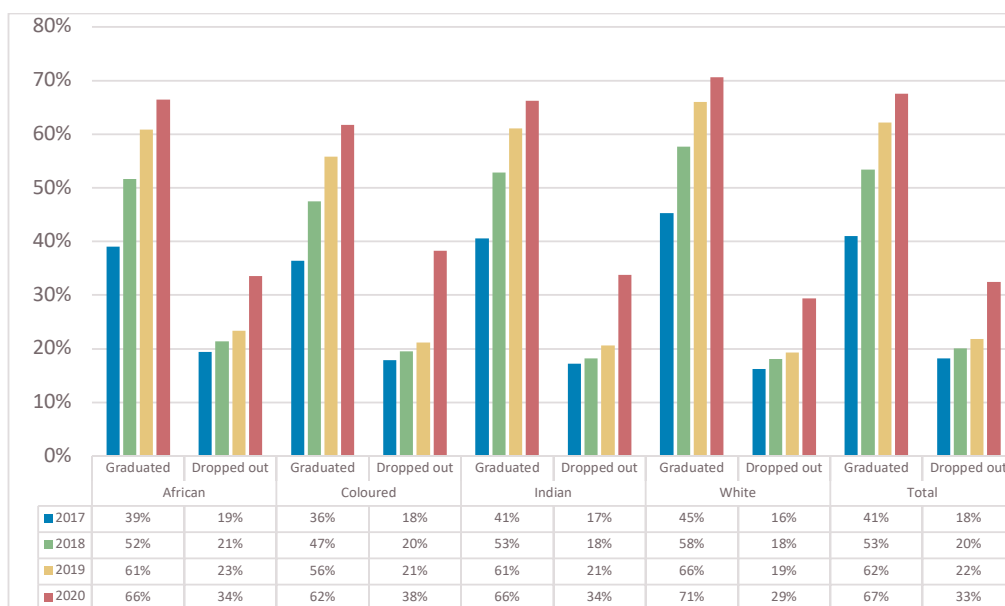


Figure 101: Doctoral throughput by gender, non-accumulative

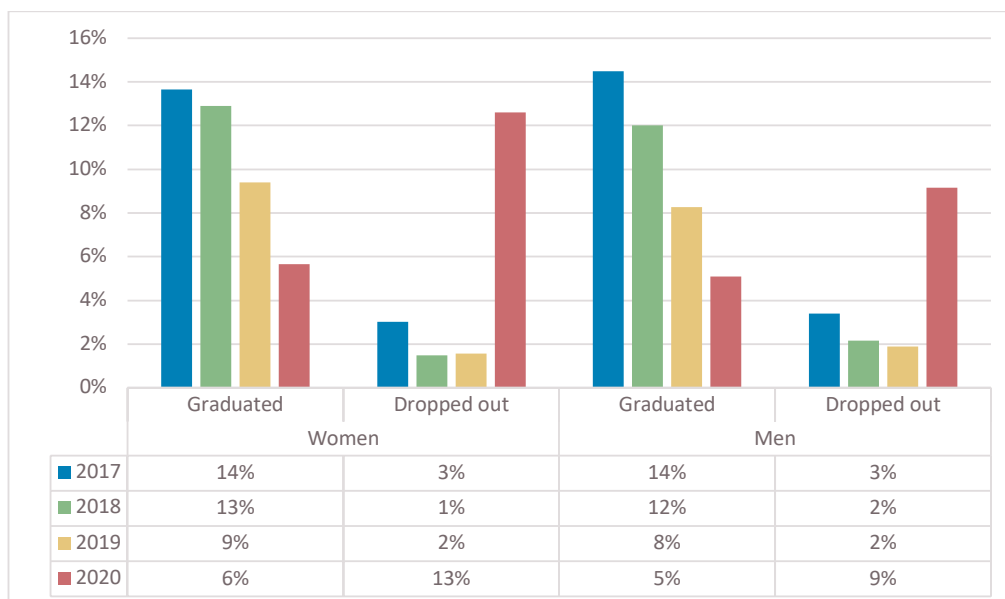


Figure 102: Doctoral throughput by gender, accumulative

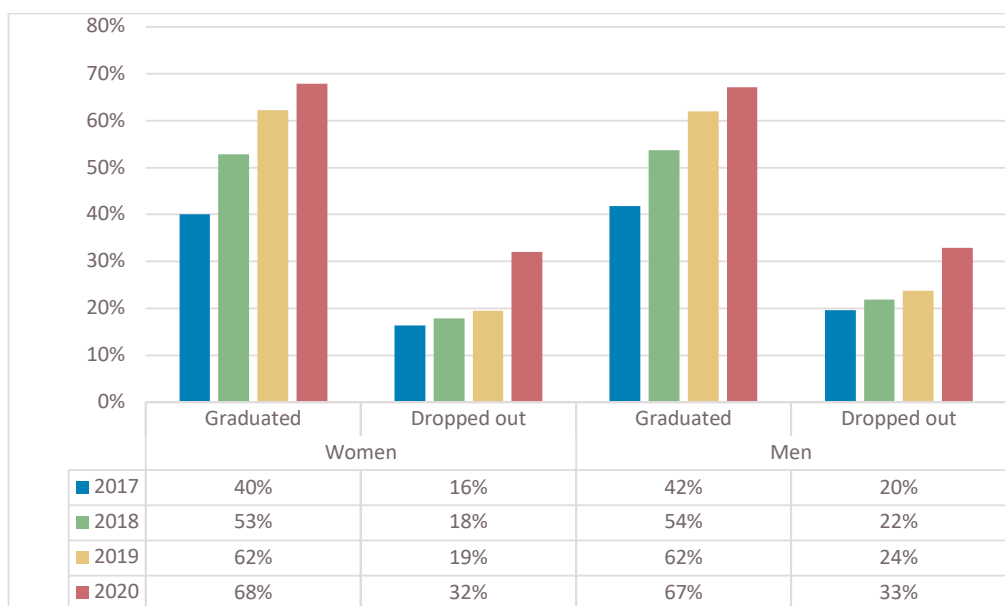


Figure 103: Doctoral throughput per UoT, non-accumulative

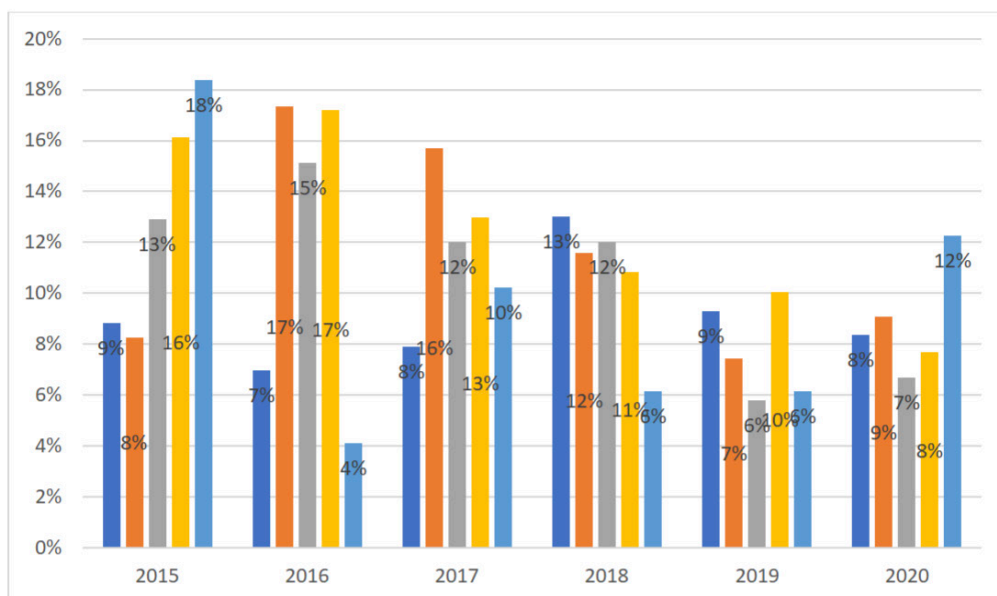


Figure 104: Doctoral throughput per UoT, accumulative

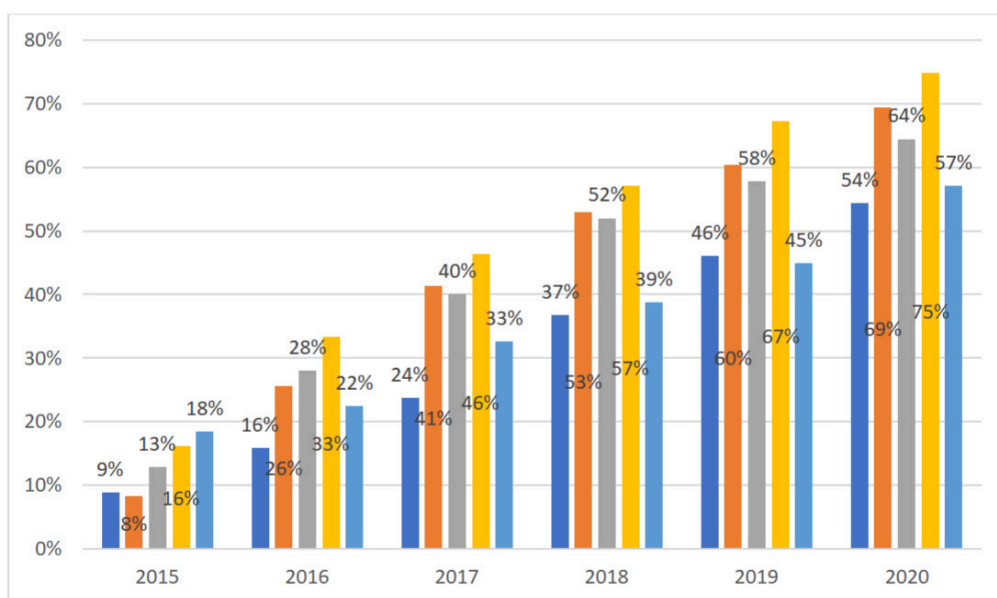


Figure 105: Doctoral dropouts per UoT, non-accumulative

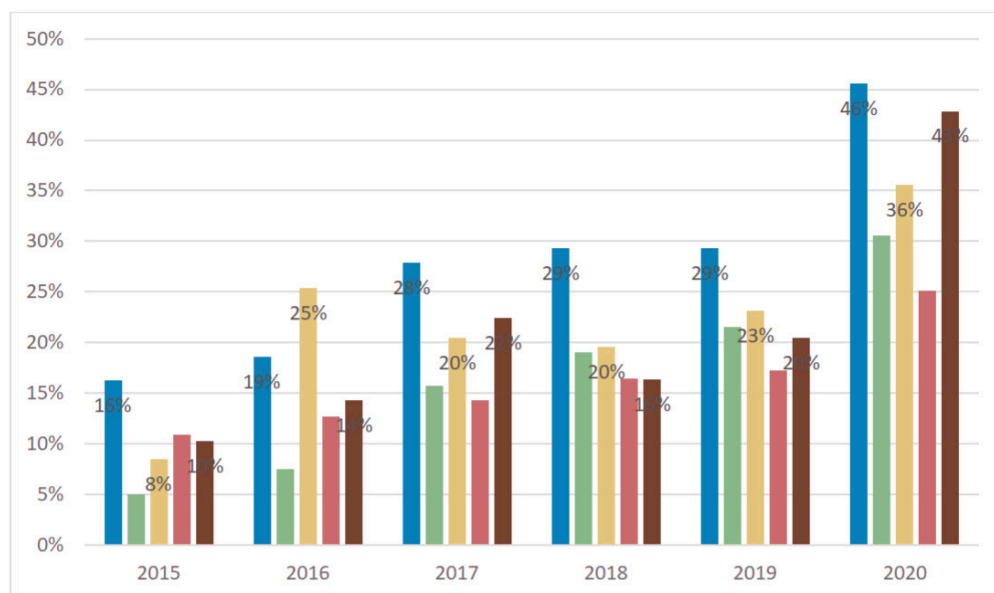


Figure 106: Doctoral dropouts per UoT, accumulative

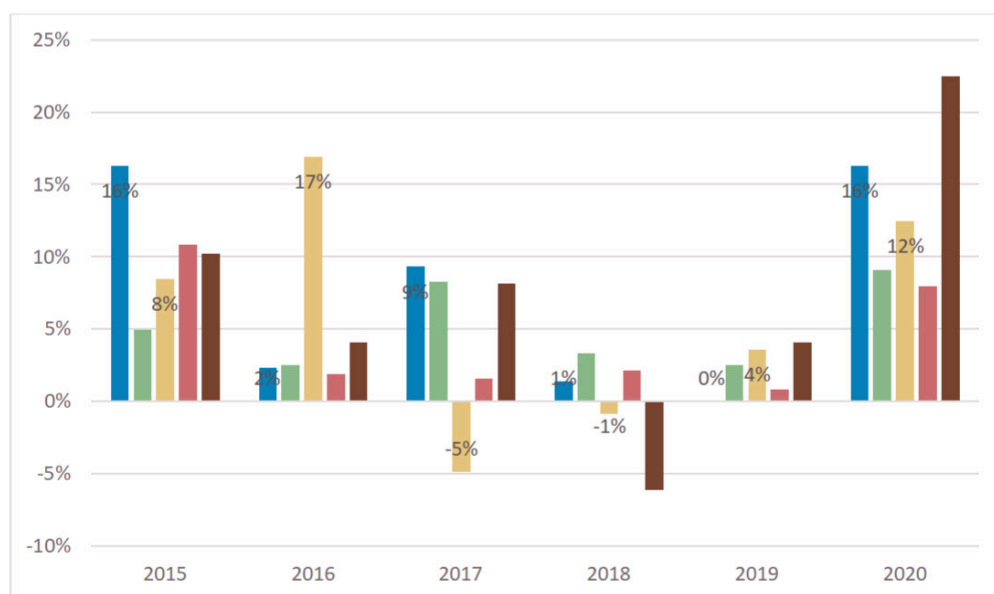


Figure 107: Doctoral throughput per traditional university, non-accumulative

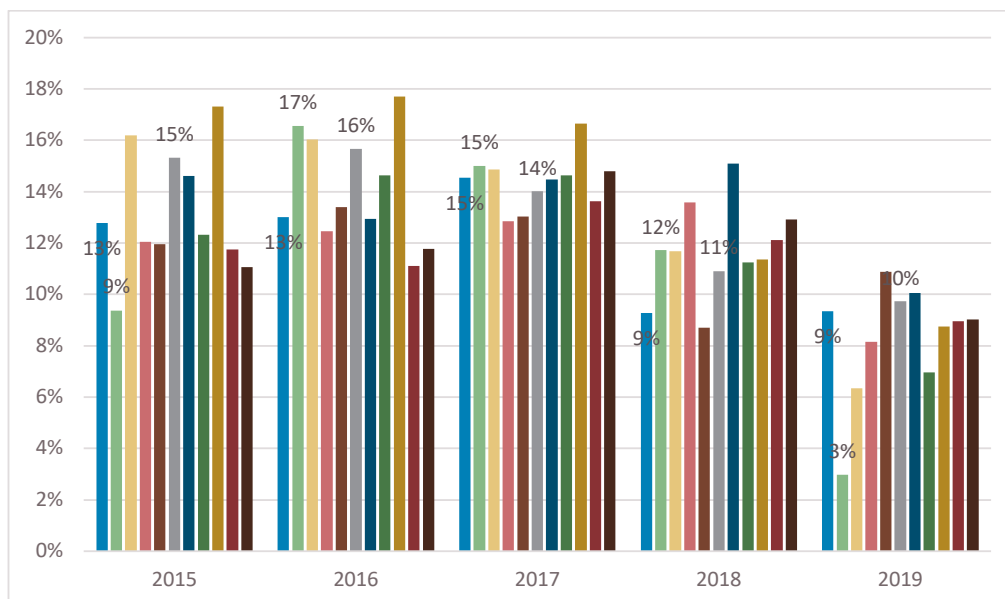


Figure 108: Doctoral throughput per traditional university, accumulative

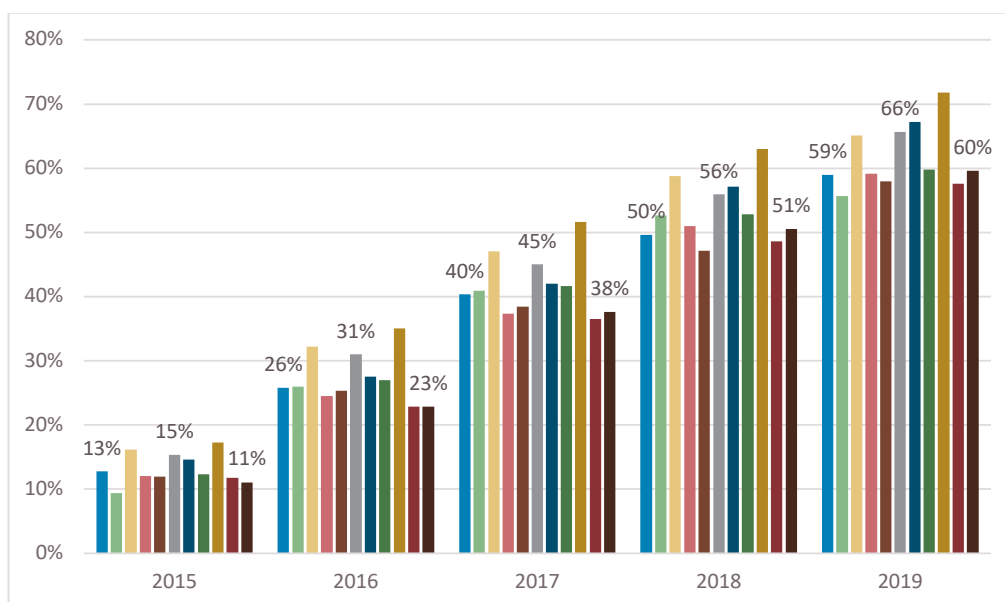


Figure 109: Doctoral dropouts per traditional university, non-accumulative

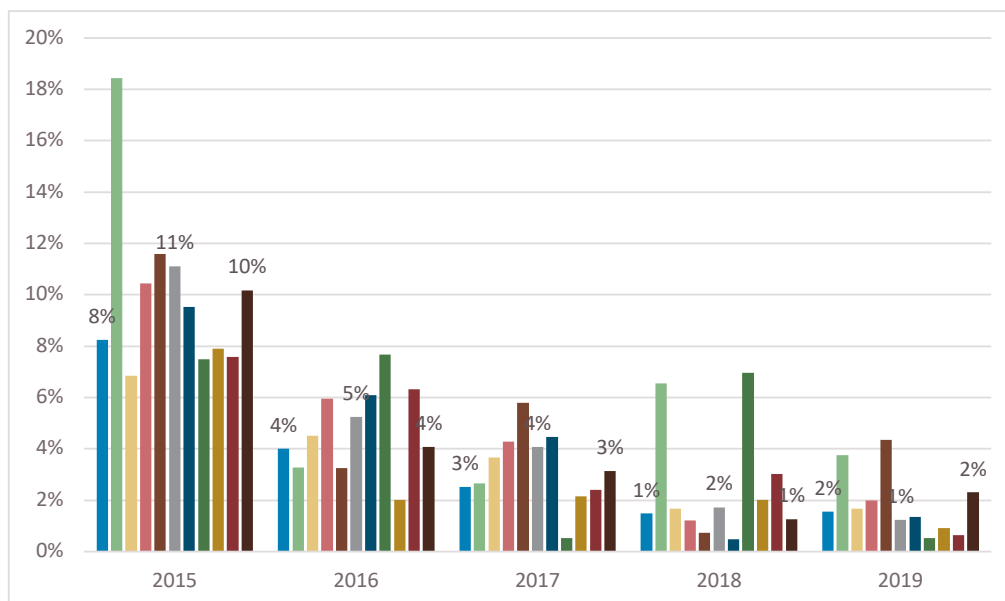


Figure 110: Doctoral dropouts per traditional university, accumulative

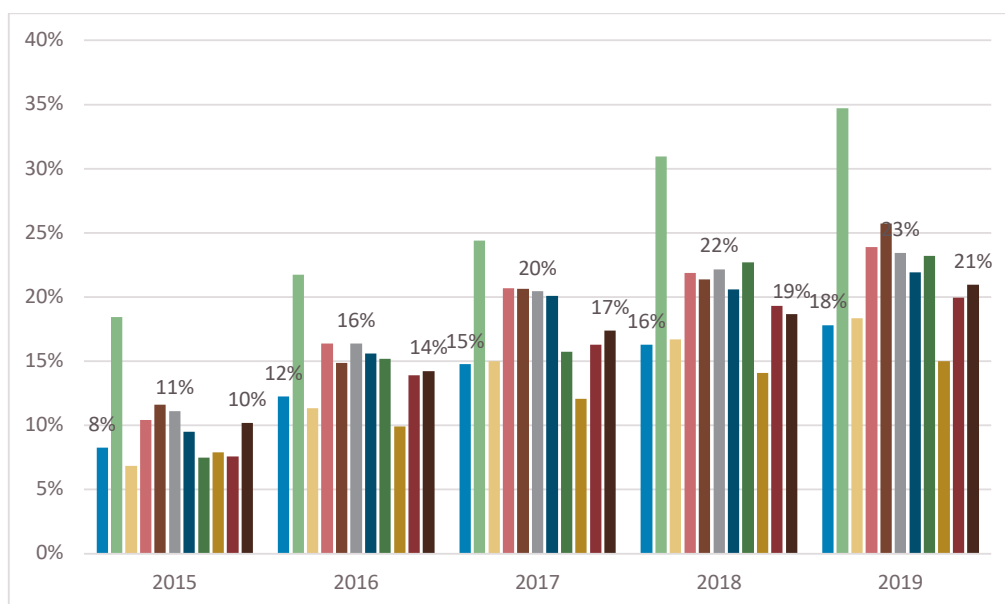


Figure 111: Doctoral throughput per comprehensive university, non-accumulative

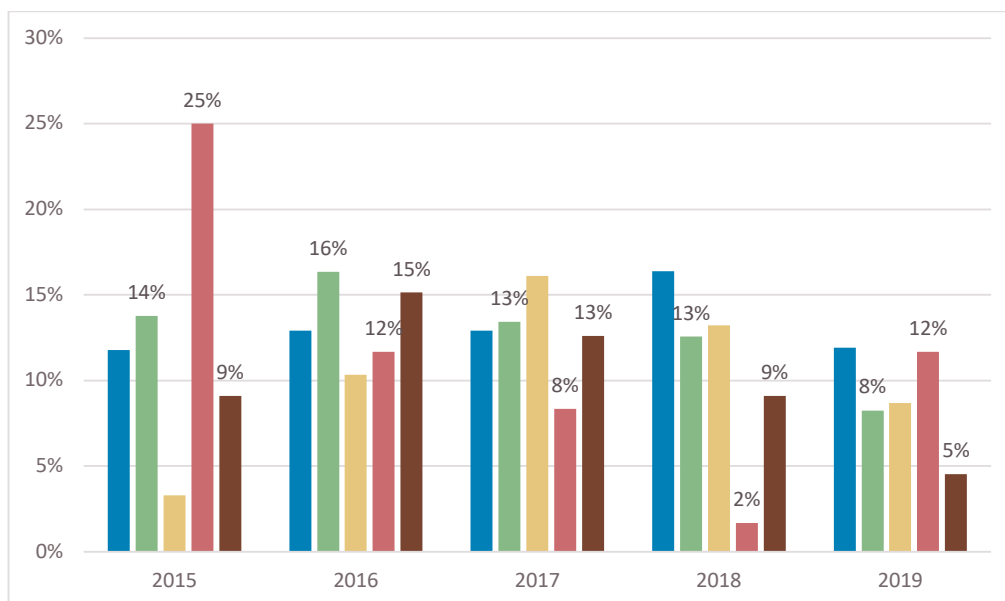


Figure 112: Doctoral throughput per comprehensive university, accumulative

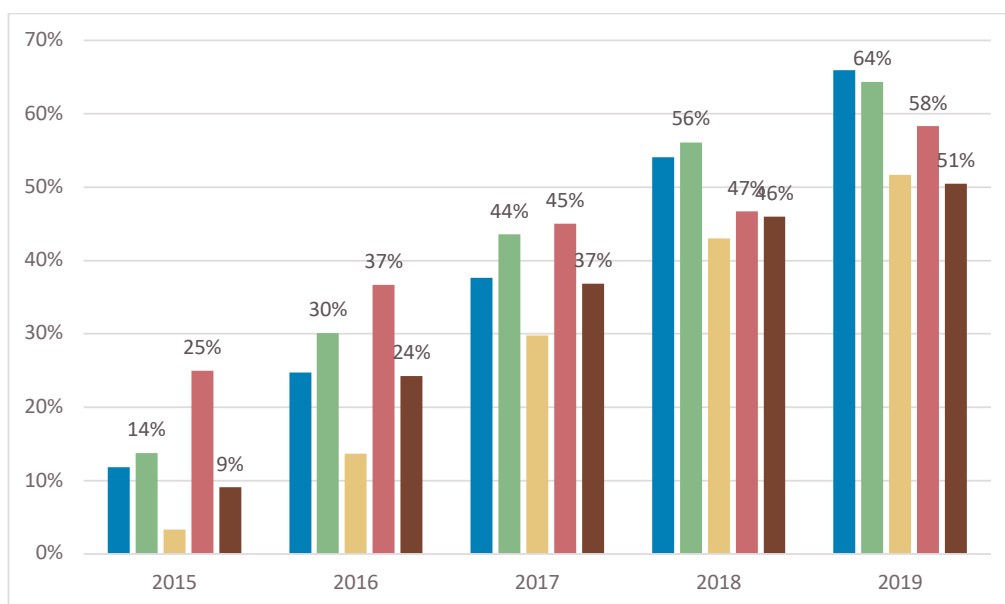


Figure 113: Doctoral dropouts per comprehensive university, non-accumulative

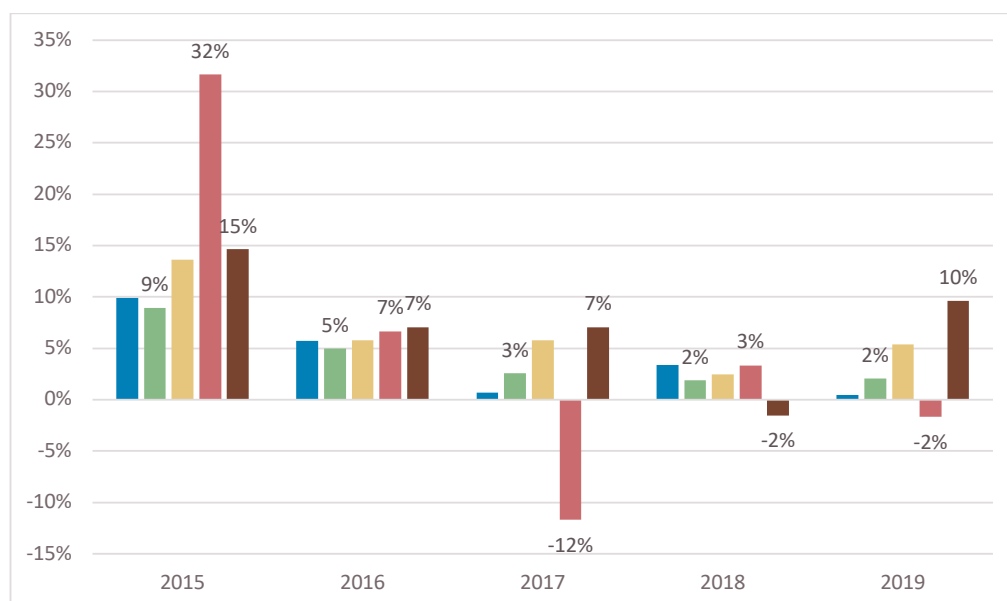
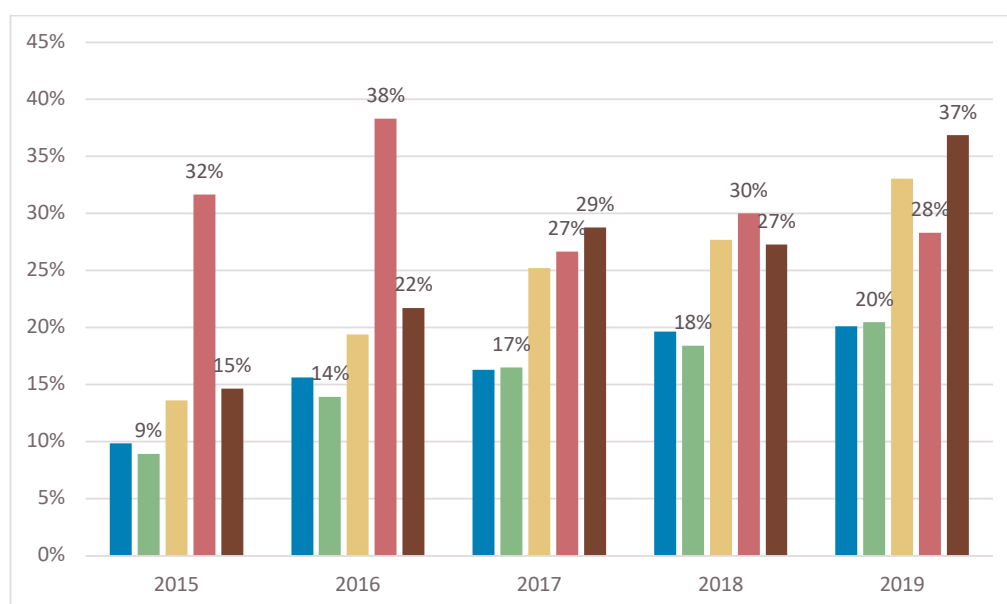


Figure 114: Doctoral dropouts per comprehensive university, accumulative



Research output and output grant

Research output and output grant

Figure 115: Research output units by publication type from 2015 to 2020

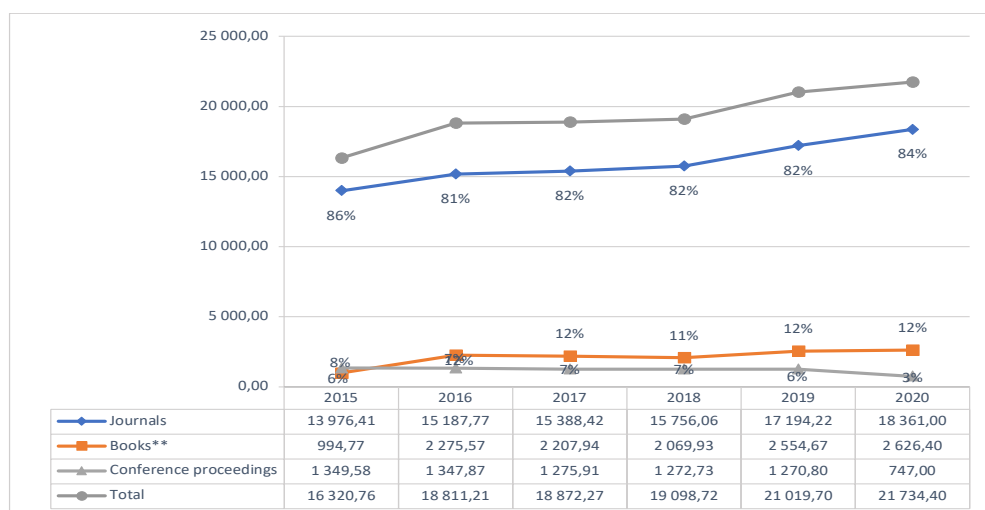


Figure 116: Percentage research output units (all publication types) by broad field from 2015 to 2020

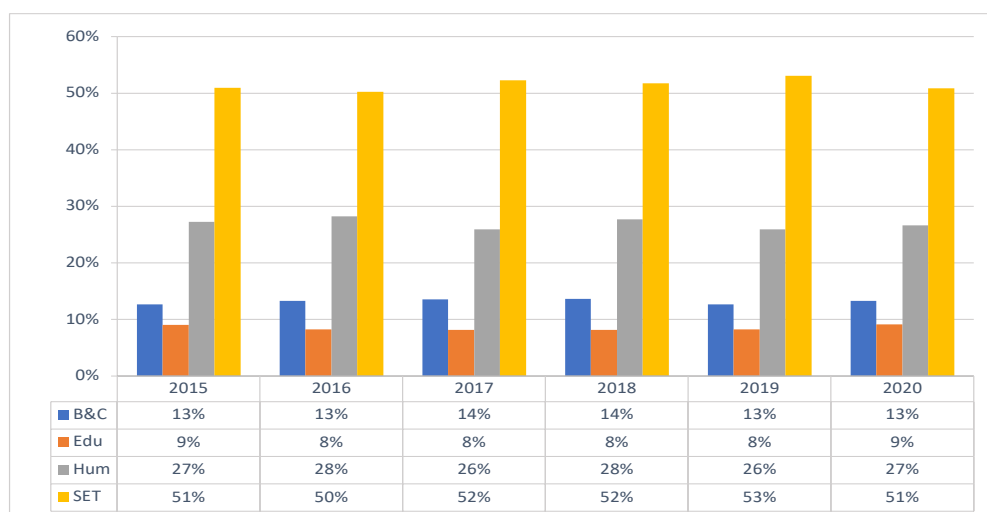


Figure 117: Per capita research output units (all publication types) by CESM for 2020

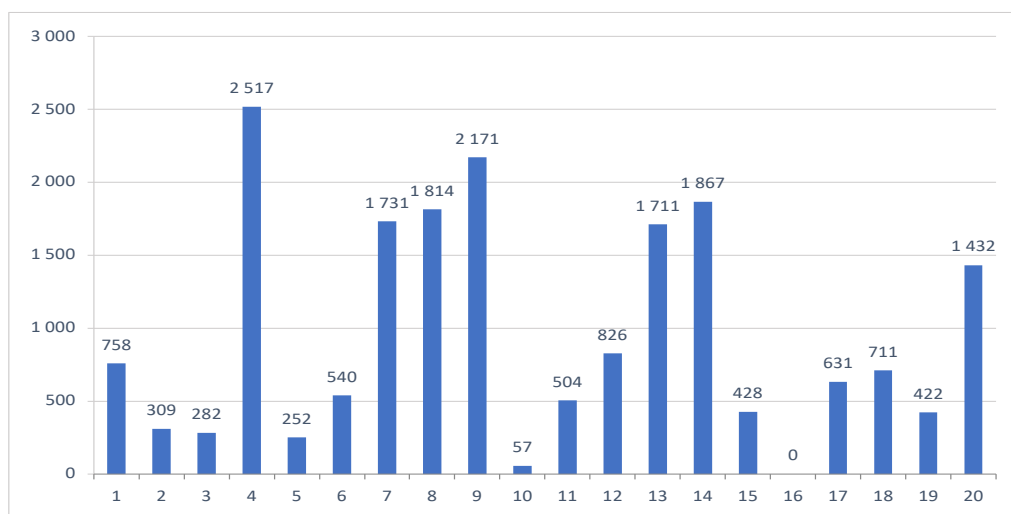


Figure 118: Percentage research output units (all publication types) by CESM for 2020

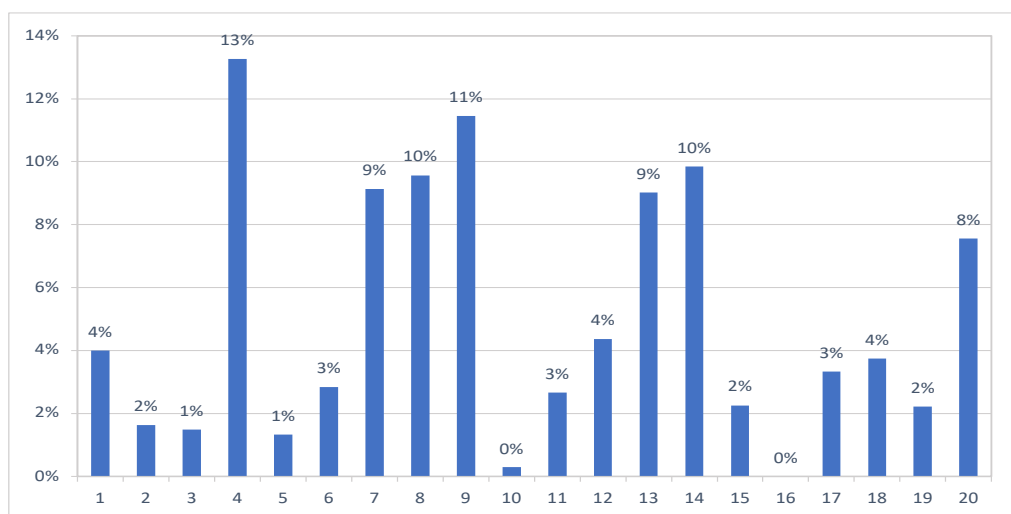


Figure 119: Research output units per capita by institution for 2010, 2015 and 2020.

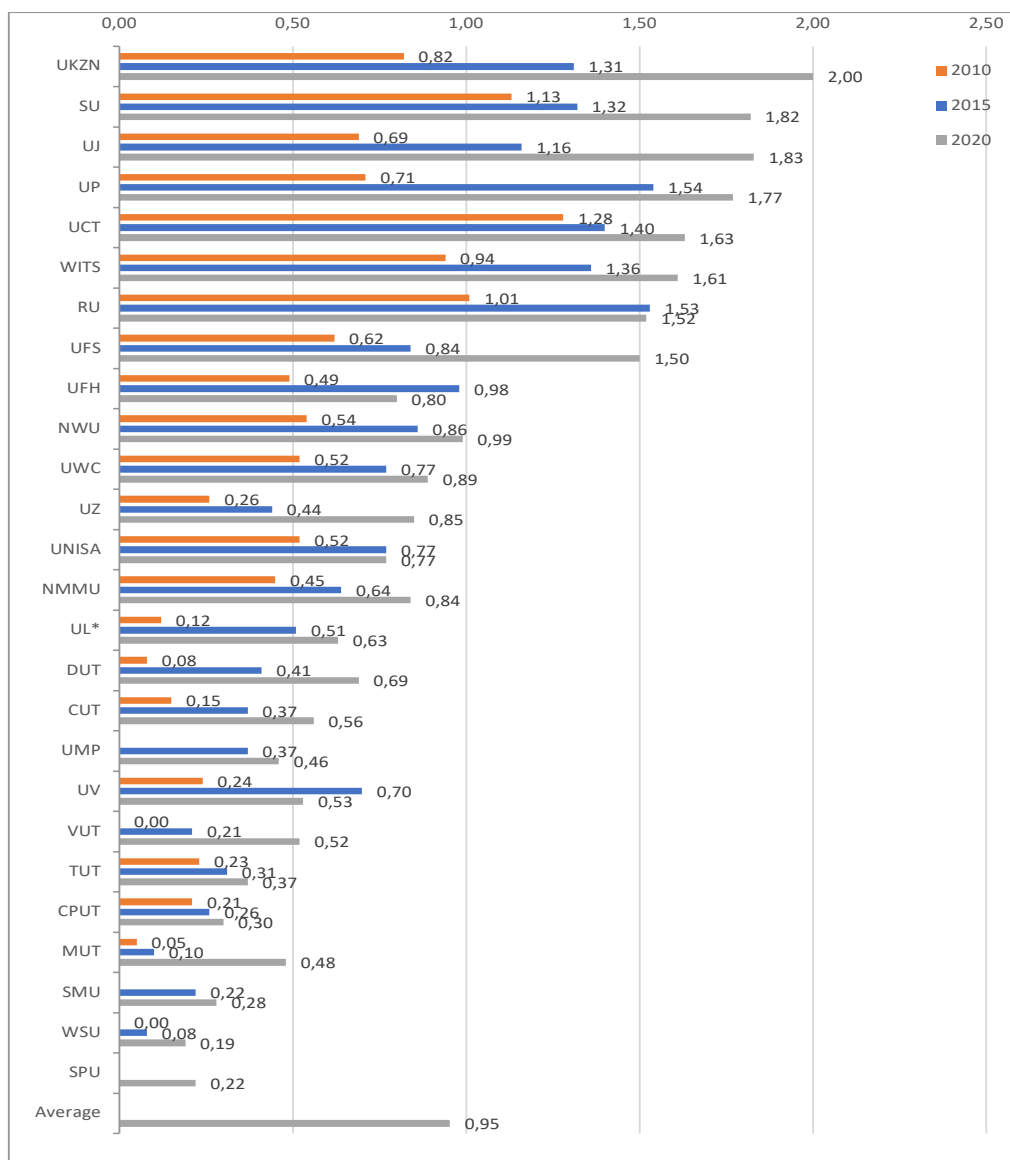


Figure 120: Weighted actual research output units: Trads

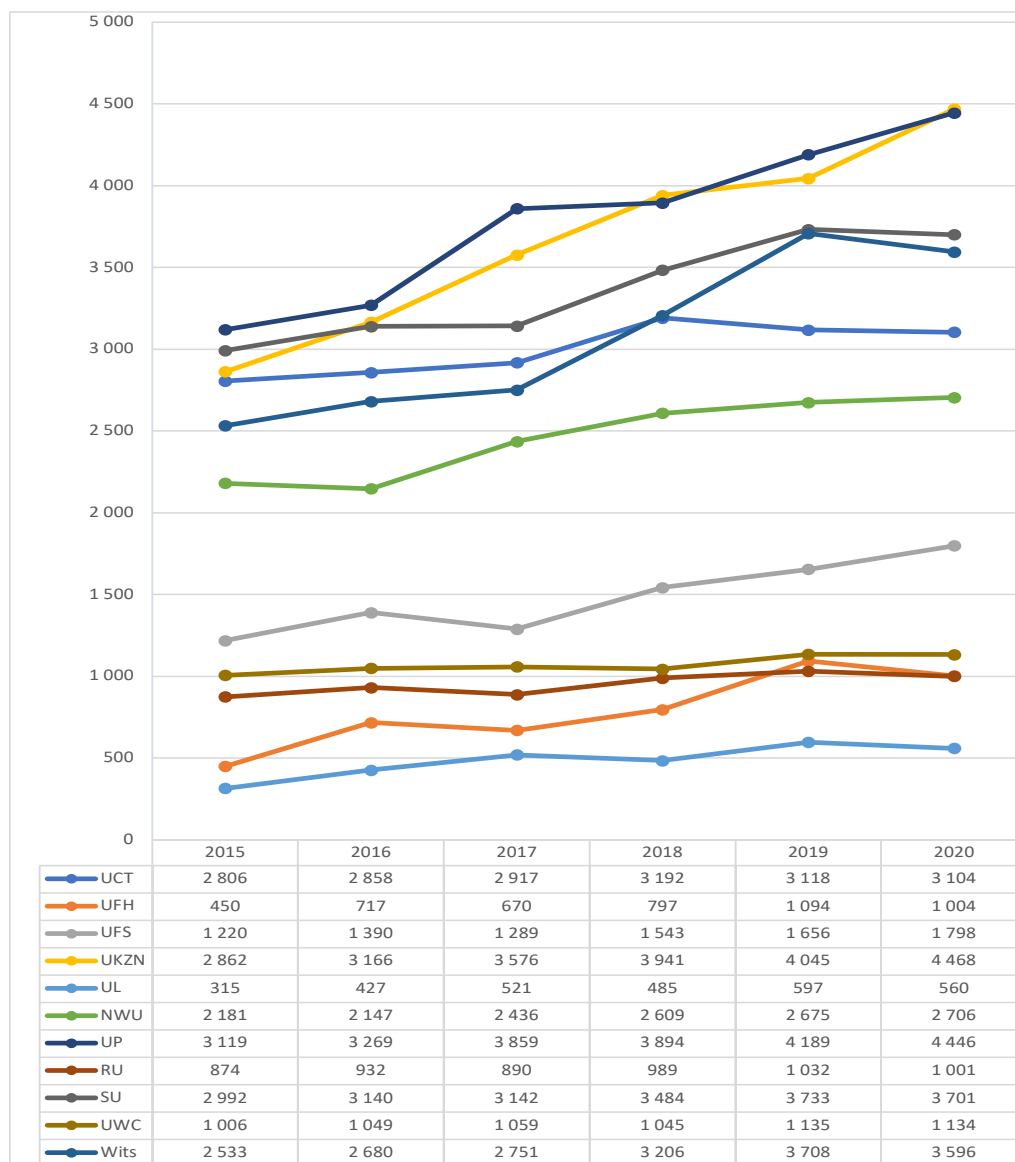


Figure 121: Actual research output grants: Trads

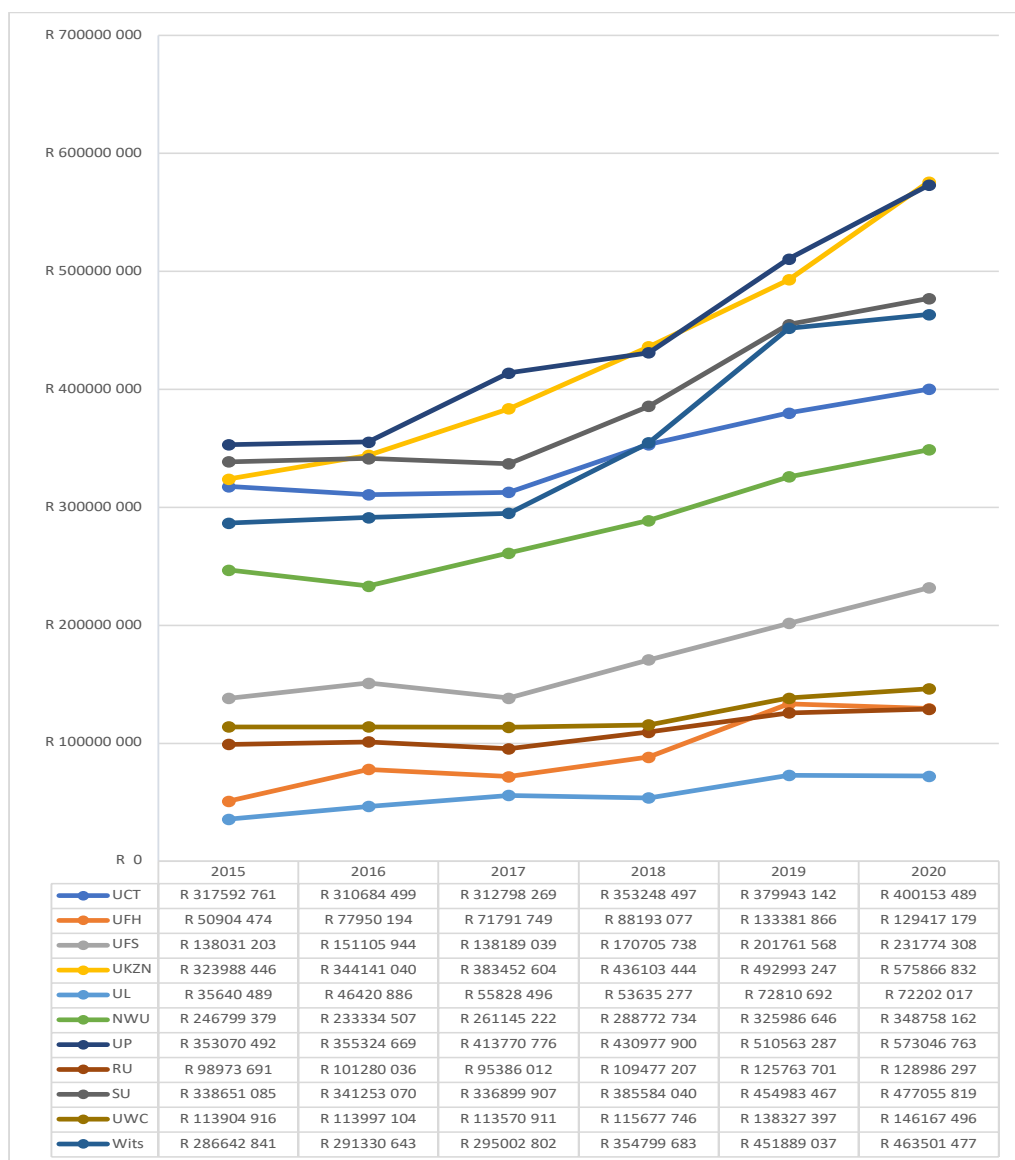


Figure 122: Weighted actual research output units: UoTs

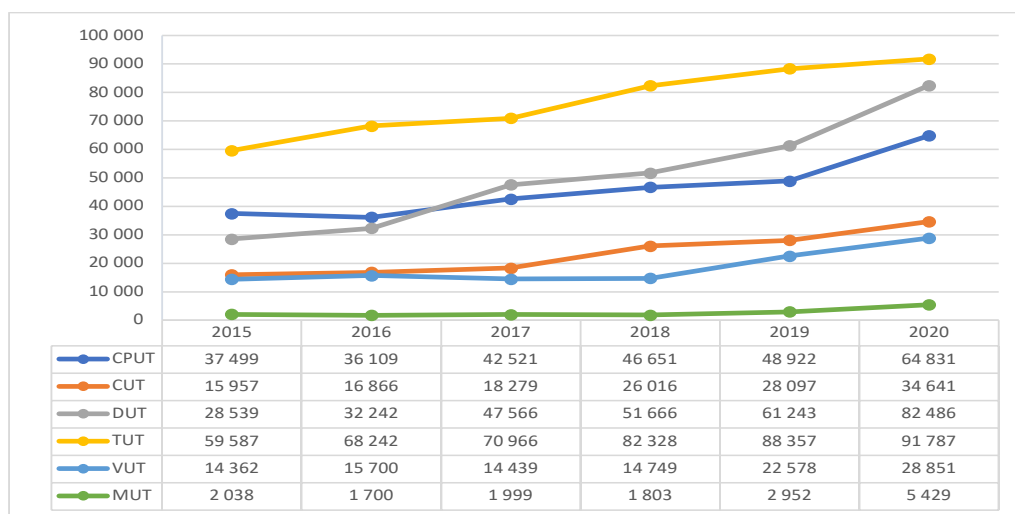


Figure 123: Actual research output grants: UoTs

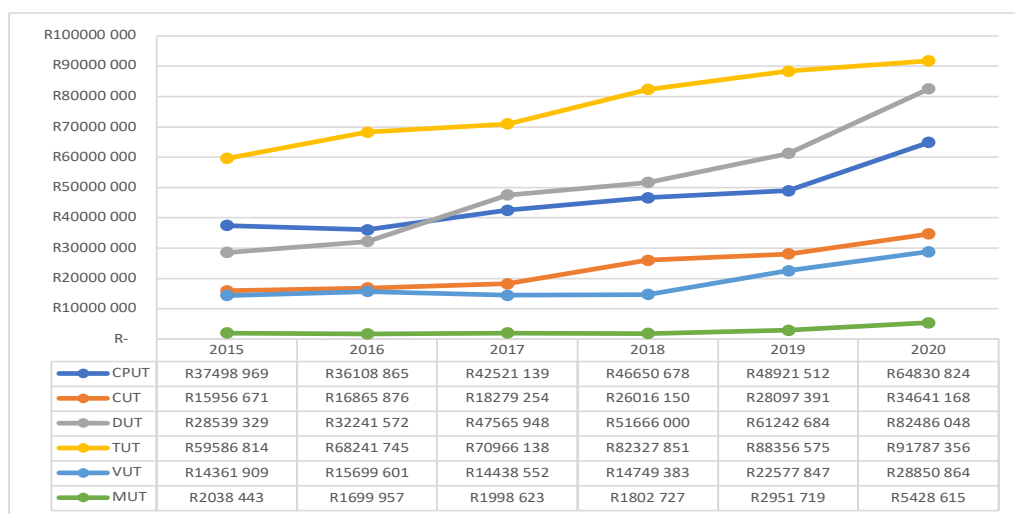


Figure 124: Weighted actual research output units: Comps

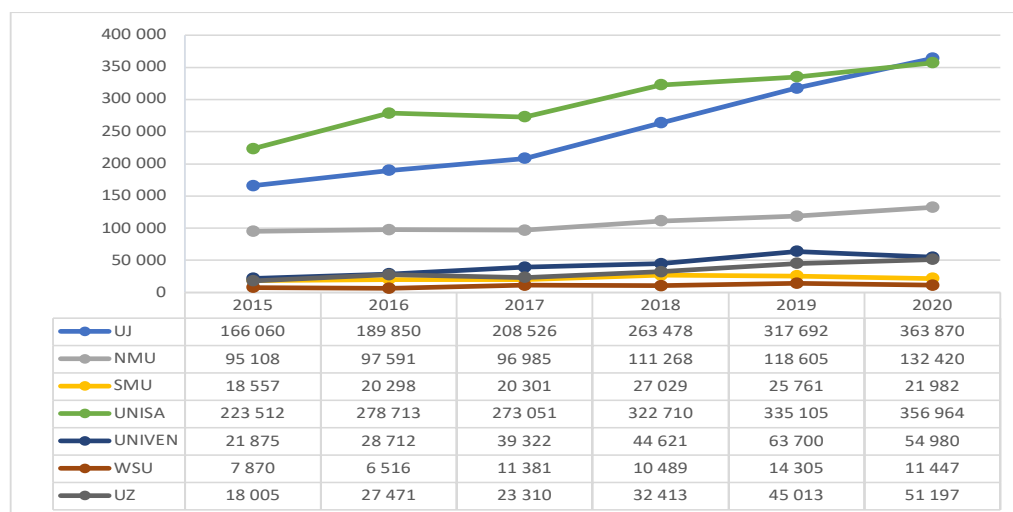


Figure 125: Actual research output grants: Comps

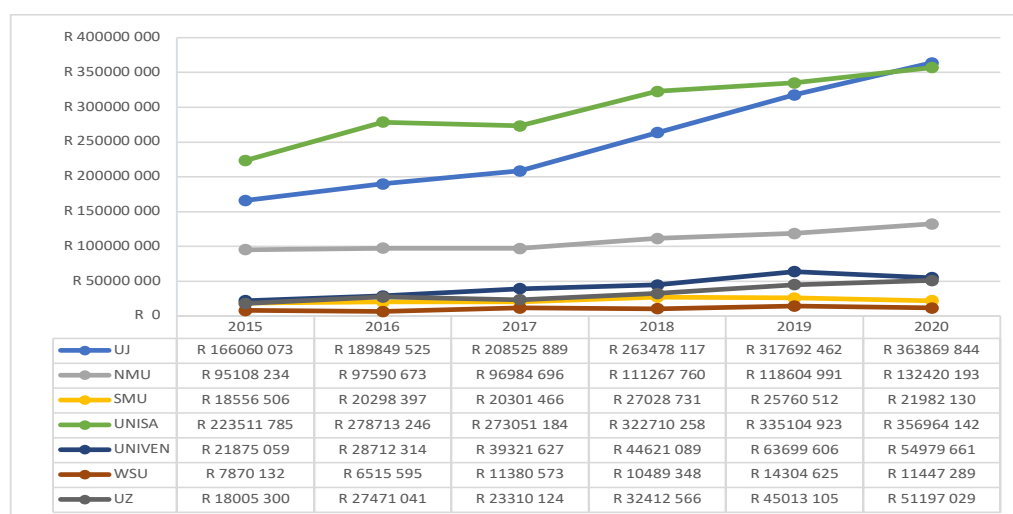


Figure 126: Journal article outputs per Trad

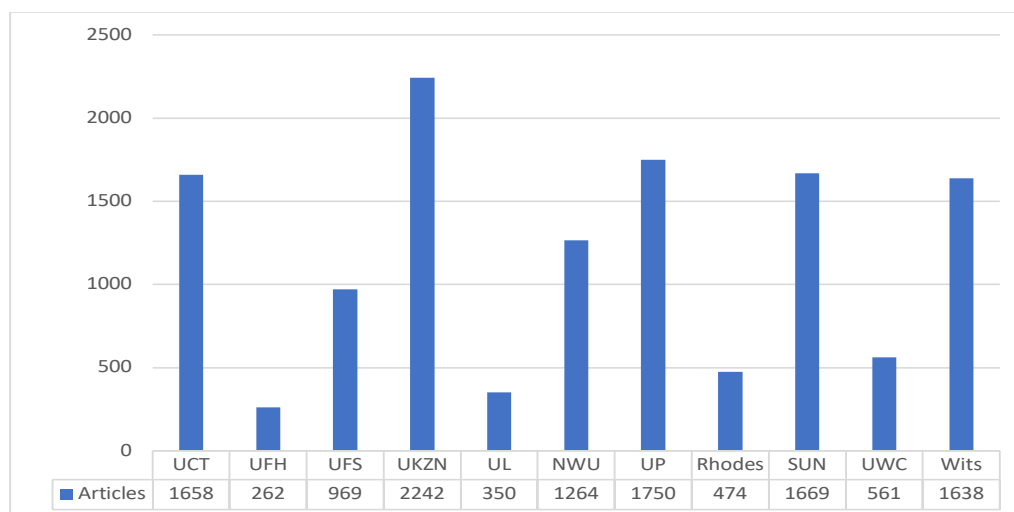


Figure 127: Conference outputs per Trad

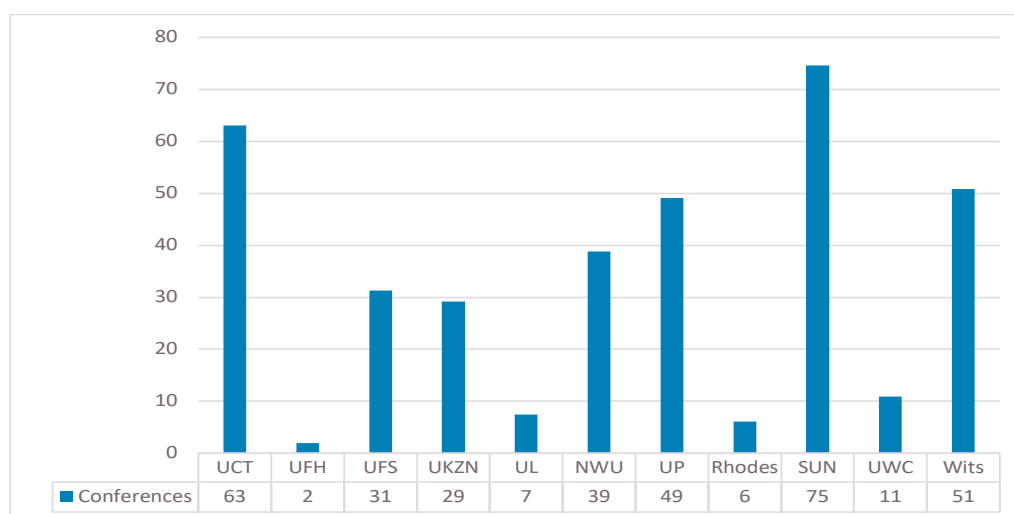


Figure 128: Book and book sections outputs per Trad

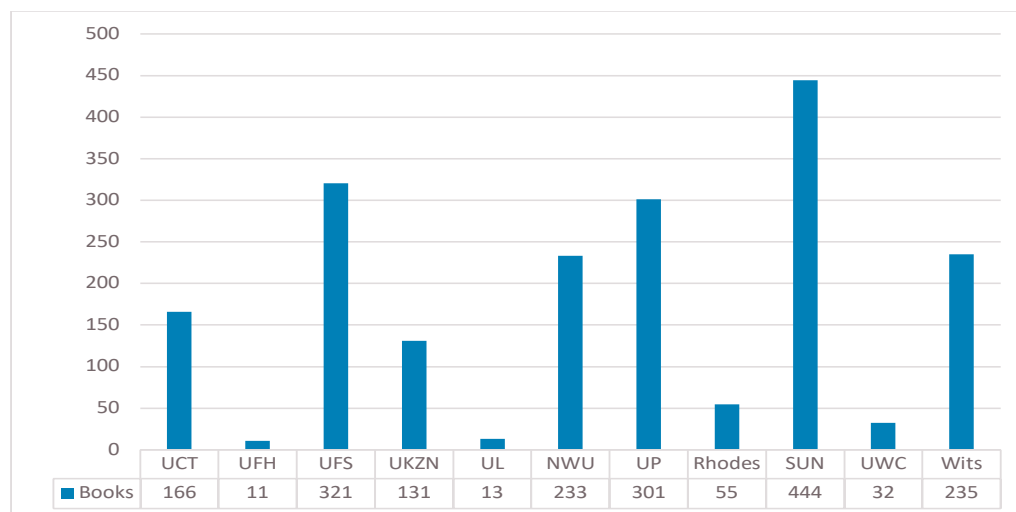


Figure 129: Journal article outputs per Comps

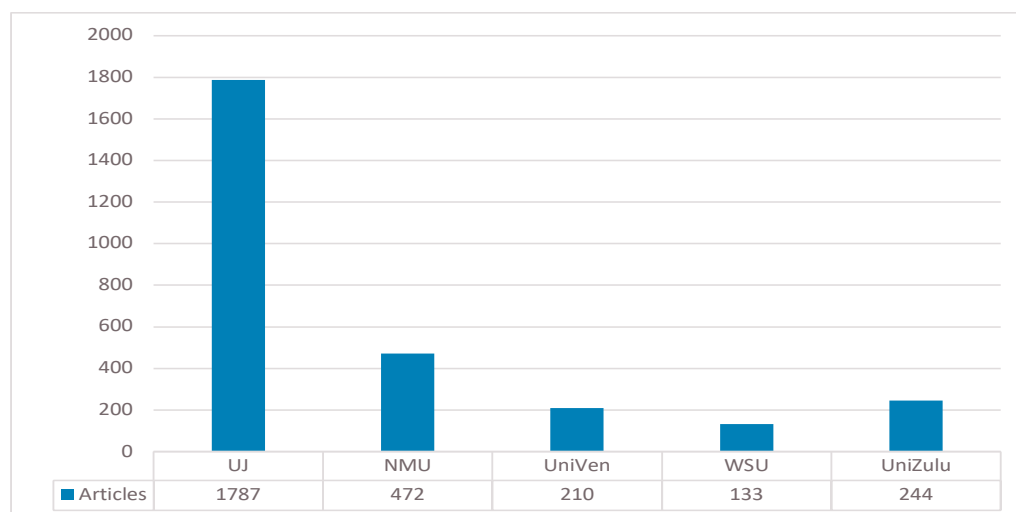


Figure 130: Conference outputs per Comps

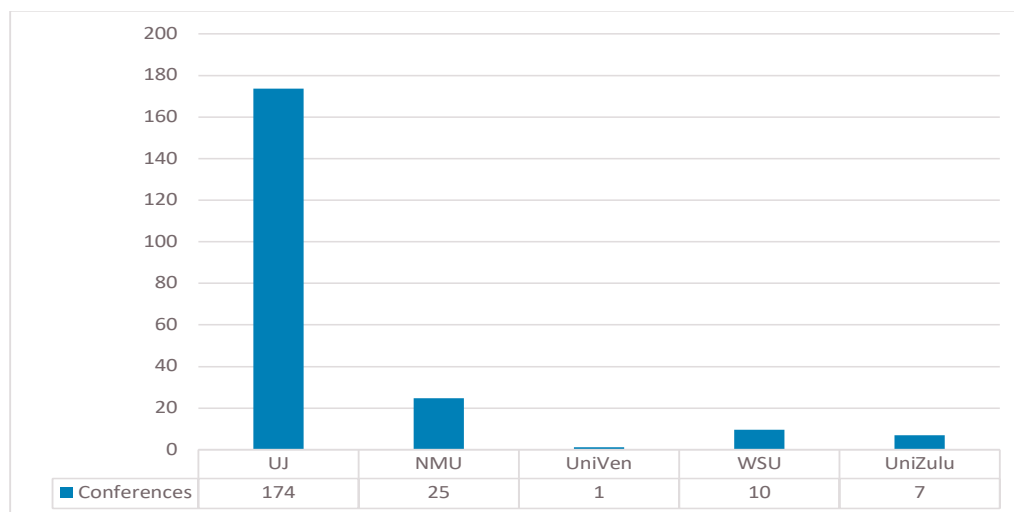


Figure 131: Book and book sections outputs per Comp

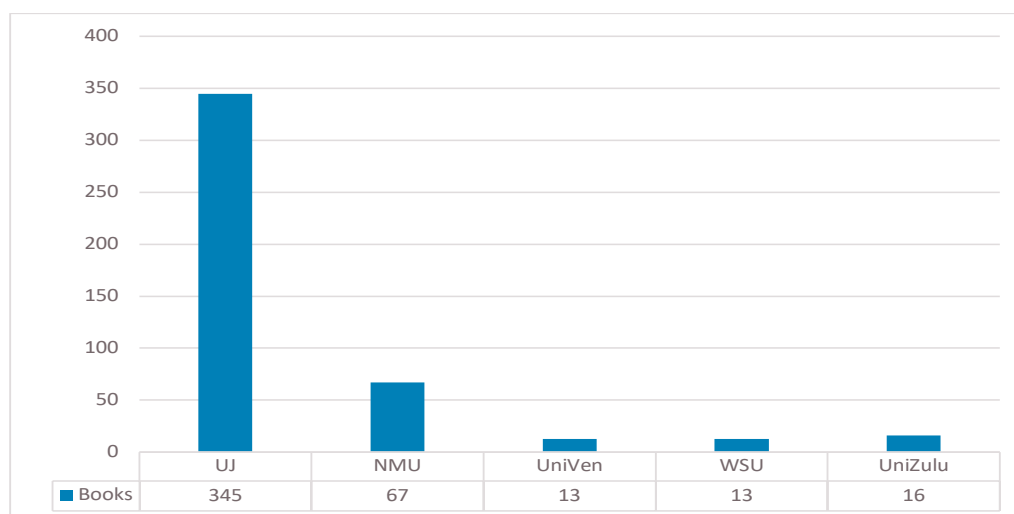


Figure 132: Journal article outputs per UoT

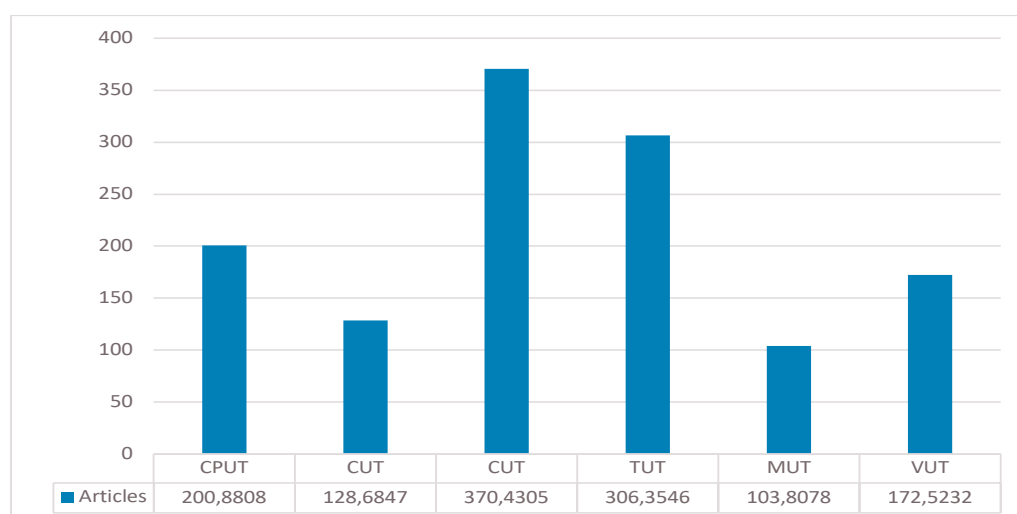


Figure 133: Conference outputs per UoT

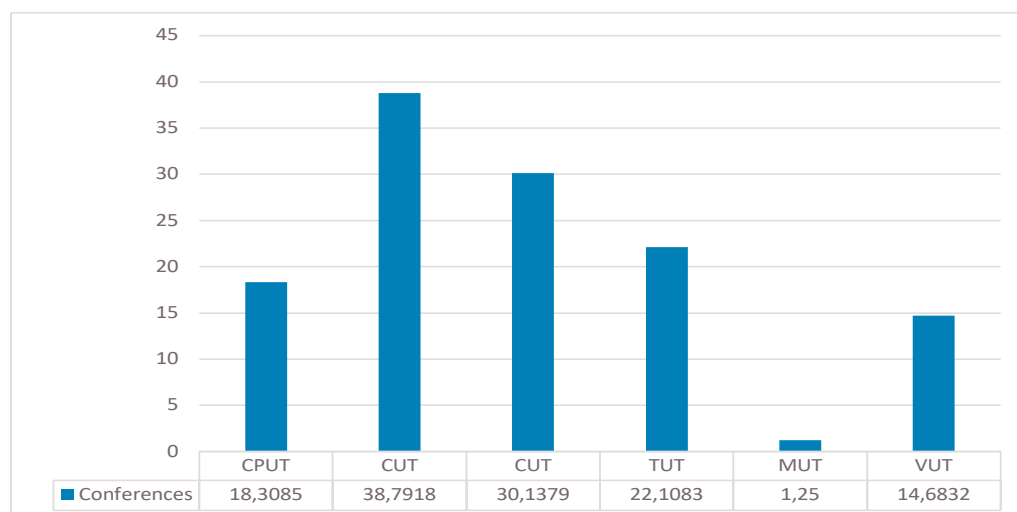
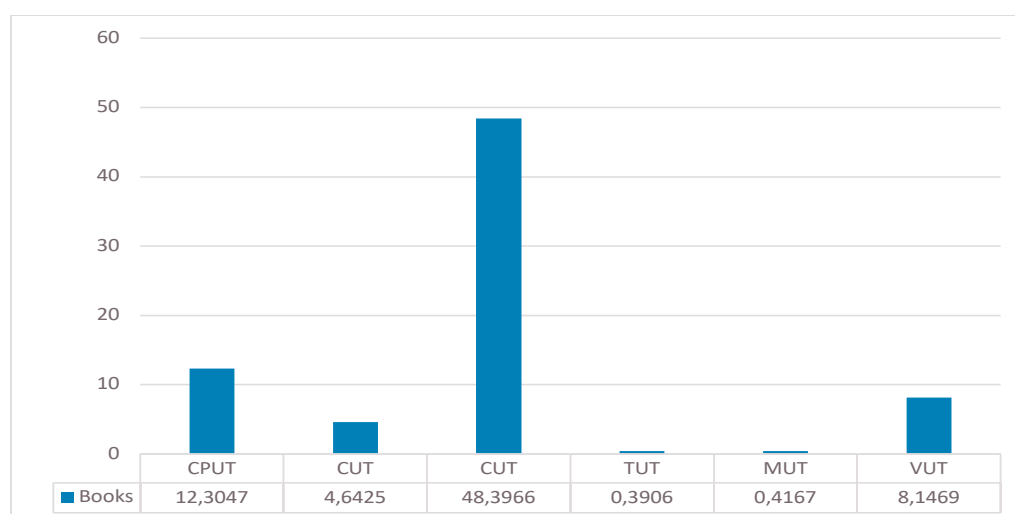


Figure 134: Book and book sections outputs per UoT



Appendix 1:

Institutions by institutional type

Traditional Universities

North-West University (NWU)
 Rhodes University (RU)
 University of Cape Town (UCT)
 University of Fort Hare (UFH)
 University of the Free State (UFS)
 University of KwaZulu-Natal (UKZN)
 University of Limpopo (UL)
 University of Pretoria (UP)
 University of Stellenbosch (SU)
 University of the Western Cape (UWC)
 University of the Witwatersrand (Wits)

Comprehensive Universities

Nelson Mandela University (NMU)
 Sefako Makgatho Health Sciences University (SMU)
 Sol Plaatjie University (SPU)
 University of Johannesburg (UJ)
 University of Mpumalanga (UMP)
 University of South Africa (UNISA)
 University of Venda (UV) or (UNIVEN)
 University of Zululand (UZ)
 Walter Sisulu University (WSU)

Universities of Technology

Cape Peninsula University of Technology (CPUT)
 Central University of Technology (CUT)
 Durban University of Technology (DUT)
 Mangosuthu University of Technology (MUT)
 Tshwane University of Technology (TUT)
 Vaal University of Technology (VUT)

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