Mangosuthu
University of Technology

Graduate Survey Report 2019

VISION

The vision of Mangosuthu University of Technology (MUT) is to be a pre-eminent higher education institution of technology that fosters socio-economic advancement through the scholarships of teaching and learning, applied research, technology development and transfer and community engagement.

MISSION

Our mission is to provide advanced, technology-based programmes and services that are career- and business-oriented in the broad fields of engineering, natural and Management Sciences for the uplift of talented but mainly disadvantaged individuals. By so doing, the University shows its commitment to social redress. It contributes to creating an equitable and prosperous Southern Africa in which individuals have the opportunity to achieve their full potential

OUR CORE PURPOSE

To contribute to the advancement of technology-based education and training that will strengthen the skills and competitiveness of South Africa in the 21st Century.

CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

BTech	Baccalaureus Technologiae
ECP	Extended Curriculum Programme
ICT	Information and Communication Technology
MARCOMMS	Marketing and Communications Department
MUT	Mangosuthu University of Technology
QMD	Quality Management Directorate
WIL	Work-Integrated Learning

HISTORICAL BACKGROUND AND CONTEXT

Dr Mangosuthu Buthelezi together with the Chairperson of Anglo American and De Beers Consolidated Mines, conceptualized the idea of establishing a tertiary educational institution specialising in technical subjects in 1974. In support of this, the Southern Africa Labour and Development Research Unit (SALDRU) of the University of Cape Town conducted an investigation into the need for the training and employment of technicians in South Africa. The investigation revealed the need for more technicians in industry. Based on this, the Anglo American and De Beers Groups Chairperson's Fund provided the initial funds to build the Technikon. The funding was supplemented by companies such as Mobil Oil, AECI, the S.A. Sugar Millers' Association, the Rembrandt and Distillers Corporation, LTA Limited, Sasol and among others. This enabled the Technikon to establish Schools for Chemical Engineering, Mechanical Engineering, Electrical Engineering, Civil Engineering and Building, and Business and Secretarial Studies. The construction of the Technikon in Umlazi culminated in 1979 when it opened its doors for teaching and learning. The Technikon moved into its main buildings in its current location upon completion in September 1981.

In November 2007, the Mangosuthu Technikon was renamed the Mangosuthu University of Technology in accordance with the National Higher Education legislation.

1. Overview

The Quality Management Directorate (QMD) conducts a graduate survey annually to solicit graduates' views on a number of issues related to their overall experiences and the quality of provision at Mangosuthu University of Technology (MUT) during their entire period of study. These graduate surveys are conducted as part of the broader aim of improving the students' experiences and the quality of provision in the University's three Faculties: Engineering, Natural Sciences and Management Sciences. The Graduate Survey reported on here was conducted from 09 April to 13 April 2019. The survey also seeks to establish the employability of graduates and the fields they are employed in.

1.1 Objectives of the Survey

The initiative to survey graduates' opinions is informed by the understanding that students' views and experiences are important and should be taken into consideration in the planning and operations of the University with a view to effect improvements and enhance the institution 's provision. Using the responses in this graduate survey report, key areas can be targeted in order to improve the teaching and learning processes in the University.

The objectives of the graduate survey therefore are:

- To establish graduates' experiences regarding the facilities in the university
- To solicit feedback regarding graduates' teaching and learning experiences;
- To establish how graduates, rate the university as a teaching and learning institution;
- To establish graduates' employability by industry and their preparedness for the world of work;
- To establish the number of students who are undertaking further studies after completing their first qualification;
- To gain the graduates' opinions regarding the education and training that the University provides; and
- To provide feedback on the survey results to the University community for reflection and action.

1.2 Methodology

The graduate survey used the mixed approach to solicit information from the graduates. Both the quantitative and qualitative questions were used. The rationale is to obtain as much information as possible in order to understand the views of the graduates regarding the provision of the University. Questionnaires were handed out to graduates by personnel from the Quality Management Directorate (QMD) a week before the graduation ceremony and on the morning of each graduation ceremony. The 2019 graduation ceremony took place from the 09 April 2019 to 13 April 2019. Graduates who received the questionnaires were informed that their participation was voluntary and were however requested to participate in the survey.

The questionnaire was divided into three sections:

- biographical details and background information (quantitative responses);
- study experiences (quantitative responses); and
- areas for improvement (qualitative responses).

1.3 Data Analysis

A two pronged approach was used in the analysis of the data. The analysis was done at both departmental and faculty level. The quantitative responses were summarised and reported according to the number of respondents who selected a particular answer. The qualitative responses were grouped into six themes, namely: Physical Resources, Human Resources/Delivery, Curriculum / Teaching and Learning, Campus Activities, WIL and Safety. The Evasys system was used to do the data analysis.

Table 1: Faculties and departments offering academic programmes

FACULTY OF MANAGEMENT SCIENCES	FACULTY OF ENGINEERING	FACULTY OF NATURAL SCIENCES
Departments	**Departments**	**Departments**
1. Accounting and Law 2. Human Resource Management 3. Marketing 4. Office Technology 5. Public Administration and Economics	1. Chemical Engineering 2. Civil Engineering and Survey 3. Construction Management and Quantity Surveying 4. Mechanical Engineering 5. Electrical Engineering	1. Agriculture 2. Biomedical Sciences 3. Chemistry 4. Environmental Health 5. Information and Communication Technology 6. Nature Conservation 7. Community Extension

1.4 Report Structure

The report is structured into two parts. The first part of the report presents the faculty level analysis beginning with the biographical data, then study experience of graduates, followed by their employment status. The study experiences focus on aspects/variables such as acquisition of knowledge and skills, standard of work, feedback, resources, readiness for the world of work motivation to study further, and student activities on campus among others.

The second part of the report presents the analysis of the data at departmental level. First the respondents' academic profile, participation rate, year of entry of the graduates into the University and graduates engaged in further studies. This is followed by the current employment profile of participants and the study experience of the participants, which looks at aspects/variables such as acquisition of knowledge and skills, standard of work, feedback, resources, readiness for the report culminates in the qualitative section listing graduates' opinions and suggestions **(unedited)** for the improvement of the student experience at MUT and the conclusion to the report.

2. Profile of Respondents

2.1 Academic Profile of Graduates

The total number of graduates in 2019 was 2617. This means that there were 256 more graduates than the 2361 in 2018. This indicates an increase of 10% in the number of graduates. Of the 2617 graduates in 2019, 1936 participated in the survey, indicating a participation rate of 74%. This shows a decrease of 5% compared to the 79% participation rate in 2018. This could be attributed to the high number of parents who were observed fetching the graduation documents for their children.

The breakdown of the overall number of graduates in 2019 is as follows: 349 students accessed the diploma programmes through bridging programme (Pre-tech); 207 students accessed the programmes studied via the Foundation (ECP) programme and 2031 registered through mainstream programmes. The majority of graduates, 2307 obtained their National Diploma qualification. One hundred and forty-four (144) graduates obtained their Bachelor of Technology (BTech) qualification; 127 graduates achieved Advanced Diploma qualification; 33 graduates achieved Postgraduate Diploma qualification and 6 obtained Master's qualification (refer to Figure 1 below).
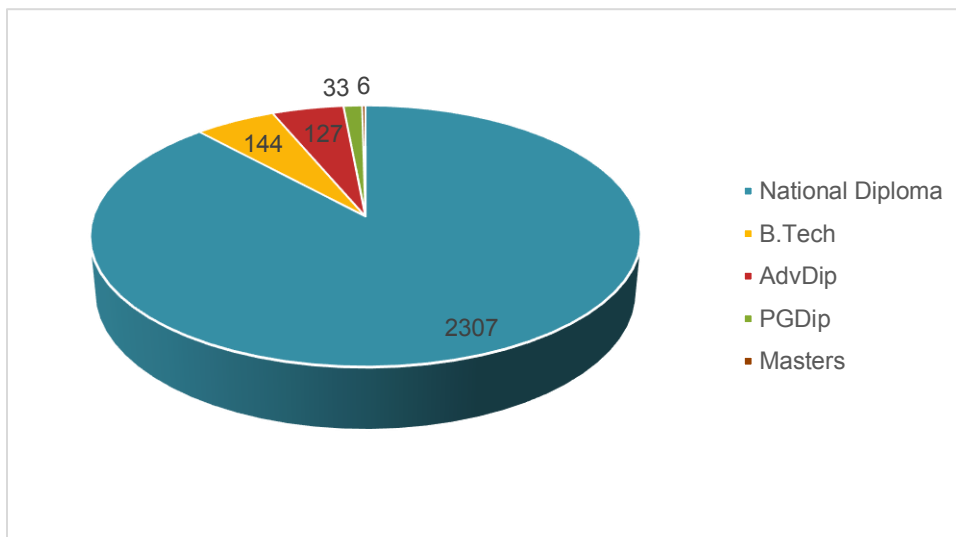
Figure 1: Qualification types (overall)

2.2 Overall participation rate

Figure 2 below depicts graduation numbers and participation rates in all the three facultis.
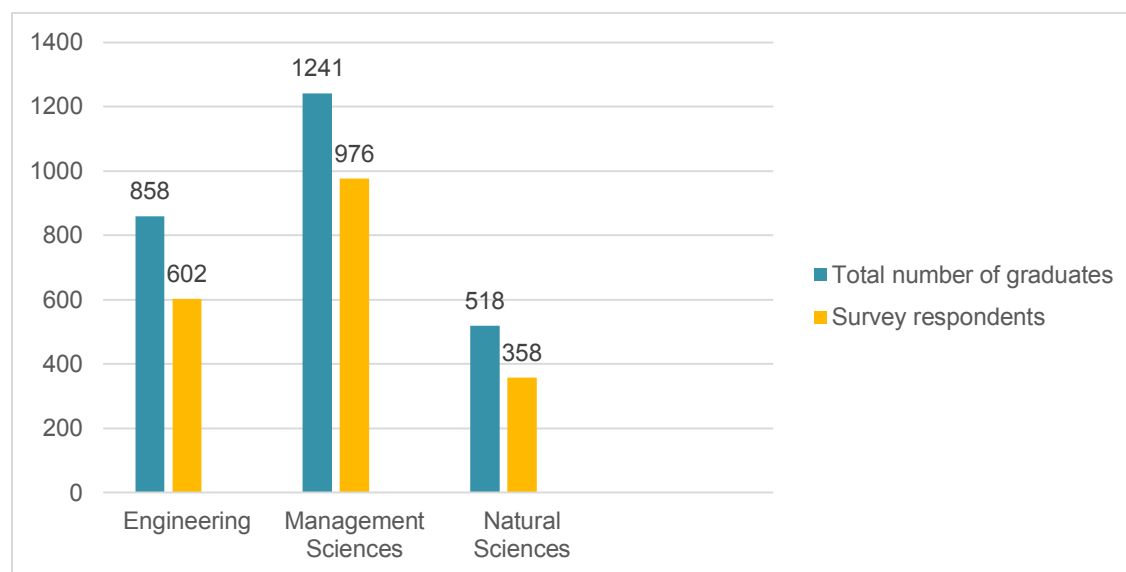
Figure 2: Graduates and respondents per faculty

2.3 Comparative analysis for 2018/2019

Comparatively the largest participation rate in the survey was in the Faculty of Management Sciences, 79%, followed by the Engineering faculty, 70%, and lastly the faculty of Natural Sciences, 69%.

Table 2: Graduates, respondents and participation rate per faculty

Faculty	Number of Graduates		Number of Respondents		Participation rate %	
	2018	2019	2018	2019	2018	2019
Engineering	785	858	608	602	77.5%	70%
Management Sciences	1099	1241	885	976	80.5%	79%
Natural Sciences	477	518	372	358	78%	69%
Total	2361	2617	1865	1936	79%	73%

3. An analysis of the survey per faculty- Faculty of Engineering

3.1 Participation rate in the Faculty of Engineering per department

In the Faculty of Engineering, 602 graduates participated in the survey in 2019 out of the total number of 858 graduates. Figure 3 below is the data illustrating the participation rate per departments in the faculty of Engineering. The majority of the graduates obtained the National Diploma qualification, 97%, and 1,8% obtained the BTech qualification. The majority of the graduates 98.7% were African and only 0.2% were other races.
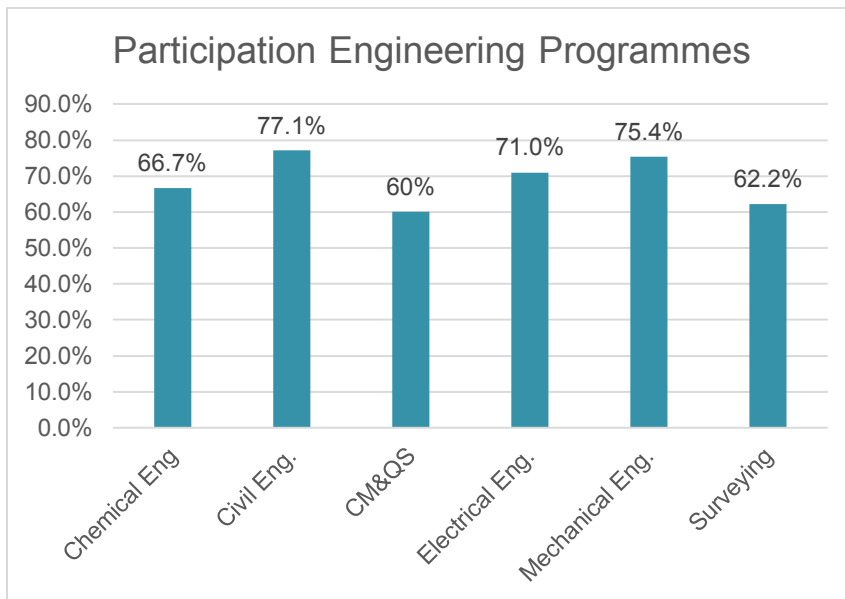
Figure 3: The participation rate per department (Faculty of Engineering)

The graph above shows that departmentally, in the Faculty of Engineering, the participation rate was very high. In all departments the participation rate, when considering those who participated, is 60% and above.

3.2 Streams into Engineering programmes

Figure 4 below illustrates the access pathways into the Engineering faculty. 60.9% of graduates got into the Engineering faculty through the Pre-Tech route, 21.8% through the mainstream route and 10.6% through the ECP route.
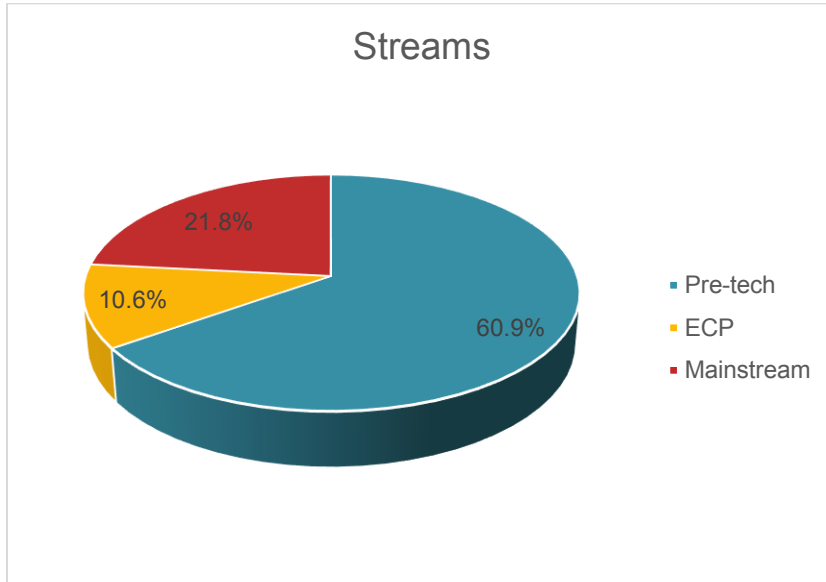
Figure 4: Streams followed into Engineering programmes

3.3 Gender split in the Faculty of Engineering

Of the 602 graduates who participated in the graduate survey in 2019 in the Faculty of Engineering the gender split is 60.4% male, 37.9% female and 0.3% other. The data shows that the Engineering Faculty attracts more males than female students. Figure 5 below illustrates this gender split.
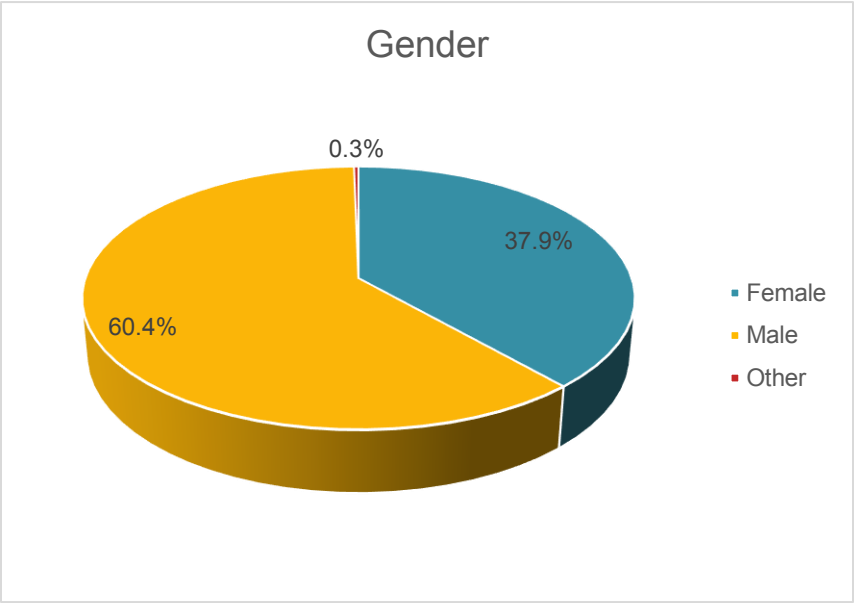
Figure 5: Gender split (Faculty of Engineering)

3.4 Age categories of participants and country of origin – Faculty of Engineering

Of the 602 that participated in the Faculty of Engineering, the majority of the graduates fall within the following age categories: 18-25 (47.1%); 26-35 (47.3% and the rest fall within the 36-50 (3.25 and more than 50 (0.2%). The majority of the 602 participants were South Africans, 96.3%.; 1% came from Swaziland 0.3% came from Angola.
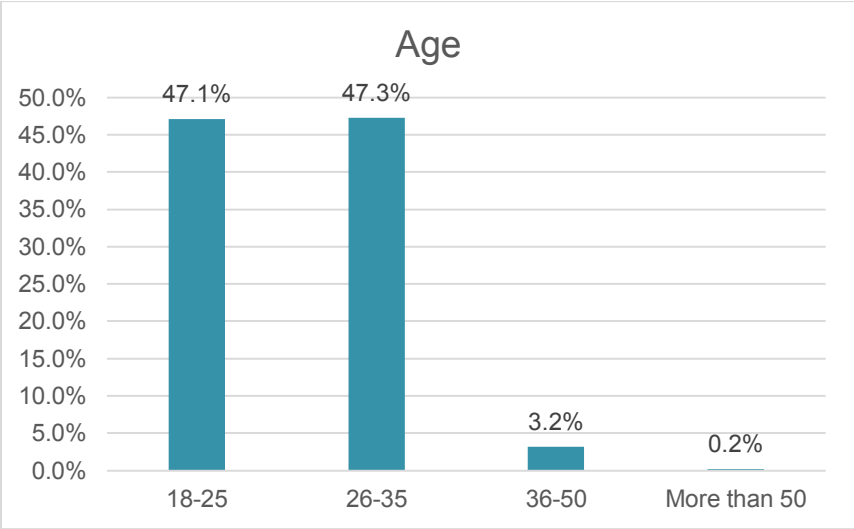
Figure 6: Age of respondents in Faculty of Engineering
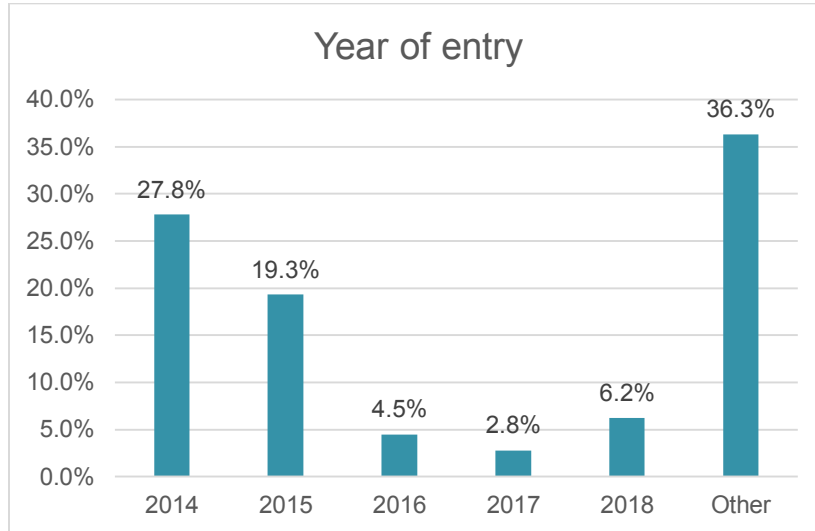
Figure 7: Year of entry of respondents in Engineering

The National Diploma offered in the faculty is a three-year qualification. The data above shows that students who entered the university in 2014, 2015 and 2016, 52%, and only graduated in 2018 took more than three years to complete the three-year diploma.

3.5 Province of origin

The 602 graduates who participated in the Graduate Survey in the Faculty of Engineering, the majority 87% came from the province of KZN, followed by 5.2% from Eastern Cape.

The data above indicates that the University is attracting mostly students from the province of KwaZulu-Natal. The conclusion is that the university therefore does not provide them with a diverse university experience with regards to existing and studying with people from diverse backgrounds and cultures.

3.6 Current employment status of participants

The 2019 graduate survey also sought to establish the employment status of participants. At the time of conducting the graduate survey, 2019, among the 602 participants in the Faculty of Engineering their then employment status was that 37.1% were employed; 49.8% unemployed; 3% self-employed and 9.7% were studying further. Figure 8 below illustrates the employment status of the participants, in the Faculty of Engineering, at the time of conducting the survey.
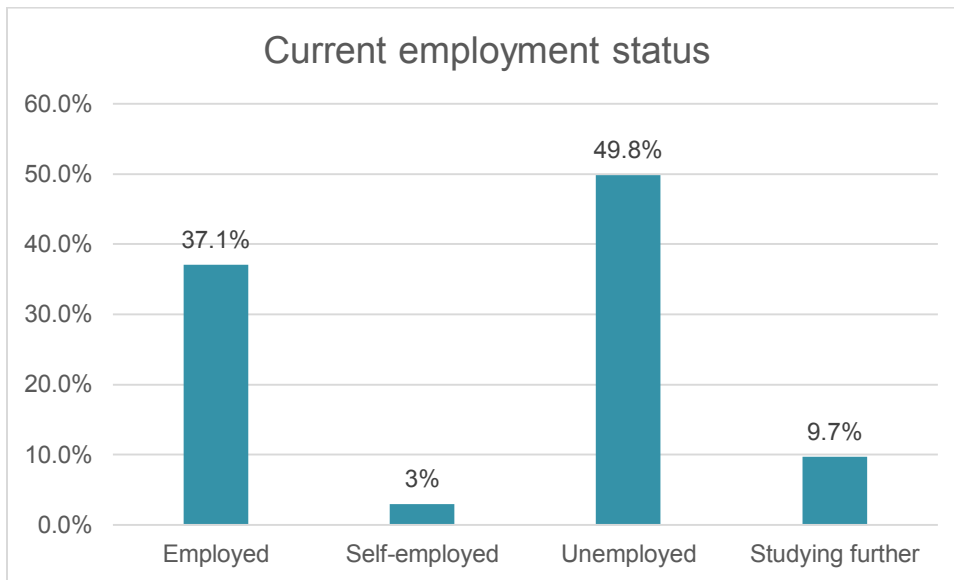
Figure 8: Current employment status of respondents in the Engineering Faculty

As this is a Faculty of Engineering the graduates obtained technical Engineering skills, yet, of the 602 graduates who took part in the study, only 37.1% were employed and 49.8% were unemployed. At least 3% were self-employed and 9.7% were studying further. Considering that only 9.7% were studying further. The data then shows that the majority of graduates (49.8%) were not gainfully engaged either working or studying. The level of entrepreneurship among the graduates who took part in the study is also very low at 3%.

3.7 Manner of recruitment for those employed

From the University perspective it is critical to establish how those who were employed got into their employment. For those employed 35.4% were employed in a field related to their field of

study; 5.7% were employed in a field not related to their field of study and 34.3% indicated that the question did not apply to the respondents.

3.8 Manner of recruitment

Graduates who participated in the survey and are employed got into their positions through two main methods- personal contacts, 12% and 16.6% through job advertisements. Work Integrated Learning (WIL) only attributed 4% to securing employment to graduates. The University's strength is its positioning of WIL as an integral part of training students. It is therefore a matter of concern that WIL contributes only 4% to securing employment to graduates. It means that the majority of students who were placed in companies are not eventually absorbed in those companies.
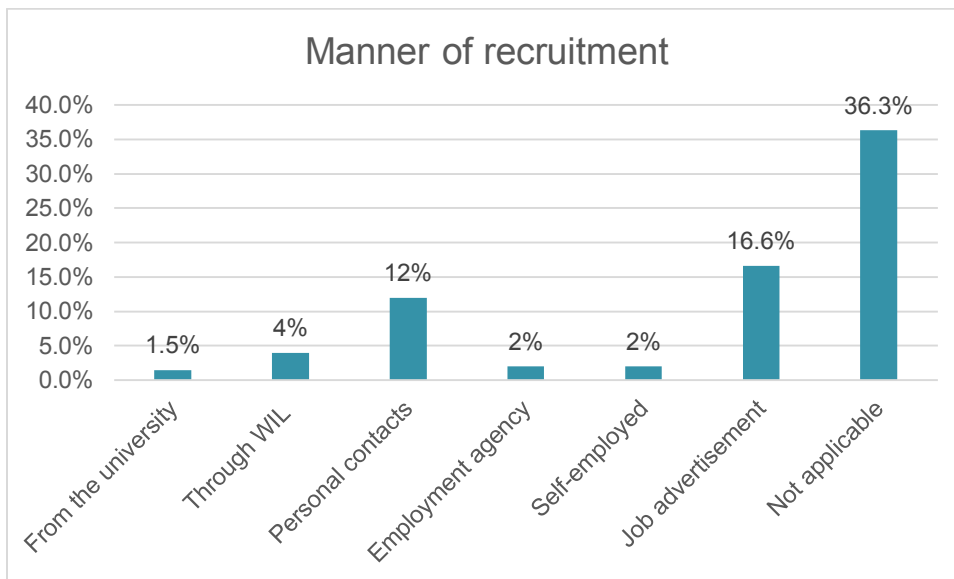
Figure 9: Manner of recruitment of respondents in Engineering Faculty

3.9 Reasons for unemployment

The survey further sought to establish the reasons for being unemployed from those who were unemployed. Figure 10 below illustrates the various reasons offered by participants for their unemployed status at the time of conducting the study. The main reasons cited by unemployed graduates from the University as the data show is – no opportunities for employment (32.3%), followed by - (14,5%) could not find work related to my field and then 6.2% studying further. Of concern here is that while there is a large number of graduates who are unemployed (49,8%), there is a low number of students who are furthering their studies (6.2%).
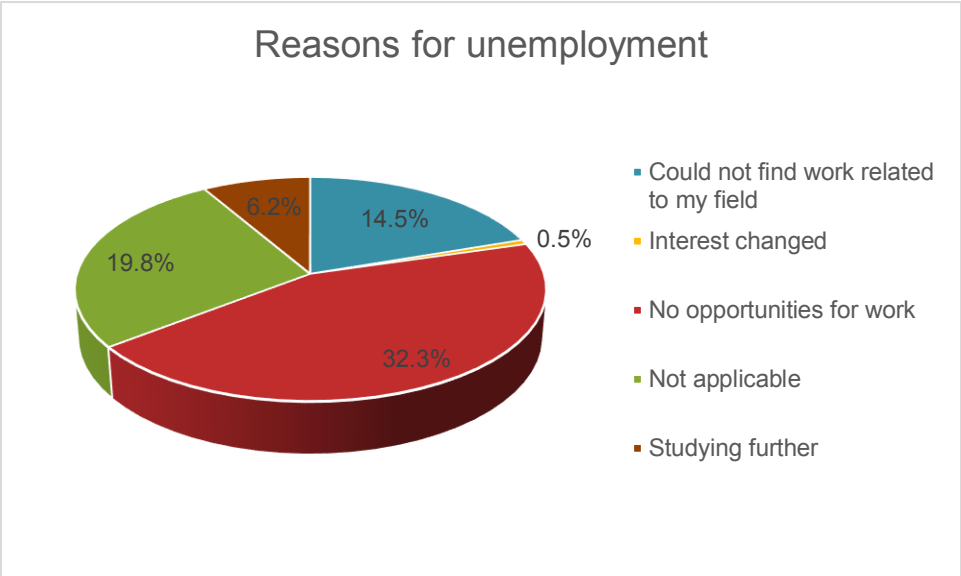
Figure 10: Reasons for unemployment for respondents in the faculty of Engineering

3.10 Further study

Among those unemployed participants were graduates, who indicated that they were studying further (6. 2%).However, overall 72.9% of the participants in the faculty indicated that they were not studying further. Of those studying, 14.5% were studying full time while 8% were studying part time. Figure 11 below illustrated the percentage split.
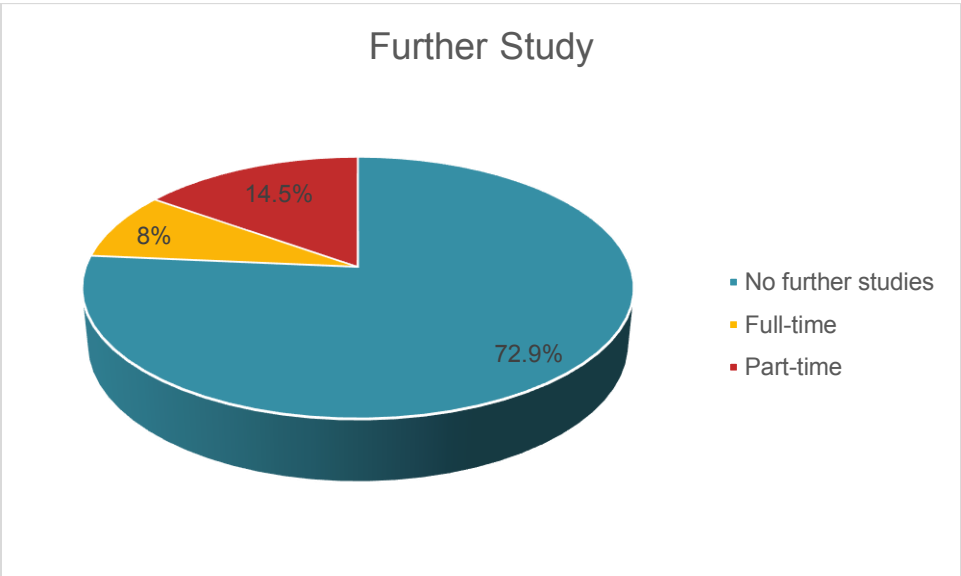
Figure 11: Further studies by respondents in Engineering Faculty

3.11 Overall university experience Faculty of Engineering

The overall university experience was solicited from participants in the survey through a number of variables covering a wide range of fields/aspects of university life and study. Thematically, the various aspects covered teaching and learning experience; teaching and learning resources; general facilities on and off campus. Figures 12-15 outline respondents' views about the various aspects of their experience at MUT during their stay in the University as students.

In the Faculty of Engineering the majority of students agreed with the various variables that were in the questionnaire followed by – strongly agreed- meaning that respondents rated the various variable higher on – **agree rating** followed by **Strongly agree** rating of the various variables.

Respondents' study experience	Standard of Work	Work Confidently	Communication Skills	Study further	Further programmes
Strongly Disagree	0.7%	0.4%	0.2%	1.3%	15.1%
Disagree	0.7%	1.6%	2%	4.3%	25.2%
Agree	65.2%	51.2%	50.8%	50.9%	37.8%
Strongly Agree	33.3%	46.8%	47%	43.5%	21.9%
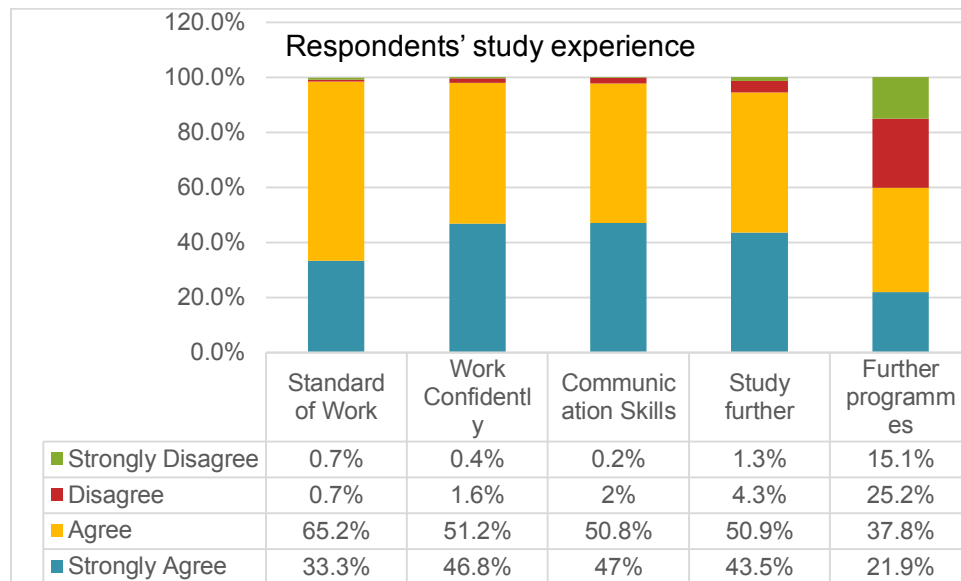
Figure 12: Respondents' study experience (Engineering Faculty)

Respondents' study experience

	Teaching and Learning materials appropriate	Lecturers' Motivations	Library Resources	Lecture venues appropriate	Safety and security provided
Strongly Disagree	0.2%	0.9%	2.8%	1.6%	0.7%
Disagree	3.2%	3.2%	8.9%	7%	4.6%
Agree	60%	48.6%	59.9%	60.6%	68.1%
Strongly Agree	36.6%	47.3%	28.4%	30.8%	26.6%
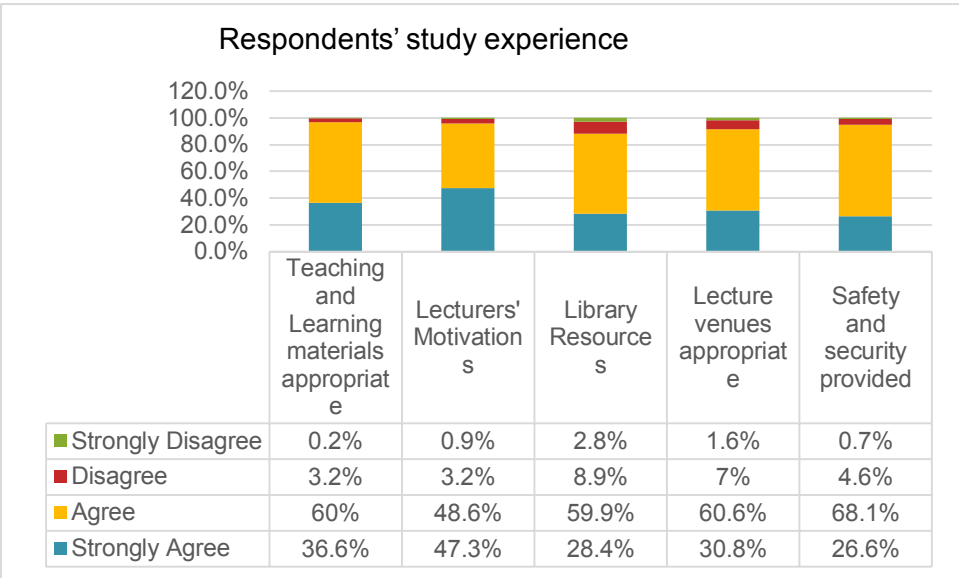
Figure 13: Respondents' study experience (Engineering Faculty)

Respondents' study experience

	Conducive environment for studying	Wifi Accessible	Sufficient study space provided	Positive experiences at residences	Transport to and from residence on time
Strongly Disagree	0.4%	9.4%	1.6%	2.0%	8.1%
Disagree	3.5%	30.3%	9.7%	7.1%	22.7%
Agree	66.5%	45.7%	64.4%	66%	50.7%
Strongly Agree	29.7%	14.5%	24.2%	24.9%	18.6%
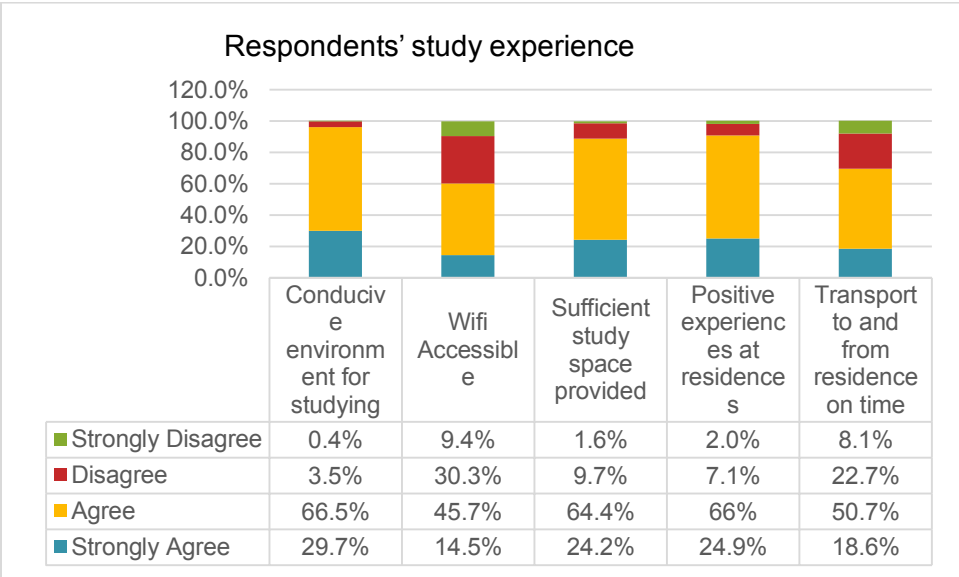
Figure 14: Respondents' study experience (Engineering Faculty)

Respondents' study experience

	Clinic facilities are adequate	Adequate counselling facilities	Adequate sports facilities	Overall satisfaction with study experiences	Recommend anyone to study at MUT
■ Strongly Disagree	3%	1.5%	2.2%	0.9%	0.5%
■ Disagree	8.5%	7.3%	10.8%	2.3%	3.7%
■ Agree	68.8%	72.2%	67.1%	53.5%	47.1%
■ Strongly Agree	19.7%	19.1%	19.9%	43.2%	48.7%
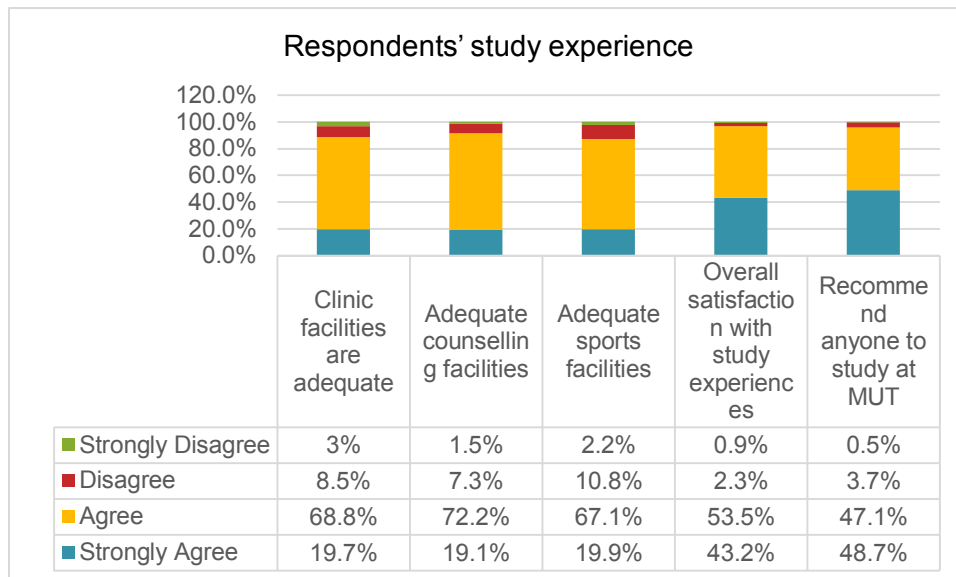
Figure 15: Respondents' study experience (Engineering Faculty)

4. DEPARTMENTAL ANALYSIS FACULTY OF ENGINEERING

This section focuses on departmental analysis of the Graduate Survey in the Faculty of Engineering. The idea is to zoom in on every department to assess/establish how the various departments in the Faculty fared regarding the various aspects of the questionnaire. To establish context, figure (2) on page 8 above depicts the number of graduates per faculty and the number of the graduates that participated in the survey for all three faculties.

4.1 Qualifications obtained in Engineering

Figure 16 below is an analysis of the various qualifications obtained per programme.
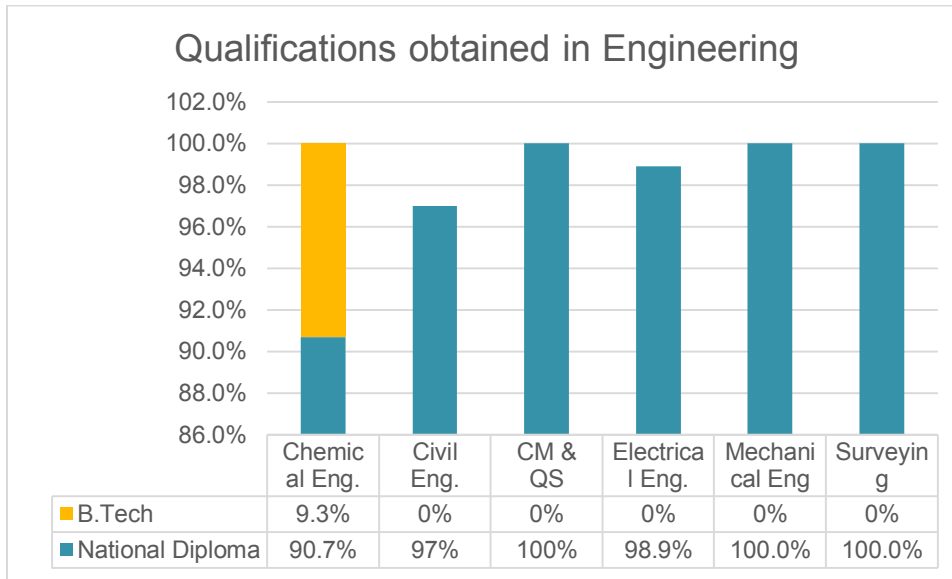
Figure 16: Qualifications obtained per programme in Engineering

The data above shows that in the Engineering Faculty the majority of the programmes do not have post diploma programmes for further study for the graduates. Only Chemical Engineering has a BTech programme. This accounts to some extent to the low level of students who are studying further in the Faculty of Engineering -72.9% of the participants were not studying further.
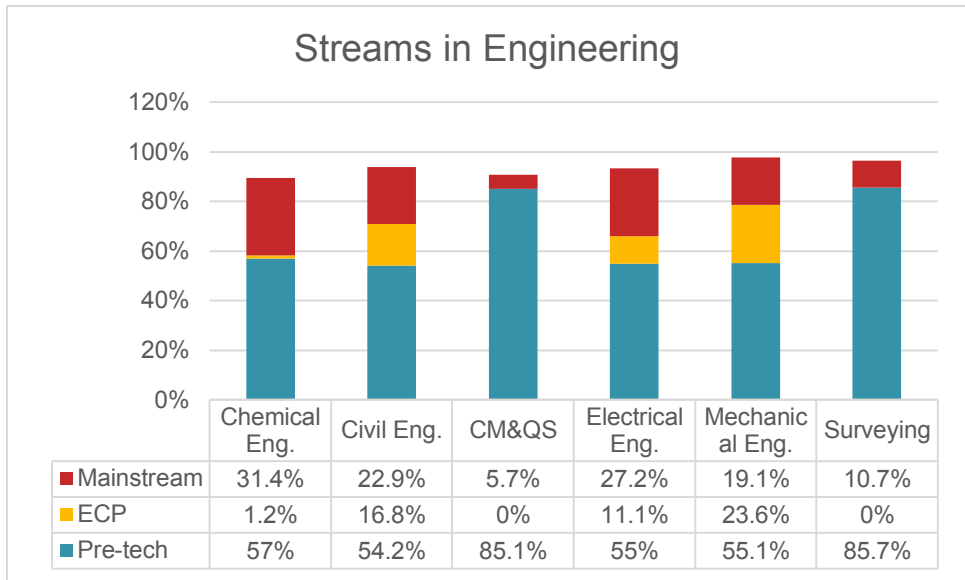
Figure 17: **Streams followed per programme in Engineering**

The data above shows a scenario where students get into the Engineering programmes mainly through the Pre-Tech route (56%) followed by the Mainstream route (20%) and lastly through the ECP route (9%). This means that the uptake of the ECP route is lower compared to the Pre Tech and the Mainstream routes.

4.2 Year of entry into Engineering programmes

Figure 18 below depicts the year of entry for participants in the survey per department in the faculty of Engineering.

Year of entry

	Chemical Eng.	Civil Eng.	CM&QS	Electrical Eng.	Mechanical Eng.	Surveying
Other	34.9%	38.9%	28.7%	34.4%	50.6%	17.9%
2018	12.8%	4.6%	2.3%	5%	9%	3.6%
2017	2.3%	0.8%	1.1%	5%	3.4%	3.6%
2016	5.8%	4.6%	5.7%	4.4%	1.1%	7.1%
2015	17.4%	13%	36.8%	17.2%	12.4%	36.7%
2014	24.4%	32.8%	25.3%	30%	22.5%	25%
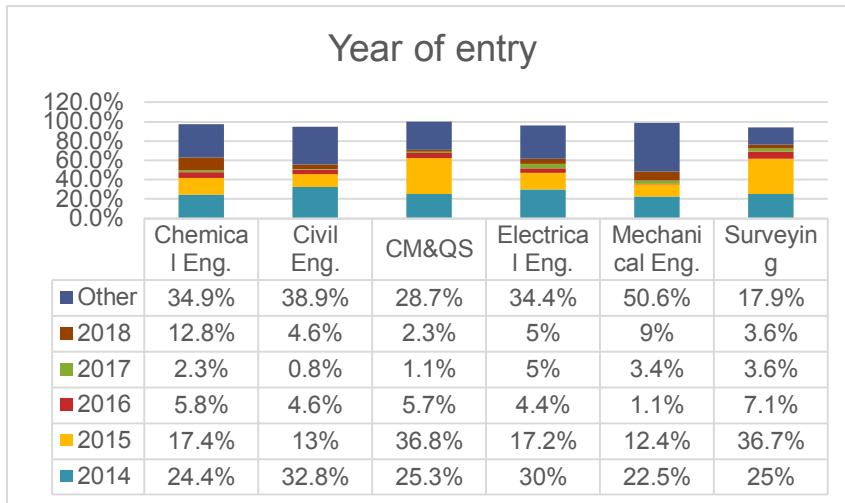
Figure 18: Respondents' year of entry per programme in Engineering
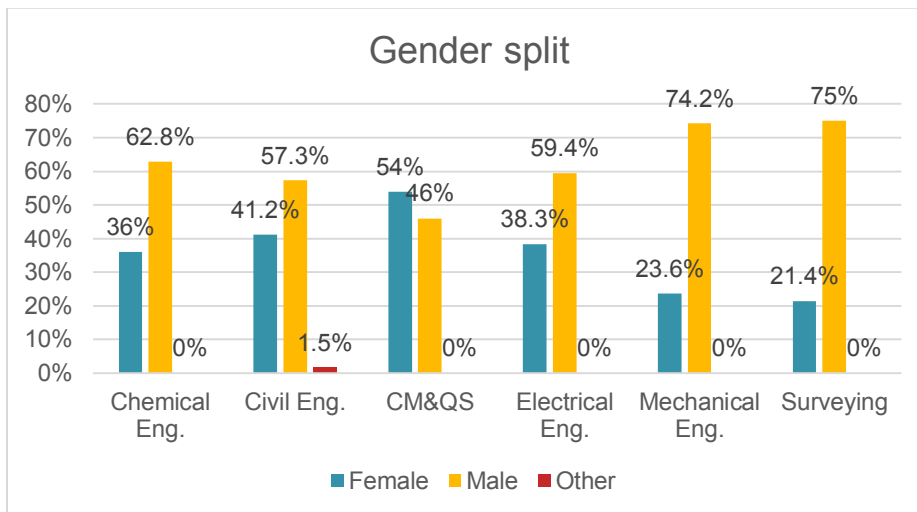
Figure 19: Gender split in the Faculty of Engineering programmes

In section A (faculty analysis) of the survey report it was established that the faculty attracts more male (60.4%) students than female (37.9%) students. This information is reflected in the various departments in the faculty of Engineering. Out of six (6) departments, only one (1), Department of Construction Management and Quantity Surveying has more female (54%) students than male (46%).Figure 19 above illustrates the gender split in the various departments in the Faculty of Engineering.

4.3 Age categories in the Faculty of Engineering Per Department

Age	Chemical Eng.	Civil Eng.	CM&QS	Electrical Eng.	Mechanical Eng.	Surveying
■ 18-25	46.5%	44.3%	59.8%	43.9%	44.9%	50%
■ 26-35	47.7%	45%	39.1%	51.1%	51.7%	42.9%
■ 36-50	4.7%	6.1%	1.1%	1.1%	3.4%	3.6%
■ More than 50	0%	0.8%	0%	0%	0%	0%
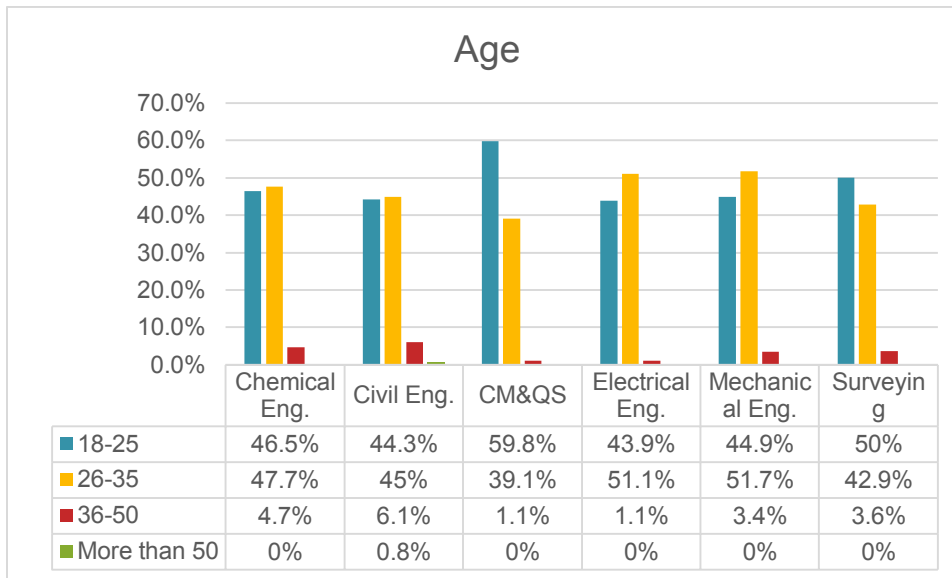
Figure 20: Age categories of respondents' in the Faculty Engineering programmes

The bulk of the students in the Faculty are in the age category of 18-25 (41%) followed by 26-35 age category (46%) as data in figure (20) above depicts.

4.4 Race, Country and Province of respondents' in Engineering programmes

The University overwhelmingly attracts Black African students in the faculty of Engineering and overwhelming come from South Africa and from the province of KwaZulu-Natal. See Figure 21 below. The faculty attracts overwhelmingly students from the African section of the population (99%) and attracts a small number of students from the Indian community, 0.8%. In Construction Management& Quantity Surveying, Mechanical Engineering and Surveying all students who participated in the survey were African.
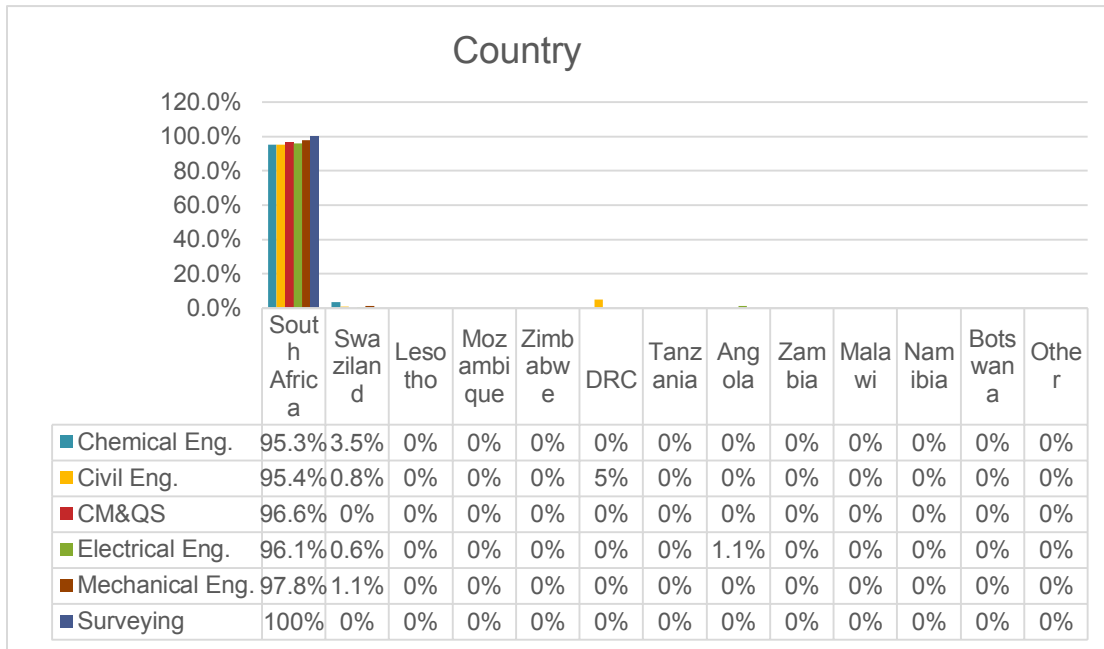
Figure 21: **Respondents' country of origin per programme in Engineering**

	South Africa	Swaziland	Lesotho	Mozambique	Zimbabwe	DRC	Tanzania	Angola	Zambia	Malawi	Namibia	Botswana	Other
Chemical Eng.	95.3%	3.5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Civil Eng.	95.4%	0.8%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
CM&QS	96.6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Electrical Eng.	96.1%	0.6%	0%	0%	0%	0%	0%	1.1%	0%	0%	0%	0%	0%
Mechanical Eng.	97.8%	1.1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Surveying	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

4.5 Current employment status of respondents in Engineering programmes
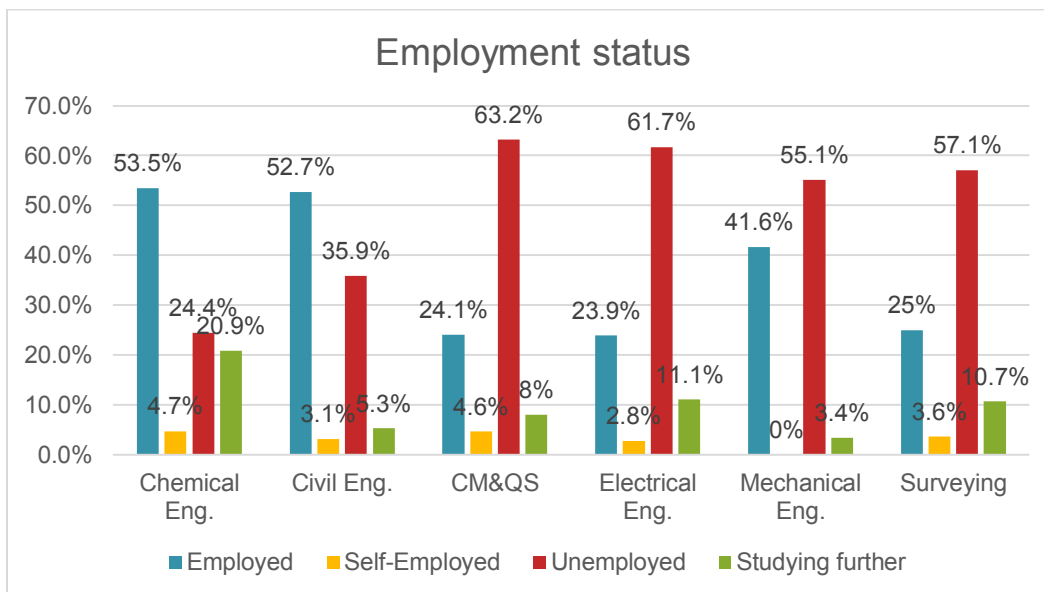
Figure 22: **Current employment status of respondents in Engineering programmes**

In chemical Engineering 53.5% of the participants were employed followed by Civil Engineering with 52.7% and Mechanical Engineering with 41.6%. The programmes that recorded the highest number of unemployed graduates were Construction Management & Quantity Surveying, 63.2%, Electrical Engineering, 61, 7%, Surveying, 57.1% and Mechanical Engineering, 55, 1%.

Overall, in the faculty, of those who participated in the survey, 37% were employed, 49% were unemployed, 3% were self –employed and 6.5% were studying further. Owing to the high number of unemployed graduates, the low number of graduates studying further is concerning. The lack of programmes for further study might be a contributing factor to this. In the faculty of Engineering, 22%, of graduates are meaningfully occupied by way of:

- Study Further – 9,9%
- Self-Employed -19%
- Employed – 37%

While 50% were not meaningfully occupied by being unemployed.

4.6 Manner of recruitment of respondents in each programme in Engineering

Figure 23 below depicts manner of recruitment in the Engineering Faculty (Departmentally).
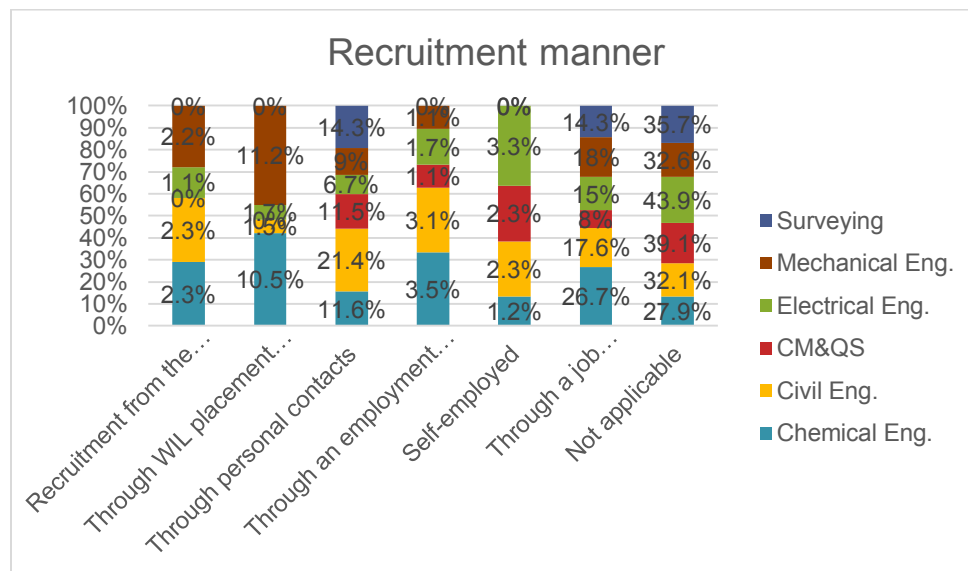
Figure 23: Manner of recruitment of respondents in each programme in Engineering
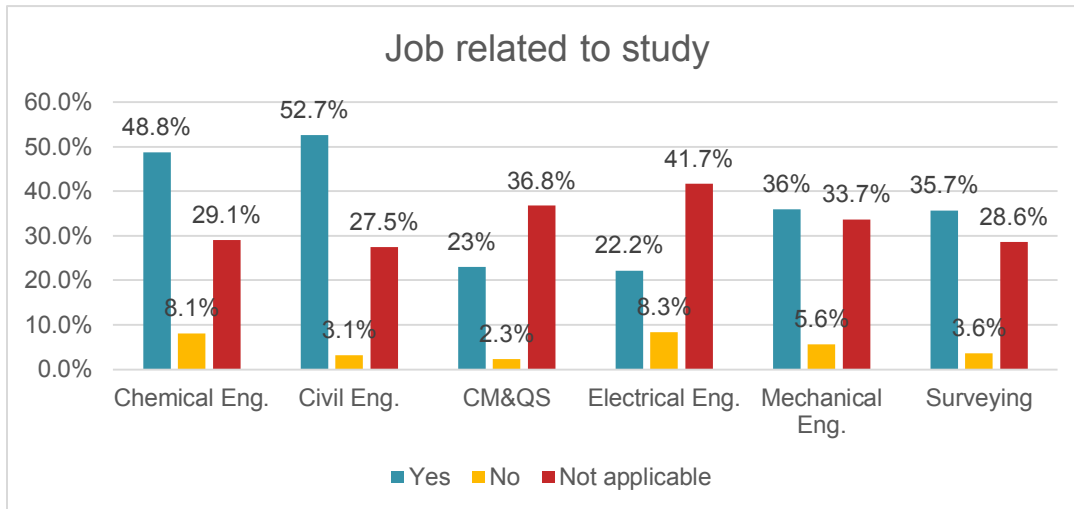
Figure 24: Job related to field of study of employed respondents in Engineering programmes

Of those employed in Civil Engineering, 52.7% were employed in a field related to what they studied, followed by Chemical Engineering, 48%, Mechanical Engineering, 36%, and Surveying 35.7%. In all programmes the number of respondents employed in a field that is not related to what they studied is very low. In Chemical Engineering, 8.1%, were employed in a field not related to what they studied, 3.1% in Civil Engineering, 2, 3% in Construction Management and Quantity Surveying, 5.6% in Mechanical Engineering and 3.6% in Surveying. At least 36% of graduates are employed in fields related to their studies while 5.5% were not.

4.7 Reasons for unemployment of respondents in Engineering programmes
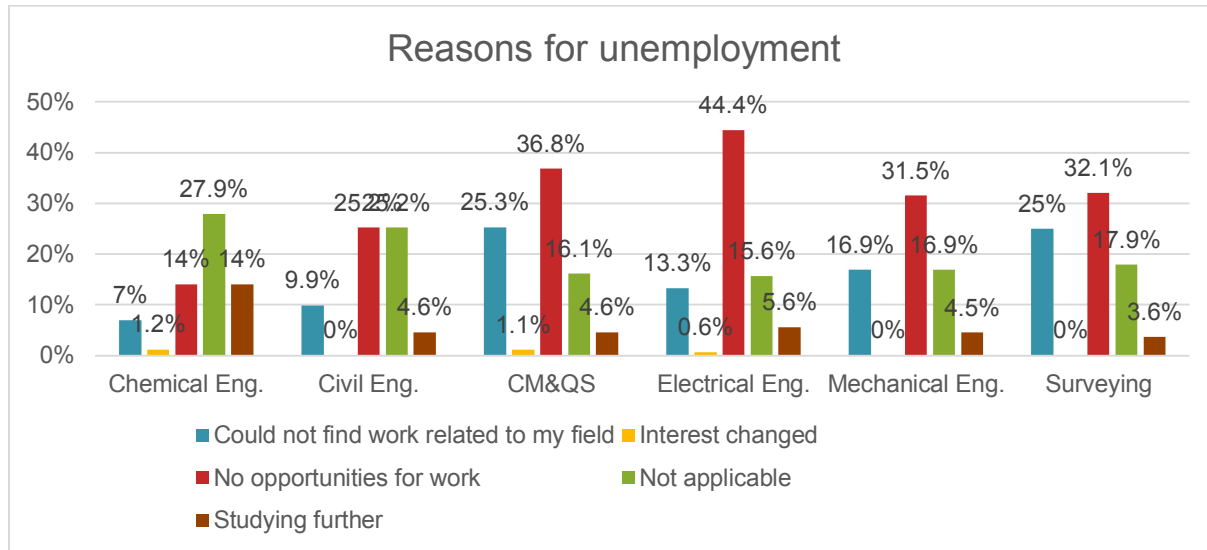
Figure 25: Reasons for unemployment of respondents in Engineering programmes

The above figure 25 shows that for those unemployed the two major reasons offered for being unemployed are: Could not find work, and lack of job opportunities.

The following are reasons provided for unemployment in the faculty of Engineering:

- Could not find work related to my field – 16%
- No opportunities for work – 36%
- Studying Further – 6%
- Interest Changed – 0,4%
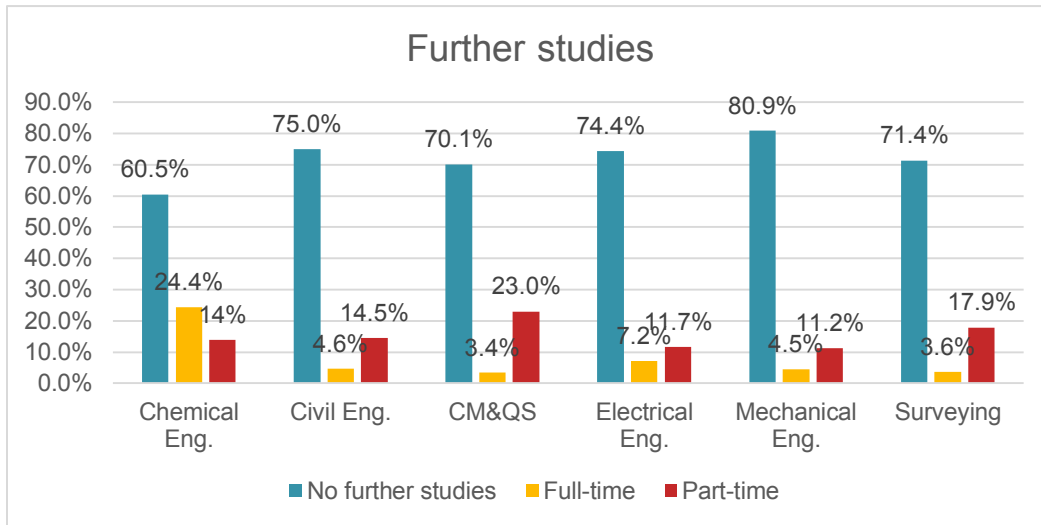
Figure 26: Further studies by respondents in Engineering programmes

Departmentally, the highest number of students who are studying further are in Mechanical Engineering ,80.9%, followed by, Civil Engineering,75%, Electrical Engineering, 74.4%, Surveying,71.4%, and Chemical Engineering 60.5%.

4.8   Some Key Findings

The faculty attracts more male students than female.

More graduates were employed in Chemical Engineering.

Even when graduates exit the University with Engineering qualifications unemployment is still very high (50%)

A small number of graduates were meaningfully occupied at the time of conducting the survey (22%).

A small number of graduates are studying further in the faculty (9.9%)

The overwhelming majority of graduates in the faculty were from the province of KwaZulu-Natal.

4.9 Views on improving the quality of education offered at MUT

Table 3: Respondents' views on improving the quality of education offered at MUT (Engineering programmes)

FACULTY OF ENGINEERING					
INFRASTRUCTURE	DELIVERY/HUMAN RESOURCES	CURRICULUM/TEACHING AND LEARNING	CAMPUS ACTIVITIES	WIL	SAFETY
• Have electricity generator to make sure that classes are not disturbed by load shedding • Improve the level of technology in the university that will help student during registration • MUT can improve by creating more efficient system to help students register, apply for residential and apply for study aid.	• Provide tutors for each module and offer more qualified tutors and offer a lot of other courses. • Hire more educated and experienced lecturers and empower. Lecturers who are willing to put overtime to help disadvantaged students. Lecturers who are always available on campus for consultation	• Research programmes must be in place to allow more exposure to development • Get accreditation to offer degrees in Engineering. • Provide long distance learning programmes. • Have e-learning programme • Pretech programme was helpful • Presentations and	• Transport must be on time to avoid missing out or being late for classes	• Build a relationship with companies so that students will be placed after completing theory part because it is hard to find in-service training. • University must assist students with finding training	• Improve security at residences and transport • Provide security for students that stay on campus until late.

• Expand Library and online learning. • More attention to be paid more on availability of books in Library to be borrowed by students for the term of study and the study guides. • Must have more residence for students inside campus • Stop enrolling too many students as the lecture rooms are not big enough • Lab equipment to be improved • Help students with software that is used during practicals to	and with industrial and academic experience. • Improve customer care and friendly administrative staff • Students be listened to especially if they have a problem concerning a certain course or lecturer • Make sure that every lecturer attend his/her class on time and help struggling students to improve in their studies • The Head of the university must make sure that each lecturer has	Curriculum needs to be updated frequently as in most cases the information provided and studying promises like software, provided are not in line or relevant to the industry. • To have material for Practicals which are normally used on Construction Field for easy adapt; material like Layser (CM&QS) • Practical skills for "Structures and Concrete 3" should be a year.(CM&QS) • The university must ensure that no exam		after competin g studies • More field visits for students • Monitor the in-service trainees more regularly and also find in-service training for students • P0 - To offer more in-depth informatio n of how the workplac e will be, prepare students. Students could get more informatio

install them in their computers for practice purposes • Labs and Workshop require some improvement and put more time in practicals so that students will have a clear idea of what they will be doing in the field.	positive attitude towards the students.	papers leak, this kills the quality produced and ensure that lecturers are competent. • To emphasize the importance of constructing projects (prototypes) or how important it is to know the whole function of the stuff like software used. (Electrical Engineering) • Introduce more practicals to match what is expected on the field of work • In Melatronics studies, students need more equipment for demonstrations in the labs, especially in		n on the work and what they will be actually doing • Education standard does not reflect what is required by industry. • Include students in Debates to better equip them for workplace challenges.	

		Robotics III, e.g. learn about different drivers of robotics including software (Electrical Engineering). • Mainstream students should also have a Drawing module like the Pre-techs since it is of utmost importance in the work place. • To offer BTech in Mechanical Engineering because if students go to DUT, they require EMS, Maths III and Machine Design III which are additional subjects at			

| | | MUT (Mechanical Engineering) | | | |
| | | • By having Communication Skills until S4. | | | |

5. FACULTY OF NATURAL SCIENCES

5.1 Participation rate in the Faculty of Natural Sciences per Department

There were 358 participants in the faculty of Natural Sciences in the survey. In the Faculty, graduates received qualifications ranging from National Diplomas to Master's degrees. Of the 358 participants, 95.3% were African, 1.4% Indian and 0.35 coloured. A significant number of 58.1% got into the programme they studied through the mainstream pathway and 18.7% through the ECP pathway.

Figure 27, below outlines the faculty of Natural Science participation rate in the survey per department.
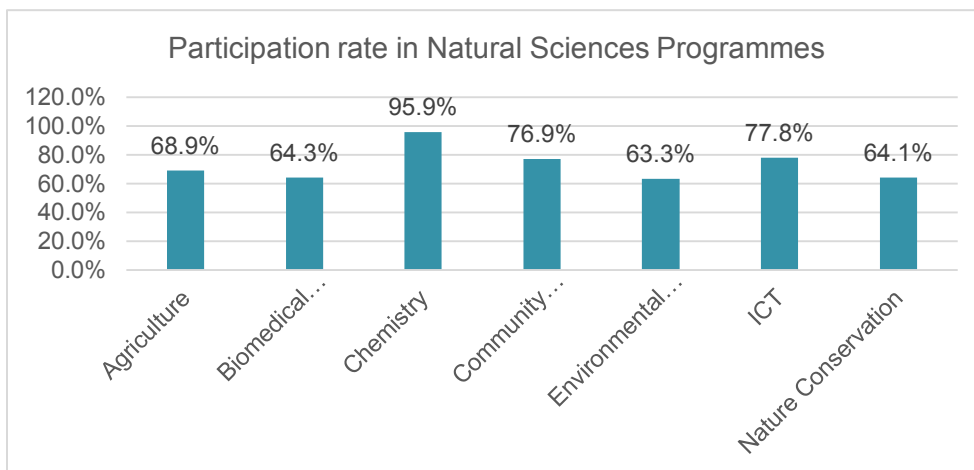
Figure 27: Participation rate per department in the Faculty of Natural Science

The highest participation rate was recorded in the Department of Chemistry, 95.9%, followed by ICT, 77, 8%. However, the participation rate in all departments in the Faculty was above 60%.

5.2 Pathways into programmes in the Faculty of Natural Sciences

Figure 28 below depicts the pathways followed into the Natural Science faculty programmes.
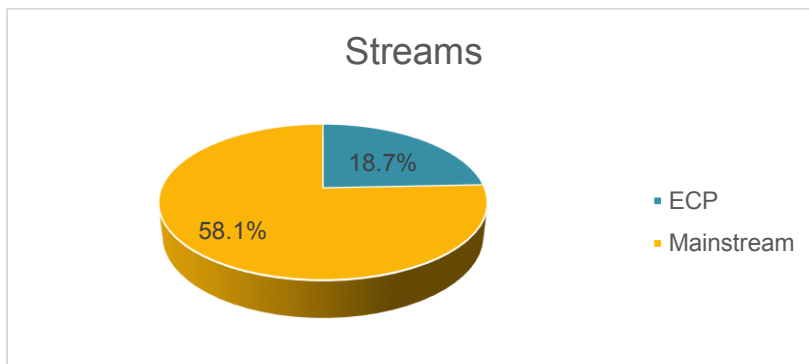
Figure 28: Streams followed into Natural Sciences

5.3 Gender split in the Faculty of Natural Sciences

Of the 358 participants in the survey in the faculty, 54.2% were female, 41.3% were male. This faculty attracts more female students than male students.
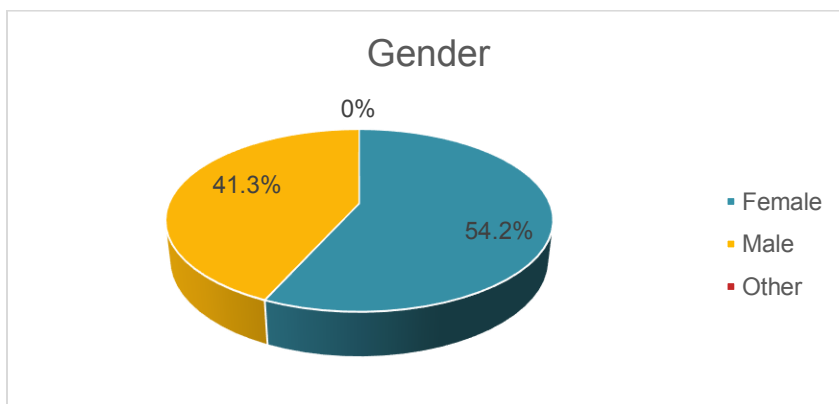
Figure 29: Gender split (Faculty of Natural Sciences)

5.4 Qualifications obtained in the Faculty of Natural Sciences

The faculty of Natural Sciences offers students opportunities to further their studies up to Master's degree qualifications in the Department of Nature Conservation. Figure 30 below illustrates the qualifications mix and pathways available in the Faculty. The significance of the data in this chart is that 1.7% of graduates in this faculty received Master's degrees.
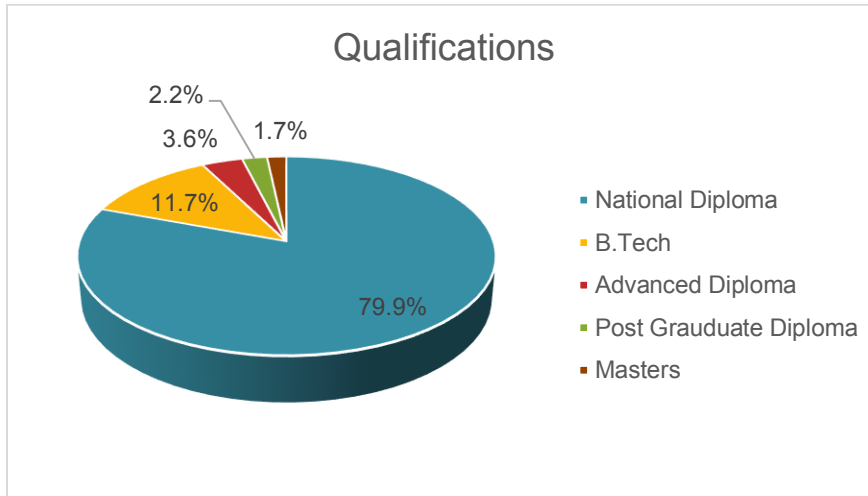
Figure 30: Qualifications in Faculty of Natural Sciences

5.5 Age categories of respondents in the Faculty of Natural Sciences

About 65.4% of respondents fall within the age category 8-25 years, 25.1% are in the age category of 26-35 years and only 5.6% are in the 36-50 years' age category.
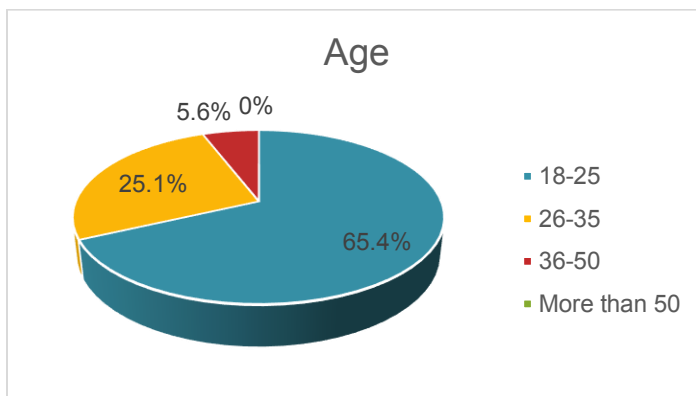
Figure 31: Age of respondents in Faculty of Natural Sciences

5.6 Respondents' year of entry in Natural Sciences Faculty

The majority of graduates received three year diplomas (79. 9%).Those who entered the University in 2014 should have graduated in 2016 assuming they took three years to complete a three-year diploma. In this year, 2018, of the 358 participants, 39.4% graduated in record time. Those who entered in 2016 for a three-year qualification were supposed to graduate in 2018, 13.4% graduated in this year of the 358 graduates who participated in the 2019 survey. About 53% of graduates completed their three-year qualification in record time of three years.

Figure 32 below depicts respondents' year of entry in the faculty of Natural Sciences.
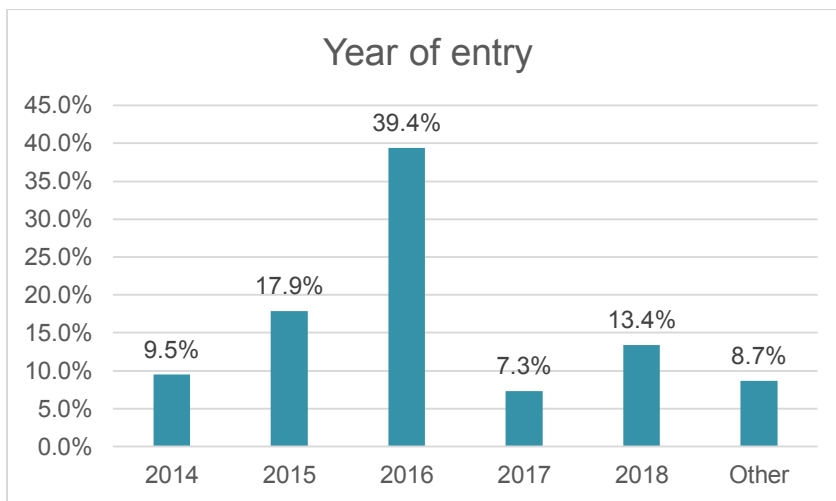
Figure 32: Respondents' year of entry in Natural Sciences Faculty

5.7 Country and Province of origin for graduates in the Faculty of Natural Sciences

Of the 358 participants in the survey in the Faculty of Natural Sciences 96.9% were from the Republic of South Africa (RSA) and only 0.3% were from the Democratic Republic of Congo (DRC). About 86.9% came from the province of KwaZulu-Natal followed by the Eastern Cape with 6.7%.

5.8   Current employment status of participants

In the Faculty of Natural Science, of the 358 participants; 51.4% were unemployed at the time of conducting the graduate survey. Only 31.3% were employed. Figure 33 below outlines the employment status of the participants in the survey in the Faculty of Natural Science. The serious finding in the faculty is that 51, 4% is not meaningfully occupied. The small number of 1.4% of

graduates who are studying further in a situation where a large number of graduates is unemployed is cause for concern.
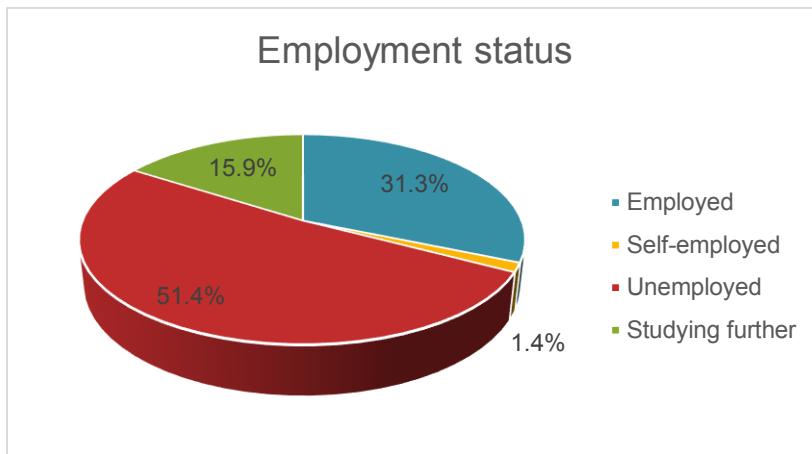
Figure 33: Current employment status of respondents (Faculty of Natural Sciences)

5.9 Manner of recruitment for those employed (Faculty of Natural Sciences)

The survey also sought to establish how those who are employed got into their jobs. About 13.7% of those employed got into their jobs by responding to job adverts; 8.1% through WIL placement. Figure 34 below outlines the various routes that employed graduates (31.3%) got into their jobs. About 40.2% indicated that this question did not apply to them. This could be those who were studying further, self-employed and those unemployed.
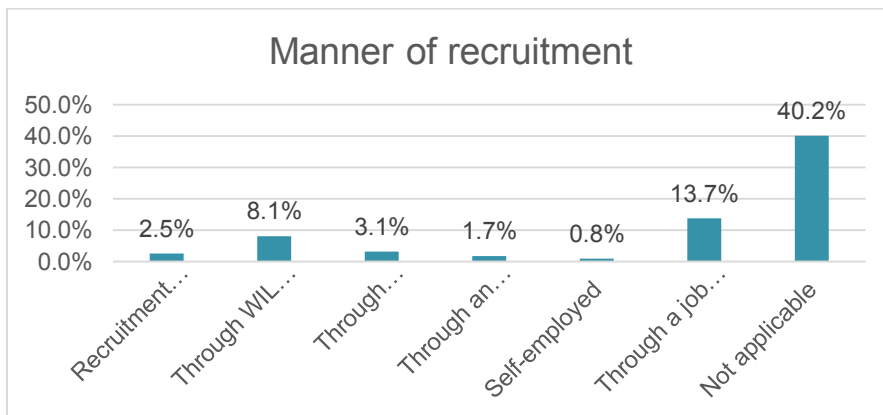
Figure 34: Manner of recruitment of employed respondents (Faculty of Natural Sciences)

5.10   Reasons for unemployment

For those unemployed, a variety of reasons were cited for being unemployed. About 32.1% indicated that they could not find job opportunities and 14.5% indicated that they could not find a job opportunity related to their field of study. About 11.5% were studying further. Figure 35 below outlines the reasons cited for being unemployed.
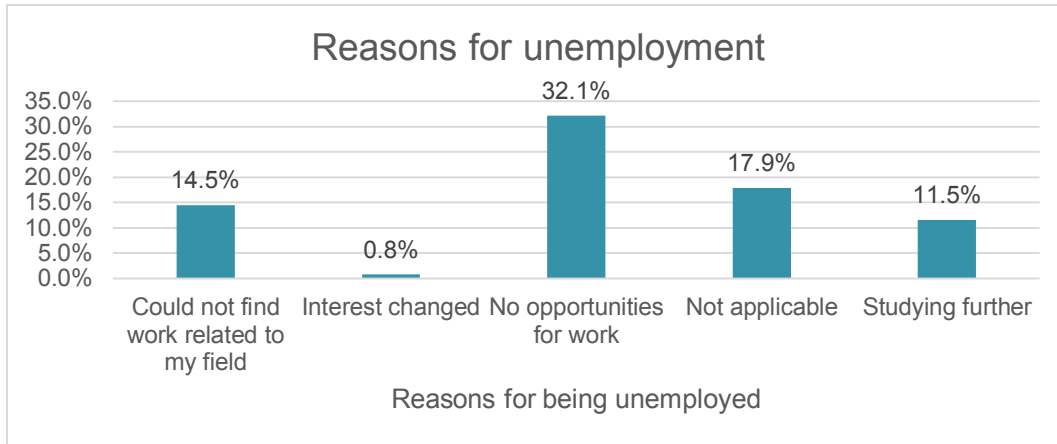
Figure 35: Reasons for unemployment of respondents in Natural Sciences

5.11   Further study

In the Faculty of Natural Science, of the 358 participants, 11.5% were studying further. Figure 36 below illustrates the mode through which they were studying.
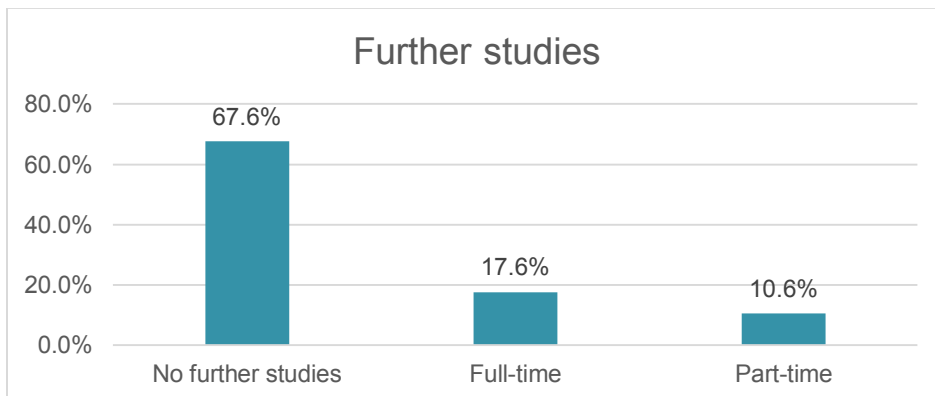
Figure 36: Further studies by respondents (Faculty of Natural Sciences)

5.12 Overall university experience – Faculty of Natural Sciences

Figures 37- 40 rated the graduates' experiences and services offered by the University during their study period or stay in the University. A rating scale of Strongly Disagree, Disagree, Agree and Strongly Agree was used. Overall graduates registered that they "Agree" and "Strongly Agree" with the various variables that were presented to them. The other side of the scale that is "Strongly disagree" and "Disagree" registered very low scores.

The following variables registered double digit disapprovals:

- Further programmes – 29%
- Library Resources- 27%
- Lecture venues-15%
- Security and safety-11%
- WI-FI Accessibility -49%
- Sufficient Study spaces provided – 19%
- Positive experiences at residences – 14%
- Transport to and from residences on time – 43%
- Clinic Facilities – 24%
- Adequate Counselling Facilities – 15%
- Adequate Sports Facilities – 19%

Issues that are outlined above registered double digit disapproval ratings and have to be addressed as a matter of improving the students' learning experiences in the University.

Respondents' study experience

	Standard of Work	Work Confidently	Communication Skills	Study further	Further Programmes
■ Strongly Disagree	1.2%	2.1%	2.8%	2.1%	9.5%
■ Disagree	2.1%	2.1%	2.8%	6.4%	18.8%
■ Agree	66.5%	50.0%	44.0%	45.6%	40.8%
■ Strongly Agree	30.2%	45.8%	50.5%	45.9%	30.9%
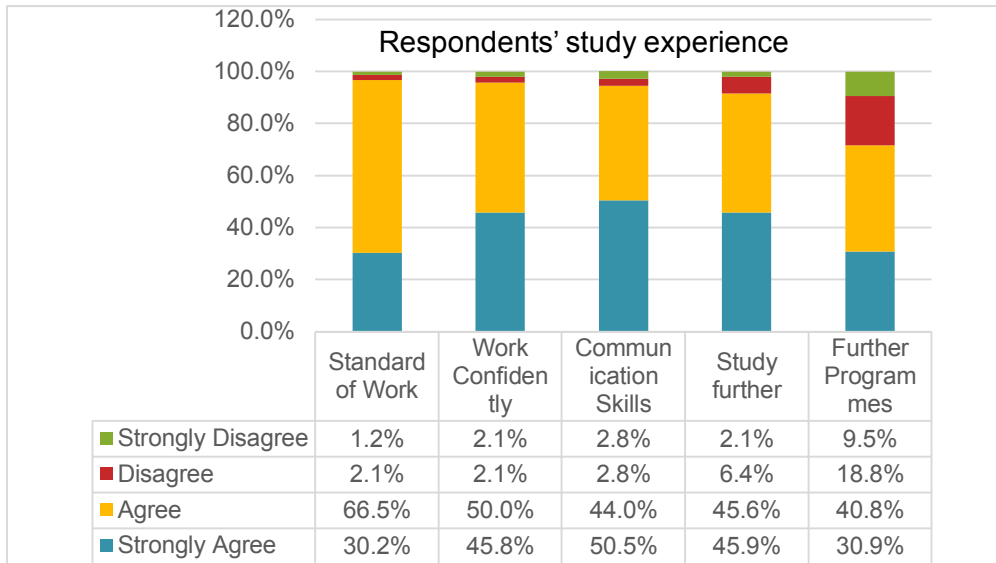
Figure 37: Respondents' study experience in Natural Sciences

Respondents' study experience

	Teaching and Learning materials appropriate	Lecturers' Motivations	Library Resources	Lecture venues appropriate	Safety and security provided
■ Strongly Disagree	1.2%	2.1%	5.1%	0.6%	1.2%
■ Disagree	4.2%	2.7%	21.6%	14.2%	10.2%
■ Agree	60%	47%	52.6%	59.4%	60.2%
■ Strongly Agree	34.5%	48.2%	20.7%	25.7%	28.4%
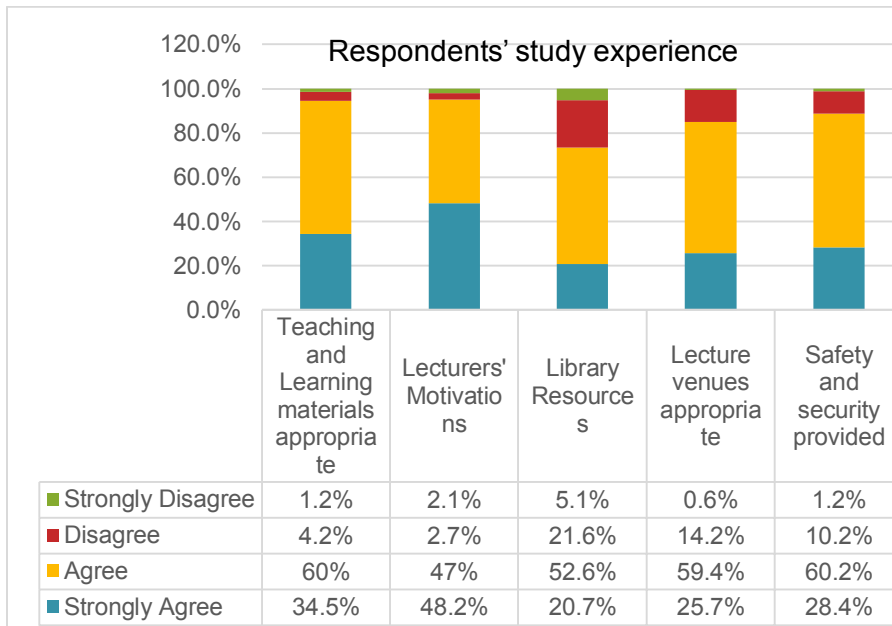
Figure 38: Respondents' study experience in Natural Sciences

Respondents' study experience

	Conducive environment for studying	Wifi Accessible	Sufficient study space provided	Positive experiences at residences	Transport to and from residence on time
Strongly Disagree	1.9%	17.0%	2.8%	4.1%	11.9%
Disagree	6.3%	31.6%	16.6%	10.2%	31.3%
Agree	65%	39.4%	59.8%	60.3%	42.9%
Strongly Agree	26.9%	11.9%	20.9%	25.4%	13.8%
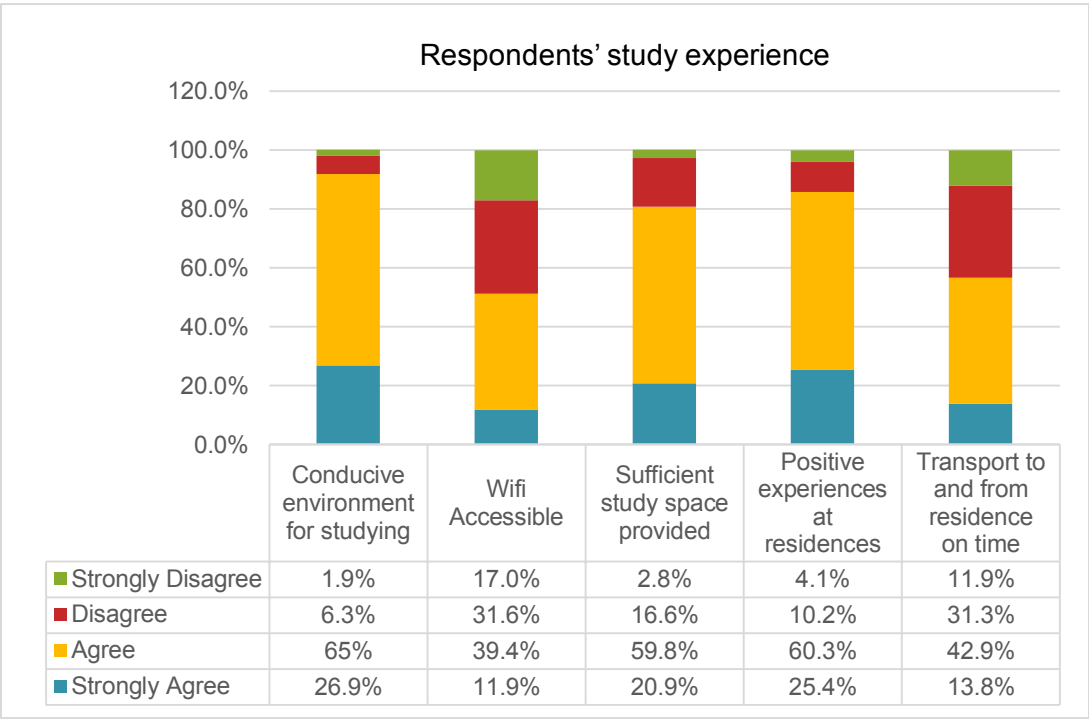
Figure 39: Respondents' study experience in Natural Sciences

Respondents' study experience

	Clinic facilities are adequate	Adequate counselling facilities	Adequate sports facilities	Overall satisfaction with study experiences	Recommend anyone to study at MUT
Strongly Disagree	6.9%	3.7%	4%	1.8%	2.7%
Disagree	16.9%	10.5%	15.0%	5.2%	4.5%
Agree	59.6%	68%	63.9%	53.5%	47.0%
Strongly Agree	16.6%	17.8%	17.1%	39.5%	45.8%
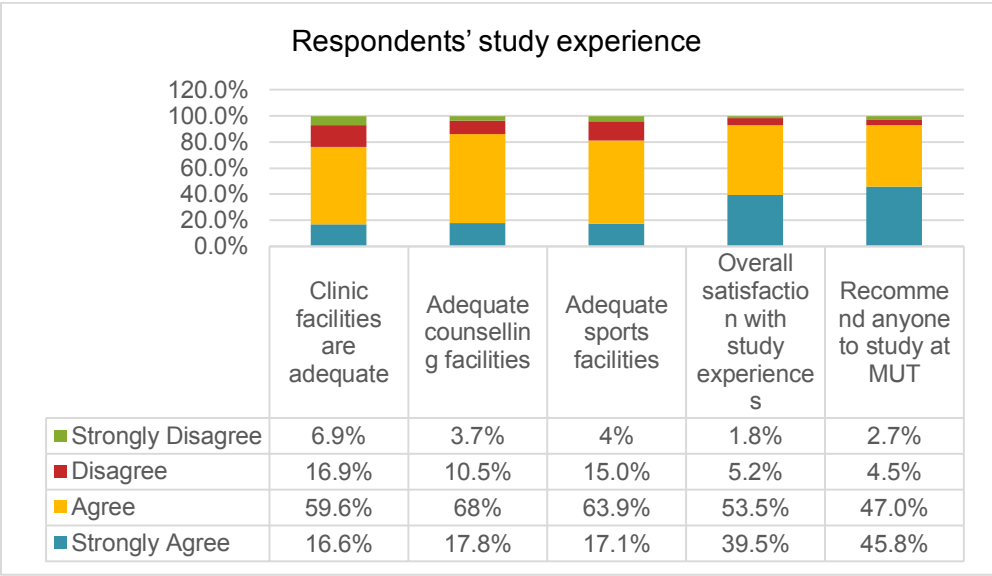
Figure 40: Respondents' study experience in Natural Sciences

6. FACULTY OF NATURAL SCIENCES – DEPARTMENTAL ANALYSIS

Faculty of Natural Sciences had a total 518 graduates. Of the 518, 358 took part in the exit Graduate Survey. This translated into a 69% participation rate. The lowest participation rate compared to the other two faculties.

6.1 Qualifications obtained in Natural Sciences

The Faculty of Natural Sciences offers qualifications from National Diplomas to Master's degrees. Of the 69% graduates who took part in the exit Graduate Survey in the Faculty, 8.5% obtained Master's degrees in Nature Conservation.

The Figure 41 below shows qualifications obtained in the Faculty of Natural Sciences.

Qualifications obtained in Natural Sciences

	Agricul ture	Biome dical Scienc es	Chemi stry	Comm . Ext.	Enviro. Health	ICT	Nature Conse rvatio
■ Masters	0%	0%	0%	0%	0%	0%	8.5%
■ Post Graduate Diploma	0%	0%	0%	0%	0%	1%	8.5%
■ Adv. Dip	0%	0%	0%	3.3%	0%	0%	20.3%
■ B.Tech	0%	44.4%	34%	0%	0%	1.9%	6.8%
■ NDip	100%	53.3%	66%	96.70%	100%	94.3%	52.5%
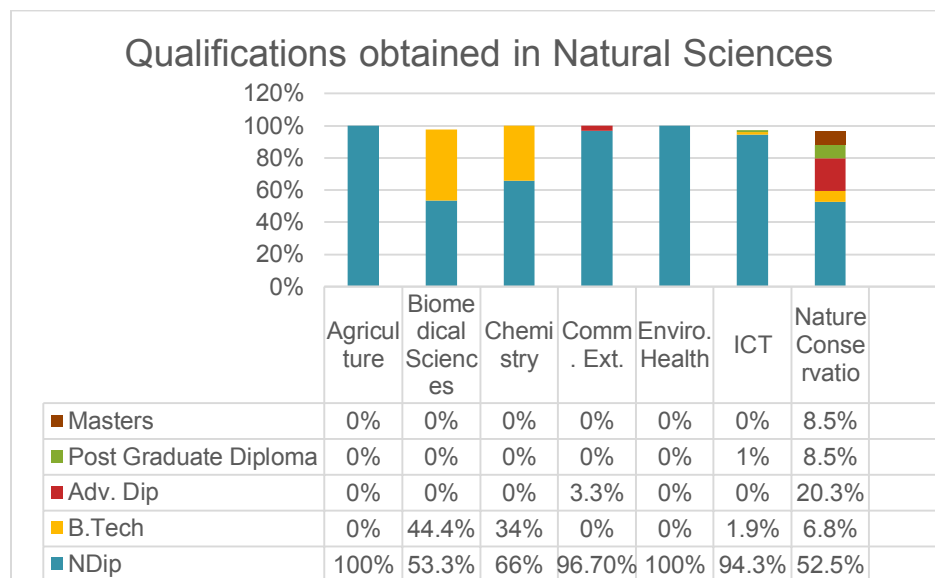
Figure 41: Qualifications obtained in Natural Sciences

6.2 Streams followed in accessing the qualifications in the Faculty

The Department of Agriculture registered the highest number of graduates that accessed their programmes through the ECP route (72. 5%).Overall a small number of graduates accessed the programmes through the ECP route. The Figure 42 below depicts streams followed in accessing programmes in the Faculty of Natural Sciences.

Streams in Natural Sciences

	Agriculture	Biomedical Sciences	Chemistry	Comm. Ext.	Enviro. Health	ICT	Nature Conservatio
Mainstream	25.5%	55.6%	48.9%	76.7%	81%	70.5%	55.9%
ECP	72.5%	0.0%	14.9%	6.7%	0%	18.1%	3.4%
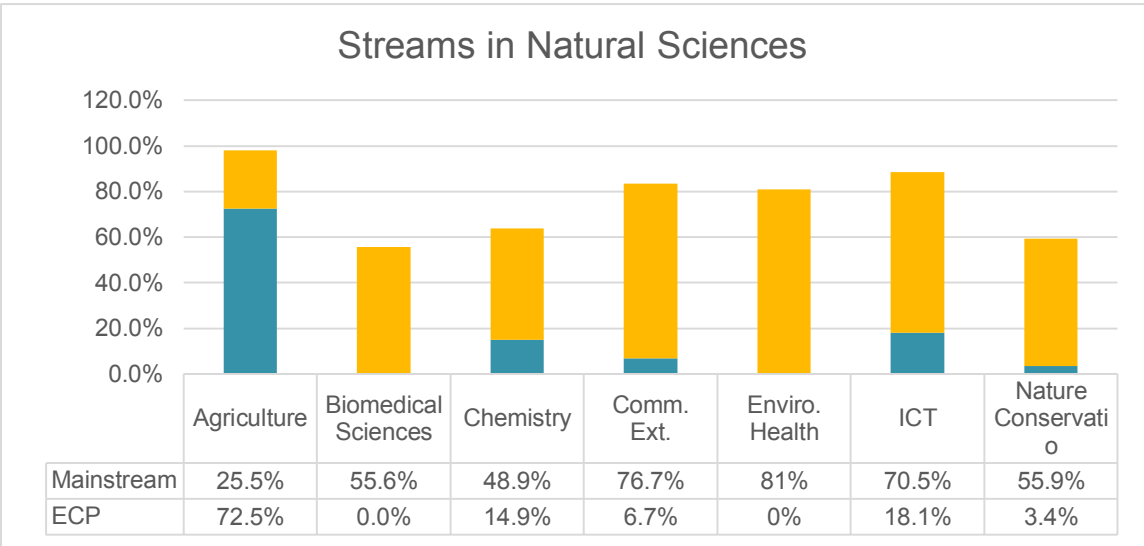
Figure 42: Streams followed per programme in Natural Sciences

6.3 Year of entry in Natural Science Faculty

About 13% of graduates started their studies in 2014 which means they took more than three years to complete a three-year diploma. The Department of Agriculture registered a large number of students who started their studies in 2014 and 2015,64%, followed by Department of Chemistry,43%. For a holistic picture see Figure 43 below.

Year of entry in Natural Sciences

	Agriculture	Biomedical Sciences	Chemistry	Comm. Ext.	Enviro. Health	ICT	Nature Conservatio
Other	13.7%	6.7%	14.9%	3.3%	0%	11.4%	1.7%
2018	9.8%	6.7%	17%	3.3%	4.8%	8.6%	35.6%
2017	2%	35.6%	6.4%	3.3%	0%	0%	8.5%
2016	11.8%	31.1%	10.6%	66.7%	76.2%	57.1%	33.9%
2015	41.2%	4.4%	31.9%	20.0%	19.0%	11.4%	6.8%
2014	21.6%	6.7%	10.6%	3.3%	0%	10.5%	5.1%
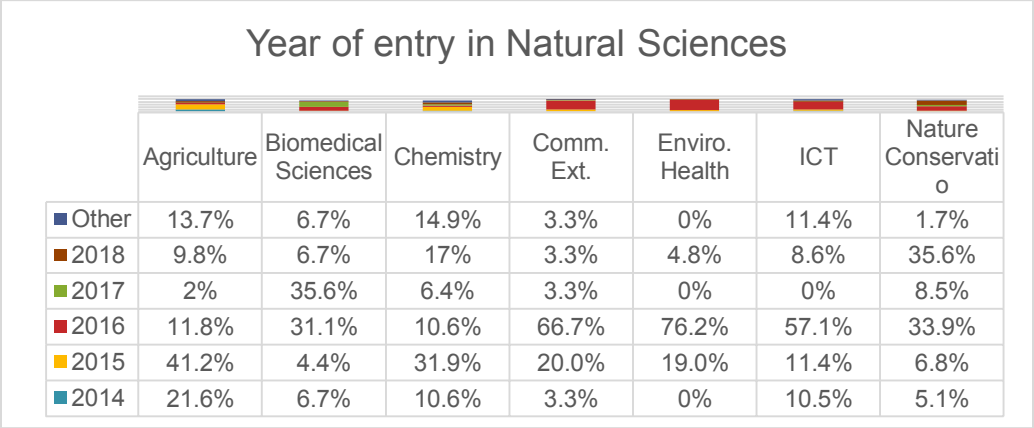
Figure 43: Respondents' year of entry per programme in Natural Sciences

6.4 Gender split in the Faculty of Natural Science per Department

About 85.7% of graduates in the department of Environmental Health who took part in the exit survey were female; 80% in the Department of Community Extension were female; 73.3% of graduates in the Department of Biomedical Sciences were female. Nature Conservation had 59.3% of the graduates in this Department being female. Only the Department of Agriculture with 61% male graduates and ICT with 55% had more male graduates than female. The figure (44) below shows gender split in the Faculty of Natural Sciences.

Gender in Natural Sciences

	Agriculture	Biomedical Sciences	Chemistry	Comm. Ext.	Enviro. Health	ICT	Nature Conservatio
Other	0%	0%	0%	0%	0%	0%	0%
Male	60.8%	20.0%	44.7%	20.0%	14.3%	55.2%	33.9%
Female	39.2%	73.3%	48.9%	80.0%	85.7%	39%	59.3%
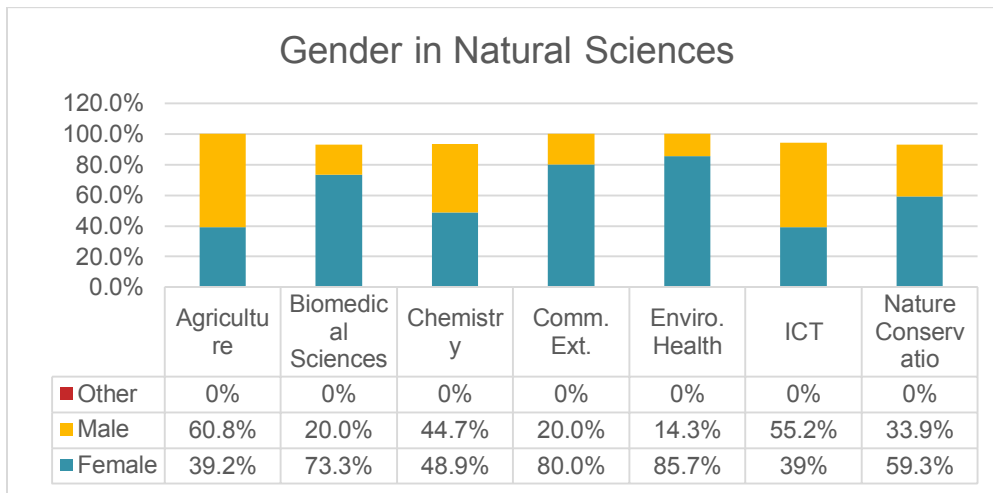
Figure 44: Gender split per programme in Natural Sciences

6.5 Age categories of graduates per department

The majority of the graduates, 67%, are in the age category of 18 -25 years. About 25% are in the age category 26-35 years and 5% are in the age category of 36 – 50 years. About 90% of graduates were in the age category of 18-25 years in the Department of Community Extension, 81% in Environmental Health, 77% in ICT. Nature Conservation has the highest number of graduates in the age category of 26-35 years at 33%. Figure 45 below shows age categories of graduates in the Faculty of Natural Sciences.
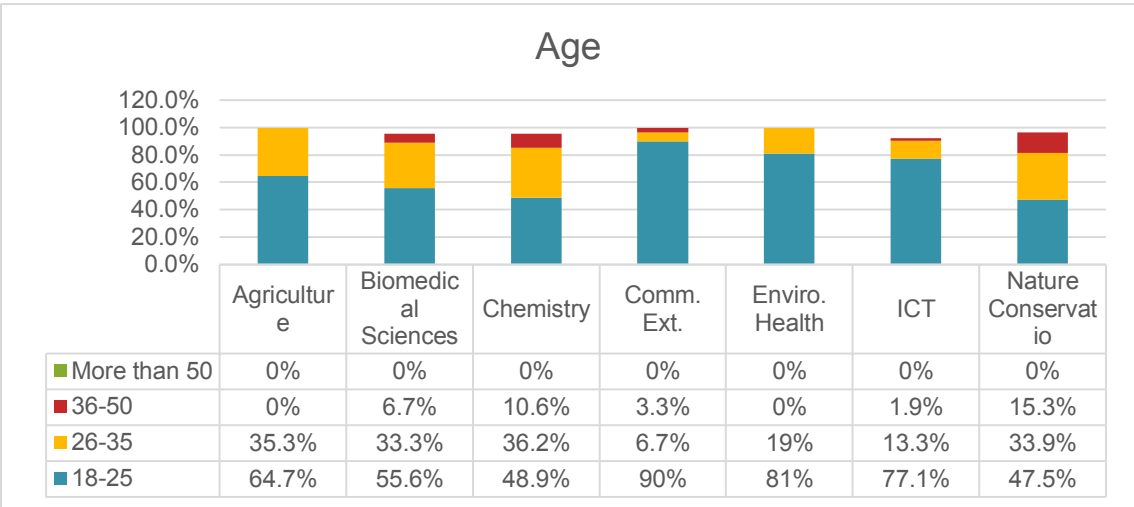
Figure 45: Respondents' age per programme in Natural Sciences

6.6 Race of graduates per department

The Departments of Community Extension and Environmental Health had 100% of graduates who are African. The other departments had a tiny number of other races. Biomedical Sciences had, 8.9%, Indian/Asian graduates and Chemistry had 2%. The figure 46 below depicts race of graduates in the Faculty of Natural Sciences.
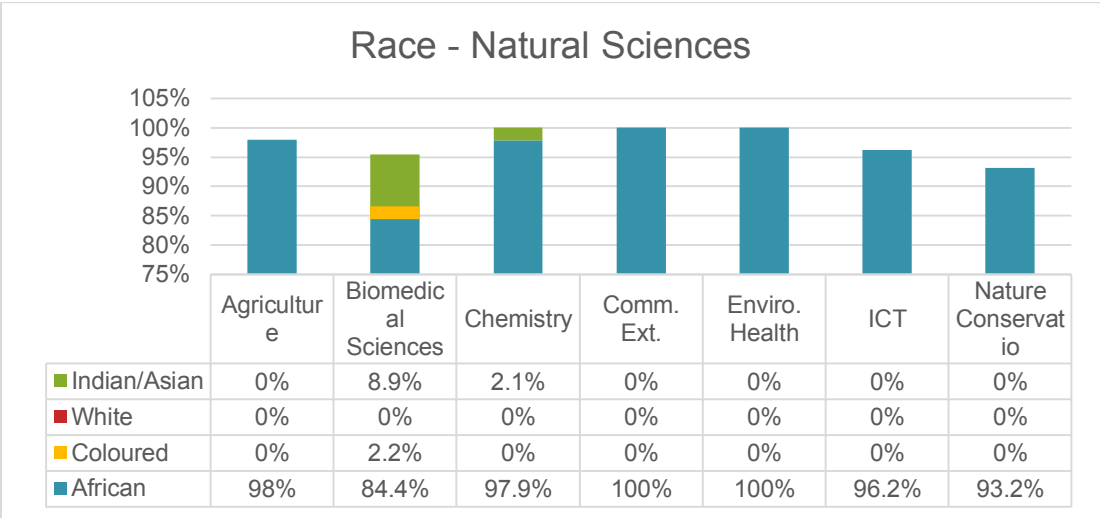
Figure 46: Respondents' race groups in Natural Sciences programmes

6.7 Graduates' country of origin per department

About 83% of the graduates from the various departments came from the Republic of South Africa. A significant number, 4.8% came from the Democratic Republic of Congo (DRC). The DRC is the only country apart from South Africa that registered graduates in the faculty. The figure 47 below shows country of origin of graduates in the Faculty of Natural Sciences.

Country

	South Africa	Swazi land	Lesot ho	Moza mbiqu e	Zimba bwe	DRC	Tanza nia	Angol a	Zambi a	Mala wi	Nami bia	Botsw ana	Other
■ Nature Conservatio	94.9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
■ ICT	96.2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
■ Enviro. Health	95.2%	0%	0%	0%	0%	4.8%	0%	0%	0%	0%	0%	0%	0%
■ Comm. Ext.	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
■ Chemistry	97.9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
■ Biomedical Sciences	95.6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
■ Agriculture	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
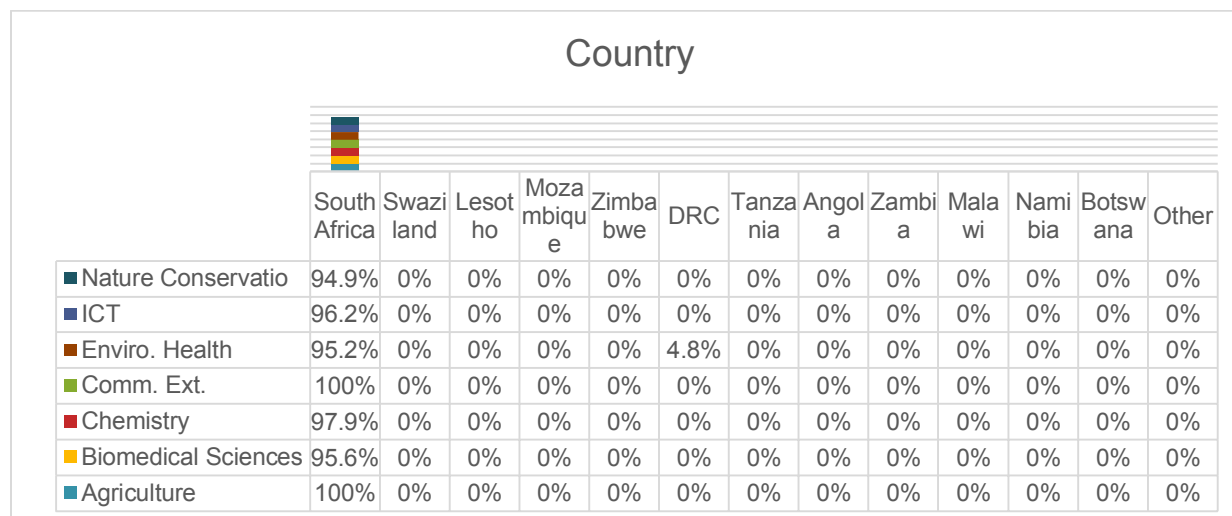
Figure 47: Respondents' country of origin in Natural Science Departments

The Department of Nature Conservation provides a spread of graduates from a number of provinces. About 78% in the Department of Nature Conservation came from KZN, 3% from Eastern Cape, 5% from Mpumalanga, 9% from Limpopo and 2% from other places or countries.

Provinces

	KZN	EC	FS	GP	WC	NC	MPU	NW	LIMP	Other
■ Nature Conservatio	79.7%	3.4%	0%	0%	0%	0%	5.1%	0%	8.5%	1.7%
■ ICT	87.6%	6.7%	0%	1%	0%	0%	1%	0%	0%	0%
■ Enviro. Health	81.0%	14.3%	5%	0%	0%	0%	0%	0%	0%	0%
■ Comm. Ext.	93.3%	7%	0%	0%	0%	0%	0%	0%	0%	0%
■ Chemistry	85.1%	10.6%	0%	0%	0%	0%	2.1%	0%	2.1%	0%
■ Biomedical Sciences	91.1%	4.4%	0%	0%	0%	0%	2.2%	0%	0%	0%
■ Agriculture	90%	6%	0%	0%	0%	0%	0%	0%	0%	0%
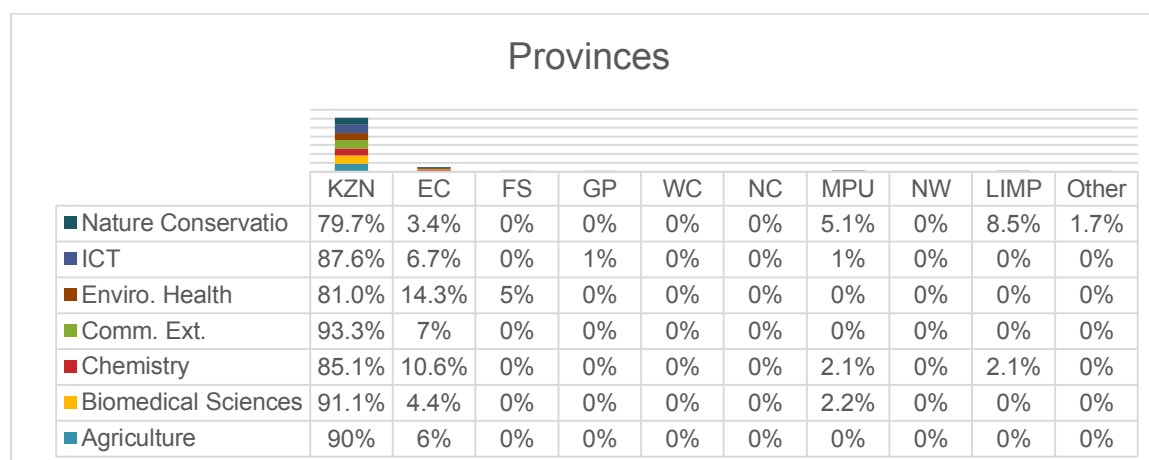
Figure 48: Respondents' province of origin per programme in Natural Sciences

6.8 The employment status of graduates at the time of conducting the exit survey

The Department of Agriculture had the lowest number of graduates who were employed (9.8%) and the highest number of graduates who were unemployed (67%). The Environmental Health Department is the second Department with the lowest number of employed graduates (9.5%) and the highest number of unemployed graduates (62%). The Department of Biomedical Sciences had the largest number of employed graduates (68.9%) followed by the Department of Chemistry with 46.8%. The Department of Nature Conservation was the third Department with 42.4% graduates who were employed at the time of conducting the exit survey. For a holistic picture see Figure 49 below.

Employment status

	Agriculture	Biomedical Sciences	Chemistry	Comm. Ext.	Enviro. Health	ICT	Nature Conservatio
Studying further	21.6%	17.8%	8.5%	30%	28.6%	15.2%	5.1%
Unemployed	66.7%	11.1%	44.7%	56.7%	62%	61%	50.8%
Self-employed	2.0%	0%	0%	0%	0%	2.9%	1.7%
Employed	9.8%	68.9%	46.8%	13.3%	9.5%	21.9%	42.4%
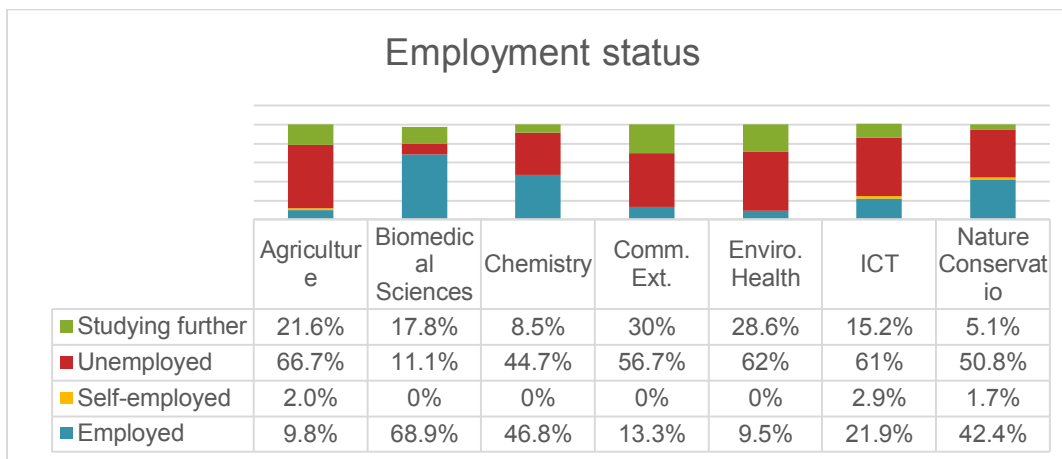
Figure 49: Current employment status of respondents per programme in Natural Sciences

6.9 Manner of recruitment for those employed

The majority of employed graduates got their jobs through job advertisement, 13%, followed by recruitment through WIL placement,7%, through personal contacts,3% and through recruitment from the University. About 41% indicated that the question was not applicable to them. Figure 50 below outlines the recruitment process through which the employed graduates got their jobs.

Manner of recruitment

	Agriculture	Biomedical Sciences	Chemistry	Comm. Ext.	Enviro. Health	ICT	Nature Conservatio
Not applicable	51%	20.0%	23.4%	60%	52.4%	48.6%	30.5%
Job advertisement	0%	31.1%	12.8%	10%	0%	7.6%	30.5%
Self-employed	2%	0%	2.1%	0%	0%	1%	0.0%
Employment agency	0%	8.9%	4.3%	0%	0%	0%	0.0%
Personal contacts	2%	4.4%	8.5%	3.3%	0%	2.9%	0.0%
Through WIL	6%	8.9%	14.9%	0%	4.8%	12.4%	1.7%
From the university	0%	8.9%	6.4%	0%	0%	1%	1.7%
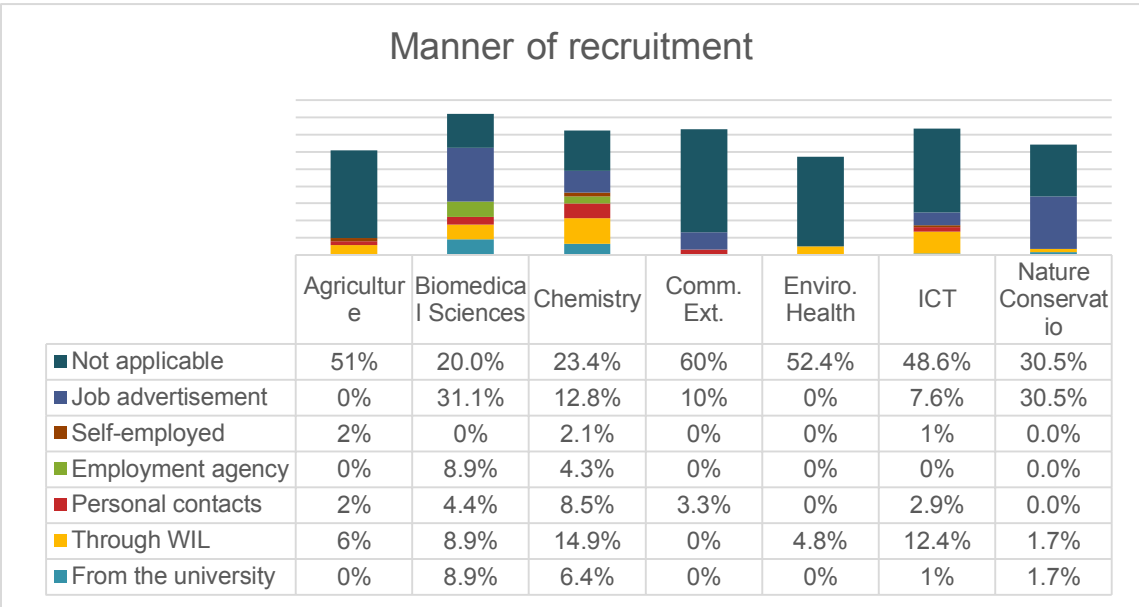
Figure 50: **Manner of recruitment of respondents from each programme in Natural Sciences**

6.10   Jobs related to field of study

About 28% of those employed in the Faculty of Natural Sciences were employed in fields related to the field they studied and 4.6% were employed in fields that were not related to what they studied. Figure 51 below outlines the job relatedness to field of study in the faculty of Natural Sciences.

Field of study

	Agriculture	Biomedical Sciences	Chemistry	Comm. Ext.	Enviro. Health	ICT	Nature Conservatio
N/A	49%	15.6%	17%	53.3%	47.6%	42.9%	33.9%
No	3.9%	0%	6.4%	10%	9.5%	1%	1.7%
Yes	9.8%	69.9%	40.4%	3.3%	9.5%	25.7%	37.3%
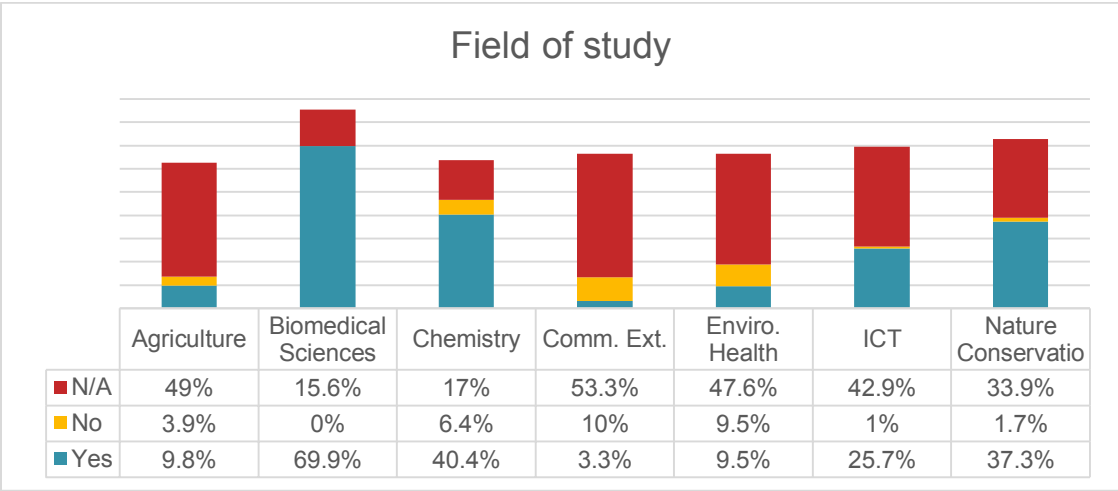
Figure 51: Job relatedness to field of study in Natural Sciences programmes

6.11   Reasons for unemployment in the Faculty of Natural Sciences

A high number of unemployed graduates per departments indicated that the reason for their unemployment is, lack of opportunities for work, Agriculture 43%; Environmental Health 43%; Community Extension, 37%; Nature Conservation, 34%. Only 4% of those unemployed in the department of Biomedical Sciences cited, lack of job opportunities, as a reason for their unemployment. A whole picture for reasons of unemployment is depicted in Figure 52 below. Some departments showed a significant number of students who indicated studying further as a reason for their unemployment. Agriculture 16%; Biomedical Sciences, 13%; Chemistry, 2%, Community Extension,23%, Environmental Health 19% and ICT,14%.

Reason for unemployment

	Agriculture	Biomedical Sciences	Chemistry	Comm. Ext.	Enviro. Health	ICT	Nature Conservatio
■ Studying further	15.7%	13.3%	2.1%	23.3%	19.0%	14.3%	0%
■ Not applicable	7.8%	26.7%	14.9%	16.7%	9.5%	19.0%	23.7%
■ No opportunities for work	43.1%	4.4%	31.9%	36.7%	42.9%	34.3%	33.9%
■ Interest changed	2%	0%	0%	0%	0%	1%	1.7%
■ Could not find work related to my field	23.5%	0%	12.8%	10.0%	19%	18.1%	13.6%
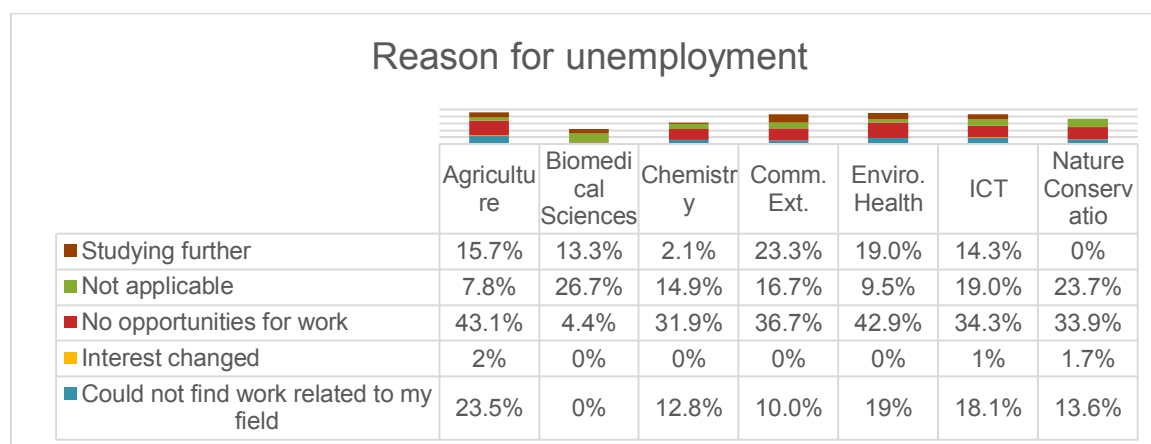
Figure 52: Reasons for unemployment per programme in Natural Sciences

6.12   Further studies by graduates per department in the Faculty of Natural Sciences

Cumulatively, 66% of the graduates who participated in the survey in the faculty were not studying further. For those who were studying, 20% were studying fulltime, 10% were studying part time. Figure 53 below outlines further studies by graduates in the faculty of Natural Sciences.
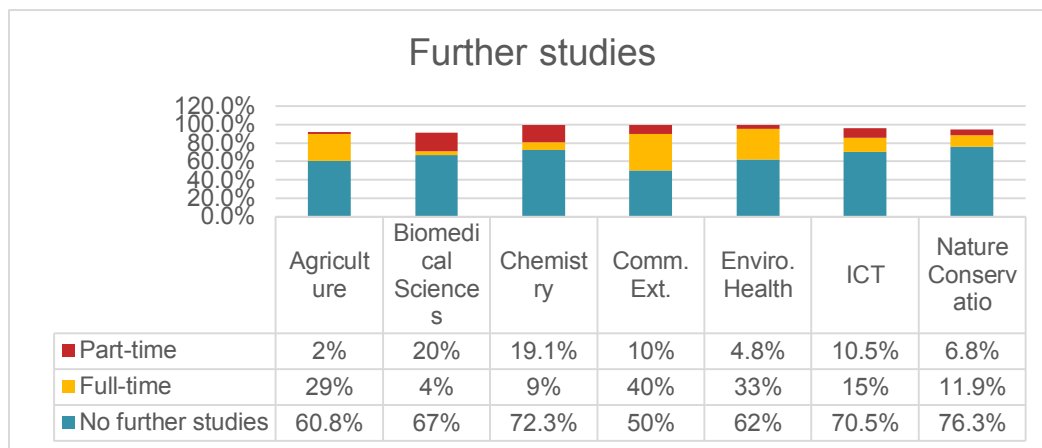
Figure 53: Further studies by respondents per programme in Natural Sciences

6.13 Views on improving the quality of education offered at MUT (Natural Sciences' programmes)

Table 4: Respondents' views on improving the quality of education offered at MUT (Natural Sciences' programmes)

INFRASTRUCTURE	DELIVERY/HUMAN RESOURCES	CURRICULUM/TEACHING AND LEARNING	WIL	CAMPUS ACTIVITIES
• Improve on Safety and Security especially for off campus students. • By using emails for workload and clear communication	• Hire competitive lecturers with high education. • Not happy of academic records how are accessed by students. • When submitting off	• Offer Advanced Diploma in all faculties. • Give student sufficient study material. • The university must offer more practical work than theory work.	• To offer every student equal chances based on the Work-Integrated Learning or finding them help in finding Work-Integrated Learning so	• Transport to and from residences must be improved.

• Build more residences.	report, would advise that they give feedback to students, so that in future they write a perfect report.	• Provide a form for Agriculture students to do practicals	they can graduate on time because lots of them is wasted looking for Work-Integrated Learning.
• Improve Library working hours, it should work 24 hours.		• Student visits to firms and farms to learn more	
• Improve lecture venues to be in good condition.	• Communication have to be more effective between lecturer and students at all times for easier work being done and progress.	• Advanced Diploma should be available	• MUT should prepare the student for work environment not only for academic purposes but with the expectations of the industries and how they should behave
• Library should have enough and relevant information, e.g. "I am studying Advanced Diploma; I do not have Wi-Fi excess there are not relevant Journal in the library this is an obstacle in my studies". Add more study material in Library that are up to date. Manage noise in the Library.		• Provide more necessary tools for practicals since in Agriculture there is a lack of practicals	
	• The university must hire tutors for Natural Sciences faculty to help student with their studies	• Have qualified lecturers in Animal Production	
		• MUT to offer students tutorials.	• Increase more opportunities for graduates to find jobs easily.
	• Lecturers be in class on time and communicate with students.	• Improve quality of education by conducting projects that are valuable which will involve students in order for students to be able to conduct	• Give student work experience so that the student will have little experience when they graduate and will be easy for
• Improve the marketing strategy in	• MUT should make sure that the staff members		

general (billboards must be posted along freeways) so that the community will have more knowledge about the university.	(lecturers) are more friendly and approachable.	their own Research to further their studies.	them to be hired by companies.
• The university must implement more informative system around, namely, Library, Computer Labs so that students can have access of information at any time they require.	• By providing adequate study materials, expose students to new systems of learning that will facilitate their studies. Provide sufficient practical activities to students to prepare them to future employment opportunities.	• Provide further study programmes in Biomed	• The university should offer more in-service training for student to get a clear understanding of the work environment with their faculties
• Give each student a laptop whey they enroll so that they can used a computer	• If they can make full access to academic records and provide more students with NSFAS	• Improve availability of staff at all times in their offices.	• I think it can easily improve if there are subjects that are relevant to the working industry because when I was doing the In-Service training there were things that I had to learn them of which they would have helped me the most if I heard to learn them in class.
	• The university can try and find NSFAS for	• Lecturers should at least have BTech	
		• Promoting group studies which will also promote teamwork as the course progressing.	
		• To offer instruments in the Chemistry Lab and study material	
		• Make every content available online	
		• They can improve by providing more qualifications for	

especially those from disadvantaged areas • WiFi in every corner of the university. • Get advancement on the technology standards of the study aids. • Conditions of classrooms should be improved • Improve lecture venues as some do not have projectors • Clinic facilities to be adequate • MUT should upgrade with times, the university is a bit behind when it comes to modern technology. • Improve laboratories for	Advanced Diploma students • With department of Environmental Health would suggest they hire only lecturers with relevant experience to Environmental Health and they must extend teaching hours in campus and the university. • The lecturers must arrive on time on study venues and put more effort in teaching students • Mentors should be way much dedicated to student whom they are mentoring • Should check the lecturers	other courses like Community Extension we need to have BTech here in the campus. • Concerning the Diploma in ICT, they can provide BTech for IT students to study further by offering Postgraduate courses. • There are not enough resources or equipment to do practical work especially in IT (Networking) we need equipment to do practical work to have a better understanding on the content. • Well-structured course well done Nature Conservation department	• I would suggest that the students should be afforded an opportunity to do some practicals during their studies where they are exposed to the nearest Reservoirs	

Community Extension students especially Basic Skills lab. • The university should build more labs expetial for IT students in order for them to have enough time of self-study with tutorials.	because sometimes the only reason why many people don't make it might be that lecturer. • At Nature Conservation they are doing a great job so far	lecturers and Professors. This course is excellent.		

6.14 Some Key findings in the Faculty of Natural Sciences

The faculty attracts more females than males;

The bulk of the students come from the province of KZN and they are Africans;

Unemployment stands at 51%.

7. AN ANALYSIS OF THE SURVEY PER FACULTY – FACULTY OF MANAGEMENT SCIENCES

7.1 Participation rate per department Faculty Management Sciences analysis

A total of 976 graduates participated in the Faculty of Management Sciences. The various departments and the participation rates per departments are outlined in Figure 54 below.
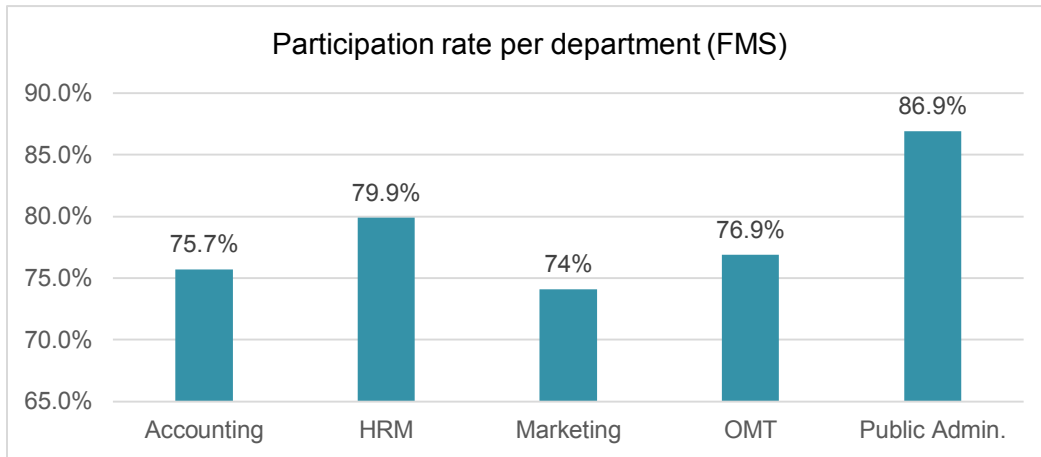
Figure 54: Participation rates per department in the Faculty of Management Sciences

7.2 Qualifications obtained in the Faculty of Management Sciences

There were 1241 students who graduated in this faculty. About 976 graduates participated in the graduate survey. A rate of 84.5% participants in the exit graduate survey in the Faculty obtained the National Diploma qualification. The Faculty however, offers the following qualifications: National Diplomas; BTech; Advanced Diplomas and Postgraduate diplomas. Figure 55 below illustrates the various qualifications offered.

The bulk of the graduates 68.8% got into their programmes through the mainstream route while 6.6% got into their qualifications through the ECP route.
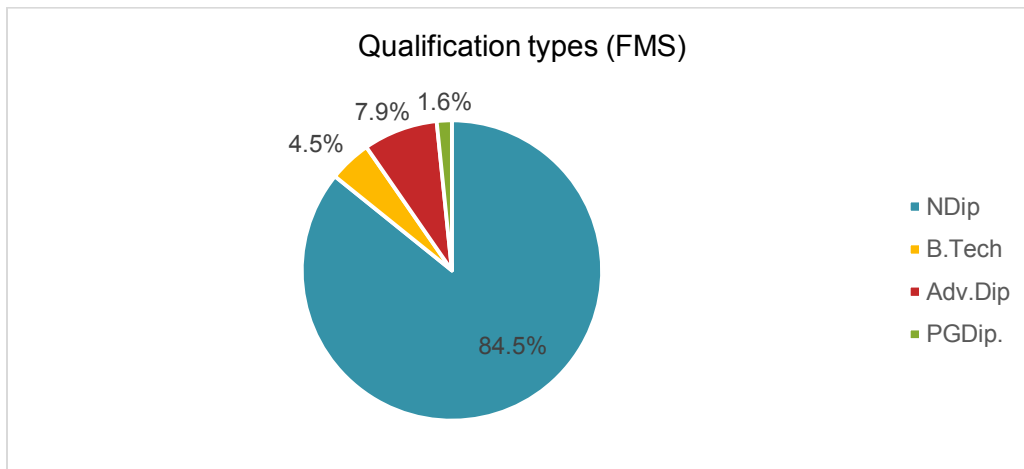
Figure 55: Qualifications types in Management Sciences

Streams

6.6%

68.8%

- ECP
- Mainstream
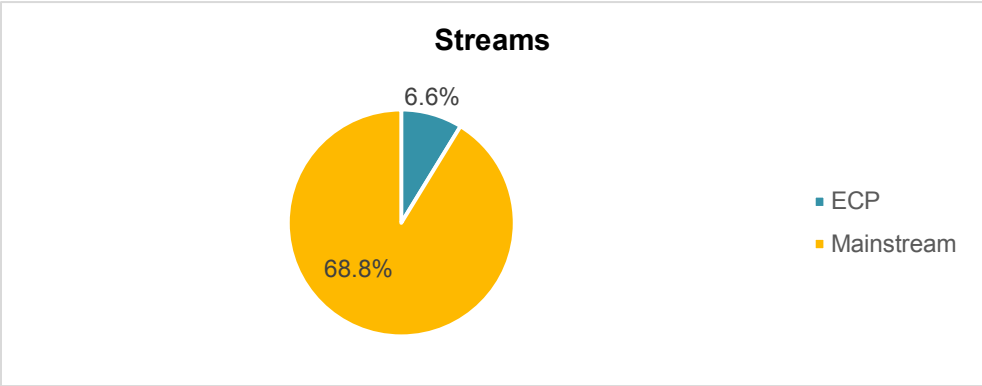
Figure 56: Streams into Management Sciences

7.3 Year of entry and duration of study

About 84.4% of the graduates obtained a three-year National Diploma. Graduates who started their studies in 2014 assuming they were in a three-year diploma were supposed to graduate in 2016. In this year 2016, 45.7% of the graduates who participated in the survey graduated. Those who entered the University in 2016 for a three-year qualification were supposed to graduate in 2018. In that year (2018) 23.5% students graduated – of the 976 that participated in the survey. An extrapolation could be made that the majority of students don't complete their three year diplomas in record time. Figure 57 below shows year of entry of graduates in the Faculty of Management Sciences.
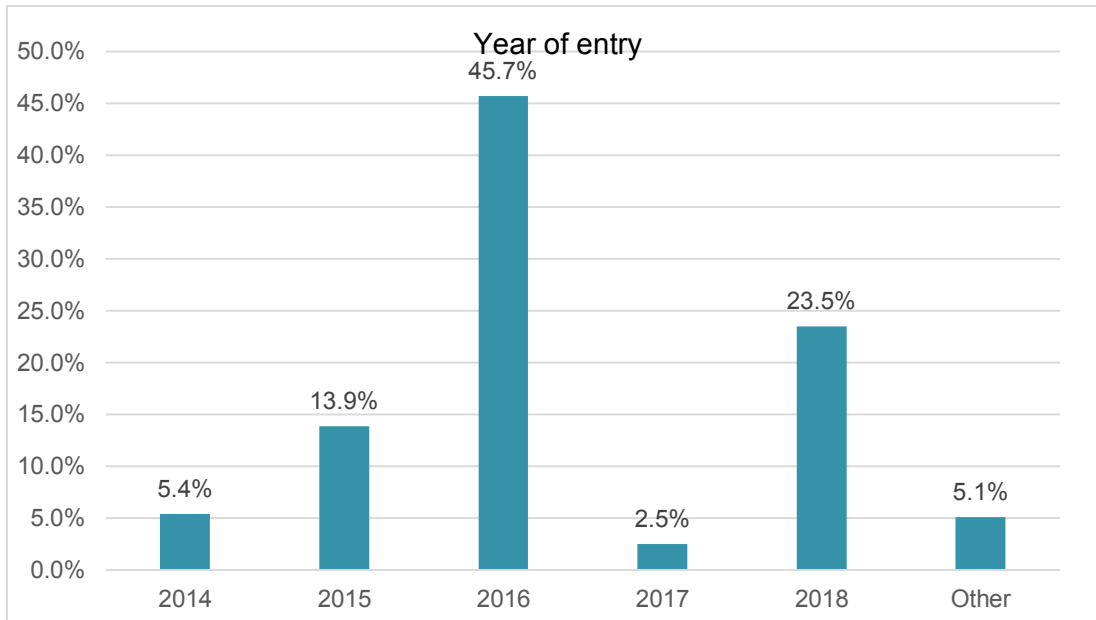
Figure 57: Year of entry in Management Sciences

7.4 Gender split in the Faculty of Management Sciences

The Faculty attracts more female students than male students, with 62.7% of the graduates' participants in the survey being female and 35% being male. Figure 58 below shows gender split of graduates in the Faculty of Management Sciences.
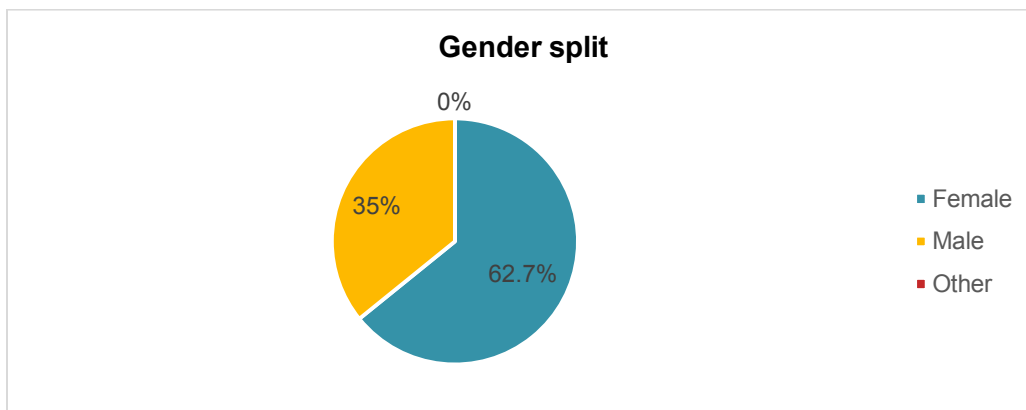
Figure 58: Gender split in Management Sciences

7.5 Age categories of participants and country of origin in Faculty of Management Sciences

The majority, 74%, of the participants in the faculty were in the 18-25 age category while 21% were in the 26-35 age category. Figure 59 below illustrates the age categories of the participants. With a tiny percentage of 0.1% being more than 50 years of age. About 98.4% were Africans.
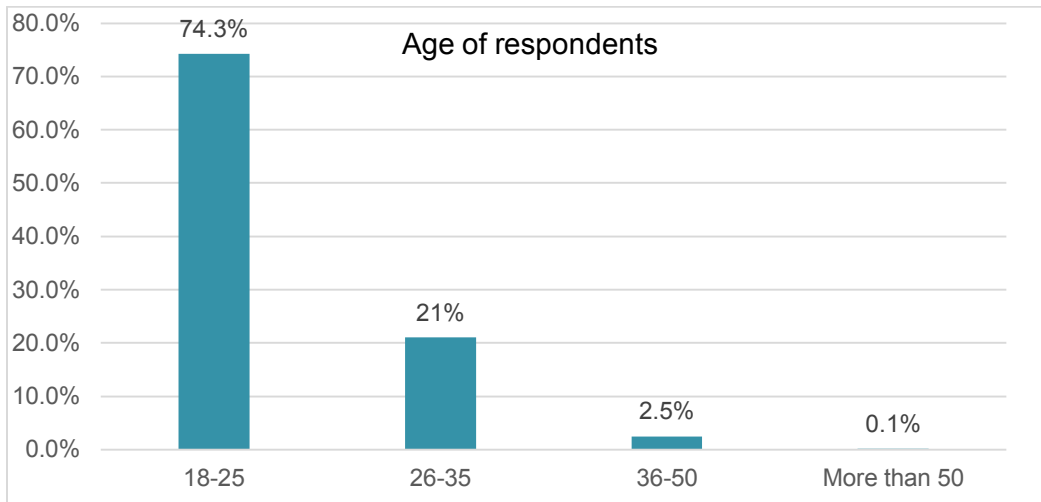
Figure 59: Age of respondents in Management Sciences

7.6 Country and Province of origin

Of the 976 participants in the faculty, 98.6%, were from the Republic of South Africa (RSA). About 91.2% came from the province of KwaZulu-Natal followed by the Eastern Cape with 4.3%.

7.7 Employment status in the Faculty of Management Sciences

Cumulatively, the faculty recorded an unemployment rate of 69% among the participating graduates in the exit graduate survey.12, 7% graduates were employed and 16% were studying further. The rate of unemployment notwithstanding only 2% were self-employed.
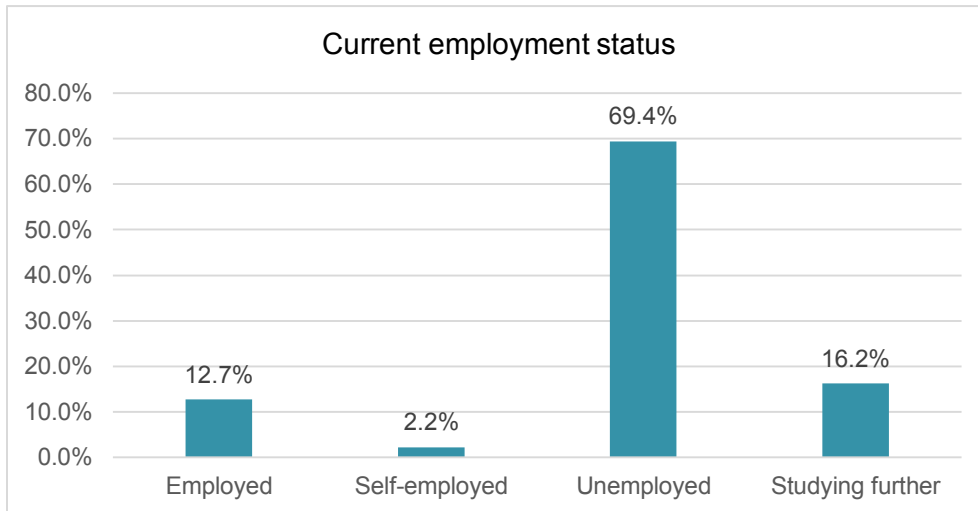
Figure 60: Current employment status of respondents in Management Sciences

7.8 Manner of recruitment for employed graduates in the Faculty of Management Sciences

The majority of those employed in the Faculty, got their jobs through job advertisement (7.6%). A tiny percentage of, 1,7% were self-employed.2,65% got their jobs through personal contacts. Figure 61 below outlines the recruitment manner for employed graduates in the Faculty of Management Sciences.
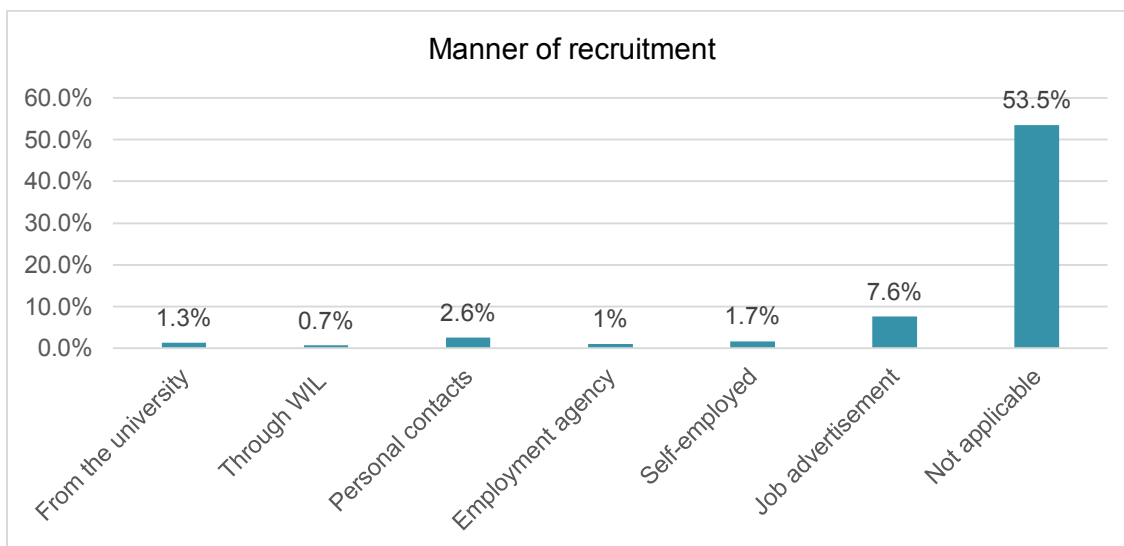
Figure 61: Manner of recruitment of respondents in Management Sciences

7.9 Job related to field of study

Of those graduates employed in the Faculty, 10.6%, were employed in a field related to what they studied while, 5,9%, were employed in a field that was not related to what they studied. 52.8% indicated that the question was not applicable to them. Figure 62 below shows job relatedness to the field of study in the Faculty of Management Sciences.
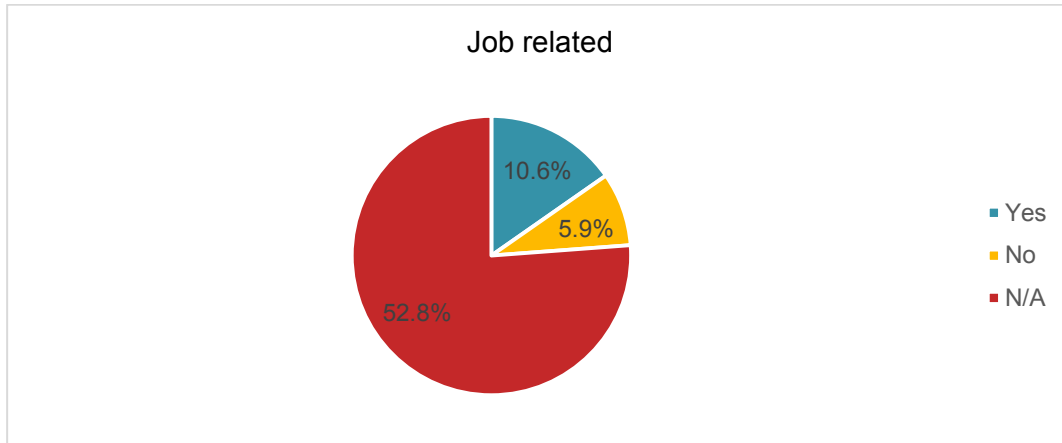
Figure 62: Job related to field of study in Management Sciences

7.10   Reasons for unemployment

Approximately 19% of unemployed graduates in the faculty indicated that the reason for their unemployment was that they could not find employment related to their field, 41% indicated that there were no opportunities for work, 12% were studying further. Of those studying, 23% were studying fulltime and 9% were studying part time. Figure 63 below shows the reasons for unemployment of graduates in the Faculty of Management Sciences.
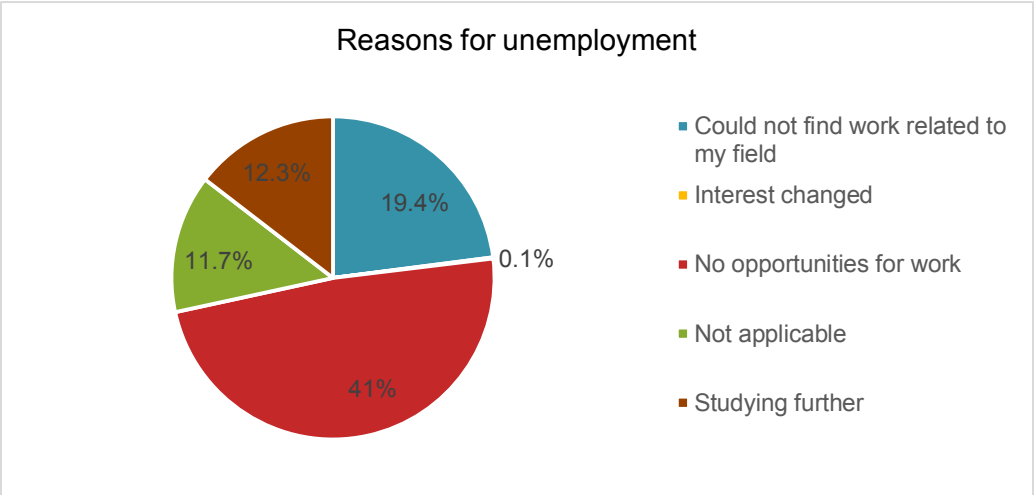
Figure 63: Reasons for unemployment (Management Sciences)
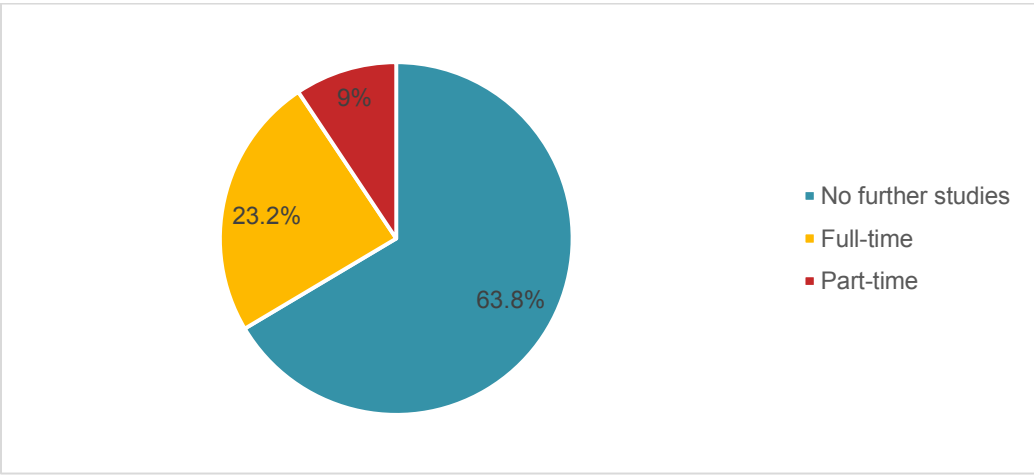
Figure 64: Further studies by respondents in Management Sciences

8. FACULTY OF MANAGEMENT SCIENCES DEPARTMENTAL ANALYSIS

8.1 Qualifications obtained per programme in Faculty of Management Sciences

Figure 65 below shows the various qualifications obtained per department in the Faculty of Management Sciences.

	Accounting	HRM	Marketing	OMT	Public Admin.
PGDip	0%	5.6%	0%	0%	0%
AdvDip	0%	19.2%	2.9%	16.2%	0%
B. Tech	18.8%	0.8%	0%	0%	0%
National Diploma	79.4%	73.3%	94.8%	80%	100.0%
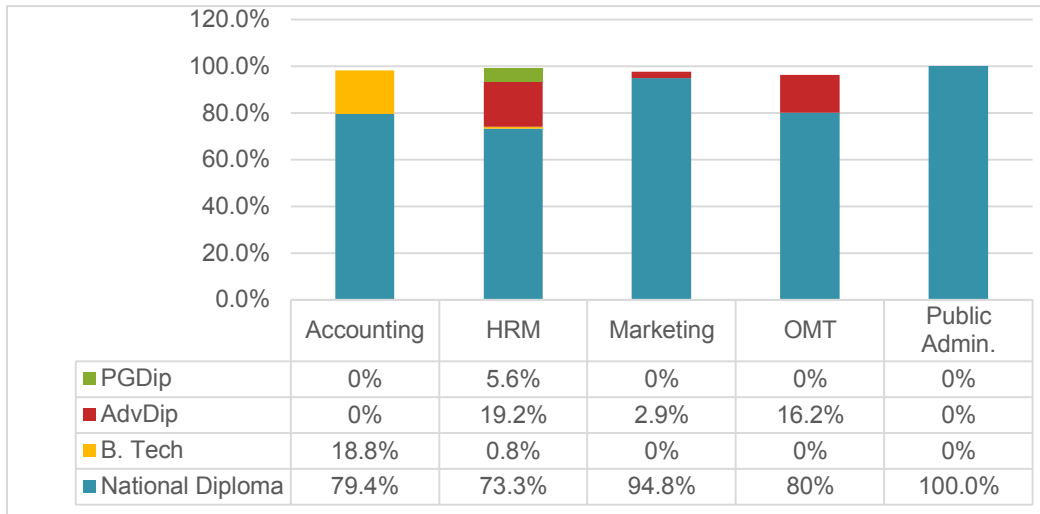
Figure 65: Qualifications obtained per programme in Management Sciences

8.2 Streams followed in the Faculty of Management Sciences

Figure 66 shows the pathways that were followed by graduates into the programmes in the Faculty of Management Sciences. There are only two pathways: ECP and Mainstream. The data shows that the majority of students got into the programmes they studied through the mainstream route.

	Accounting	HRM	Marketing	OMT	Public Admin.
Mainstream	63.8%	65.8%	74.4%	70%	72.6%
ECP	20.6%	1.5%	4.1%	0%	0%
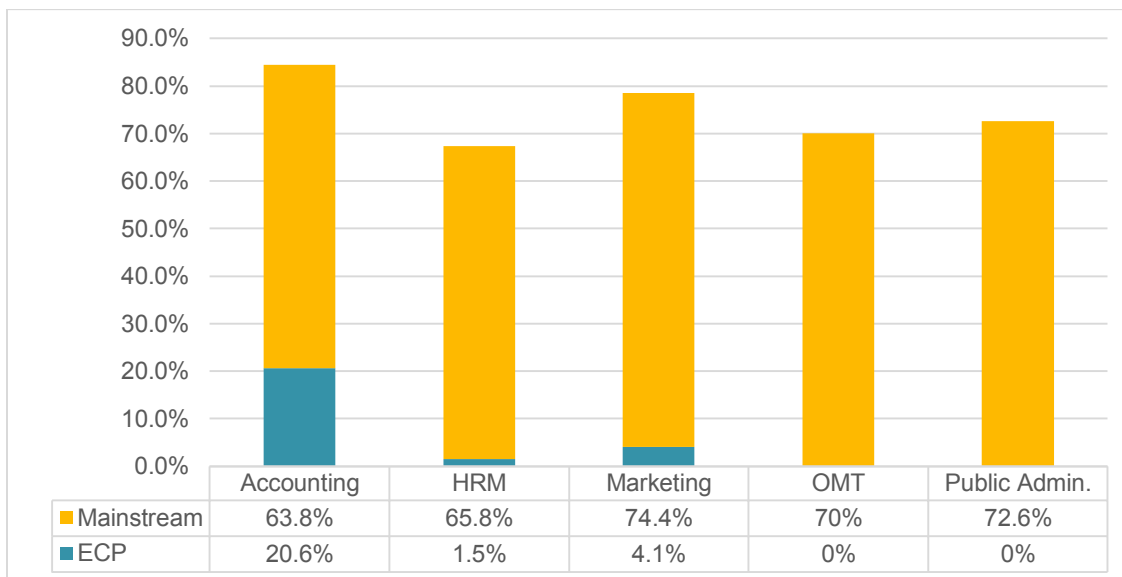
Figure 66: Streams followed per programme in Management Sciences

8.3 Respondents' year of entry per programme in Faculty of Management Sciences

Figure 67 shows that in all the programmes in the faculty, 5% started their studies in 2014, 14% started their studies in 2015, 47% started their studies in 2016. Those who started in 2016 and graduated in 2018 took three years to complete their three year diplomas.

	2014	2015	2016	2017	2018	Other
Public Admin.	1.6%	13.2%	63.2%	1.6%	11.1%	5.3%
OMT	4.6%	10.8%	48.5%	1.5%	27%	2.3%
Marketing	5.2%	14.5%	51.7%	1.7%	15.1%	5.8%
HRM	2.3%	12.4%	43.6%	2.6%	32.7%	2.6%
Accounting	13.3%	17.9%	26.6%	4.1%	27.5%	9.2%
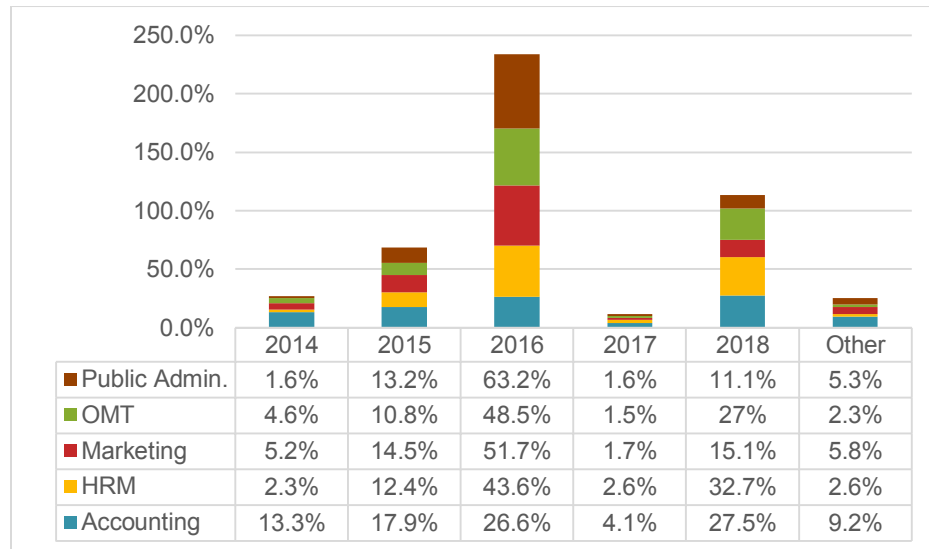
Figure 67: Respondents' year of entry per programme in Management Sciences

8.4 Gender split in Faculty of Management Sciences programmes

The data below in figure 68 shows that the programmes in the Faculty attract more female students than male.

	Accounting	HRM	Marketing	OMT	Public Admin.
■ Other	0%	0%	0%	0%	0%
■ Male	39.9%	37.2%	34.9%	33.1%	27.9%
■ Female	59.6%	59.4%	62.2%	63.1%	71.1%
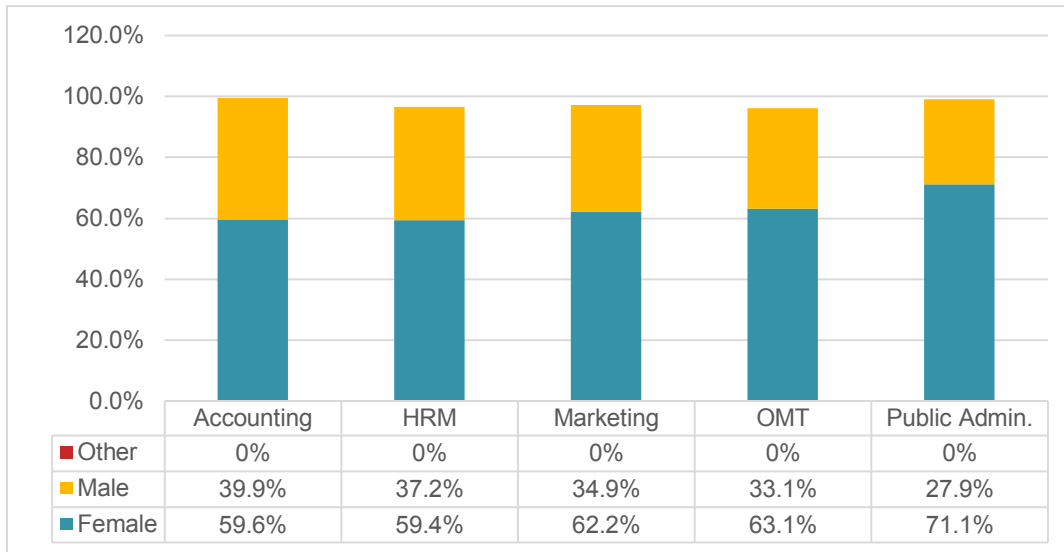
Figure 68: Gender split in Management Sciences programmes

8.5 Age of respondents in Faculty of Management Sciences programmes

Figure 69 below depicts the age distribution of graduates who participated in the survey in all the programmes in the Faculty of Management Sciences. About 74% of the graduates who participated in the survey fell within the 18-25 age category.

	Accounting	HRM	Marketing	OMT	Public Admin.
■ More than 50	0%	0%	0%	0%	0%
■ 36-50	0%	3.8%	1.2%	6.9%	1.6%
■ 26-35	25.2%	17%	24.4%	17.7%	20.5%
■ 18-25	73.4%	76.7%	71.5%	72.3%	75.8%
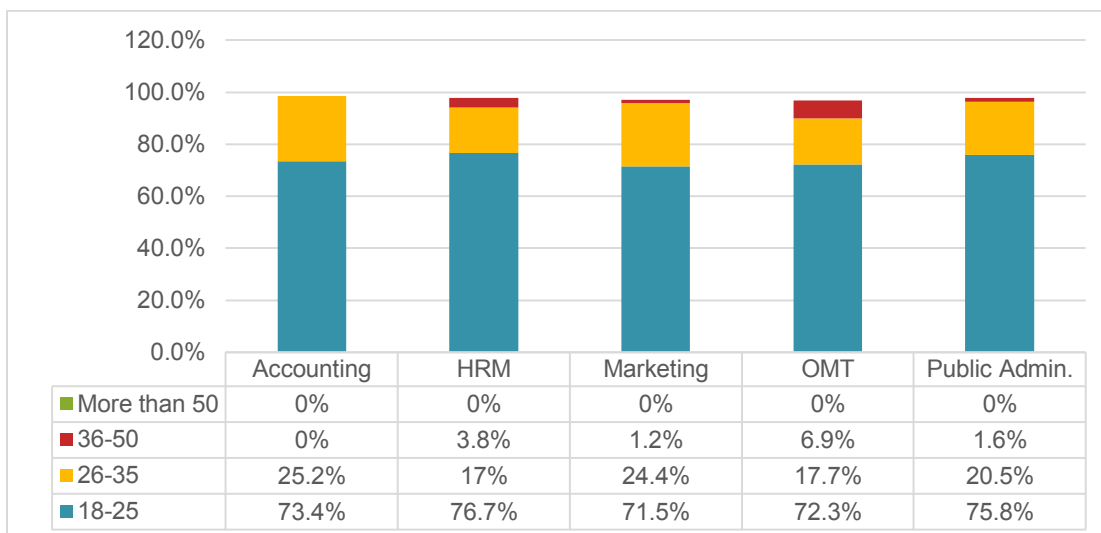
Figure 69: Age of respondents in Management Sciences programmes

8.6 Race and country of respondents in Faculty of Management Sciences programmes

The Faculty overwhelmingly attracts Black African students, 98.4%, mainly from South Africa and the province of KwaZulu-Natal (see figure 70 below). About 92% come from the province of KwaZulu-Natal.

	South Africa	Swaziland	Lesotho	Mozambique	Zimbabwe	DRC	Tanzania	Angola	Zambia	Malawi	Namibia	Botswana	Other
Public Admin.	99.5	0.0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
OMT	98.5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Marketing	96.5	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
HRM	98.5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Accounting	99.5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
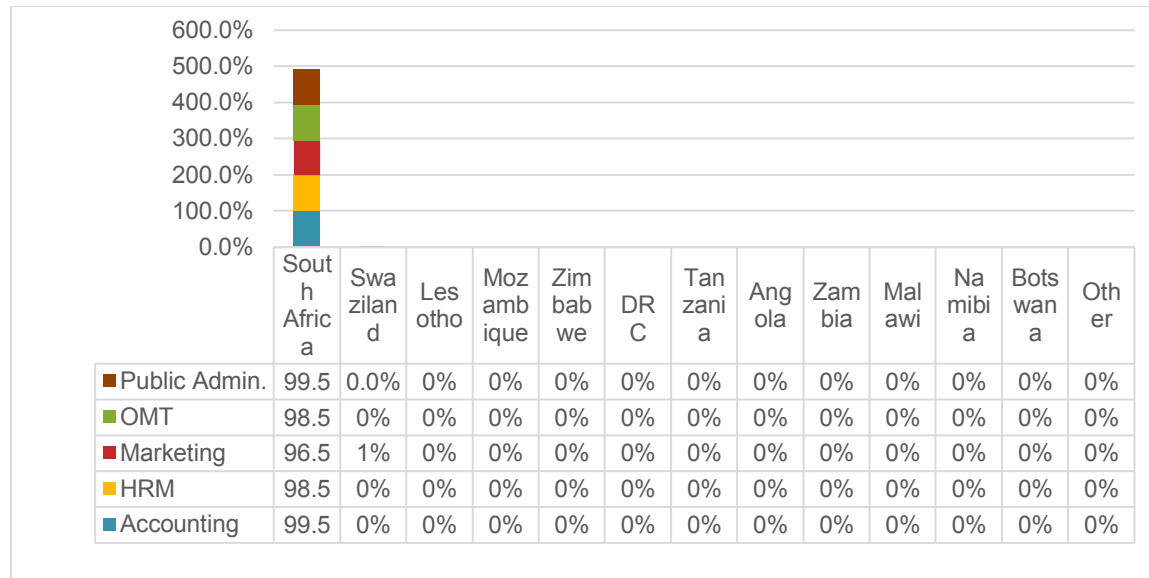
Figure 70: Respondents' country of origin per programme in Management Sciences

8.7 Current employment status of respondents in Faculty of Management Sciences

The combined employment rate in all the programmes is 12.62%. The unemployment rate on the other hand is, 70%. The highest employment rate in this faculty is in marketing, 18, 6%. The department with the highest unemployed graduates is Public Administration and Economics, 85.8%. Overall only 2.2% were self-employed. For a complete analysis see figure 71 below.

	Accounting	HRM	Marketing	OMT	Public Admin.
Studying further	21.1%	22.6%	11%	18.5%	4.7%
Unemployed	64.7%	62%	68%	70%	85.8%
Self-Employed	1.8%	1.9%	2.9%	2.3%	2.1%
Employed	11.9%	13.9%	18.6%	10.8%	7.9%
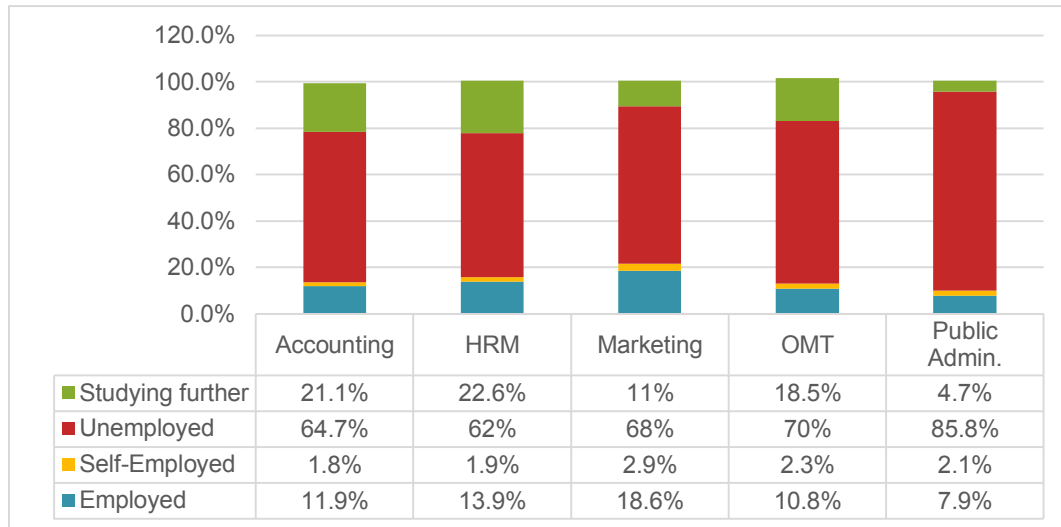
Figure 71: Current employment status of respondents in Management Sciences

8.8 Manner of recruitment for employed graduates in the Faculty of Management Sciences

For those employed, 8.8% got into their jobs through job advertisements. Figure 72 below shows the various ways in which those who were employed were recruited into their jobs.

	Recruitment from the university	Through WIL placement by MUT	Through personal contacts	Through an employment agency	Self-employed	Through a job advertisement	Not applicable
Public Admin.	0.5%	1.1%	3%	0%	1.6%	5.3%	59.5%
OMT	1.5%	0.8%	0.8%	0.8%	0.8%	9.2%	56.9%
Marketing	2.3%	1.2%	4.1%	2.3%	3.5%	9.9%	44.8%
HRM	1.9%	0.8%	2.6%	0.8%	1.1%	7.9%	50%
Accounting	0.5%	0%	2.3%	1.4%	1.8%	6.4%	57.3%
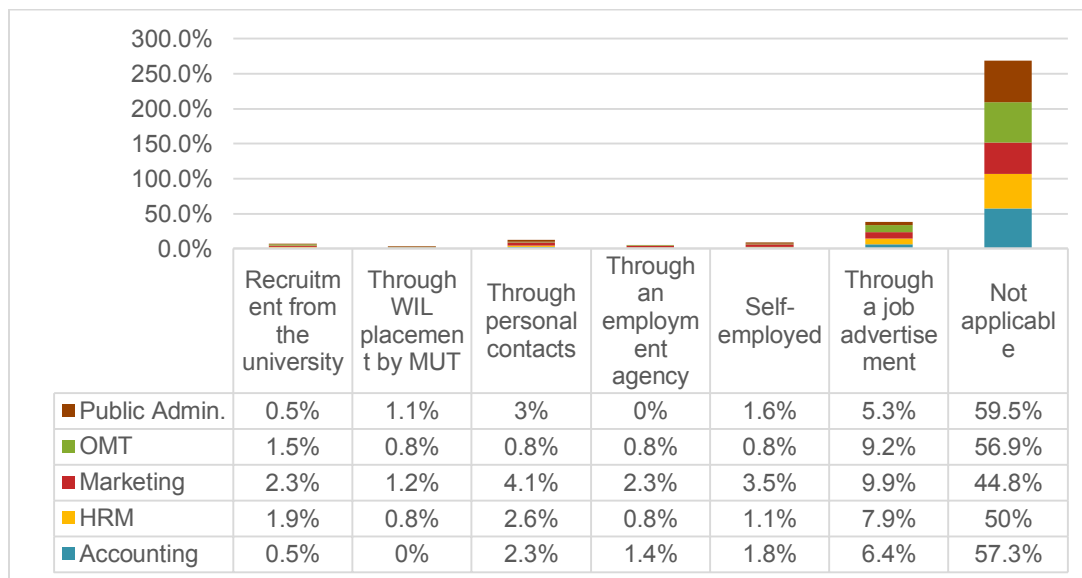
Figure 72: Manner of recruitment in Management Sciences programmes

8.9 Job related to field of study for employed graduates – Faculty of Management Sciences

About 11 % of those employed were employed in a field related to their study while 6% were not employed in a field related to what they studied.

	Accounting	HRM	Marketing	OMT	Public Admin.
■ Not applicable	55.5%	47.4%	47.7%	53.8%	61.1%
■ No	6.4%	6%	9.9%	2.3%	4.2%
■ Yes	8.7%	12.8%	13%	12.3%	6%
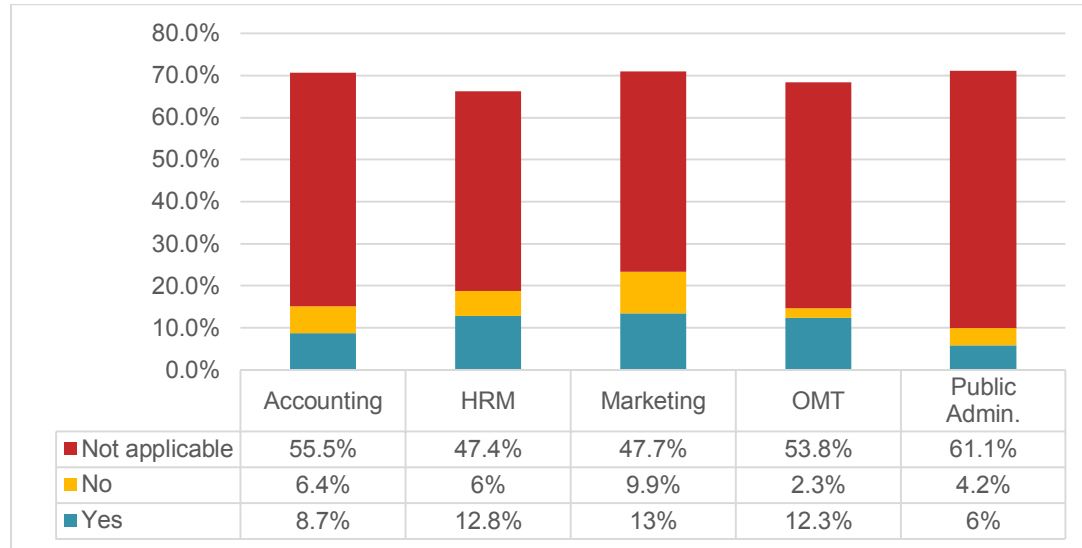
Figure 73: Job related to field of study per programme in Management Sciences

8.10 Reasons for unemployment – Faculty of Management Sciences

About 12% of those unemployed were unemployed as they were studying further. 41% of those unemployed indicated that there were unemployed as there were no opportunities for employment and 19% indicated that the reason for their unemployment is because they could not find work related to their field of study.

	Accounting	HRM	Marketing	OMT	Public Admin.
■ Studying further	16.1%	16.2%	5.2%	16.2%	6.3%
■ Not applicable	11.0%	10.5%	11.6%	17.7%	
■ No opportunities for work	33%	39.5%	33.7%	40%	59.5%
■ Interest changed	0%	0%	0.6%	0%	0%
■ Could not find work related to my field	26%	15%	27.3%	10.8%	16.3%
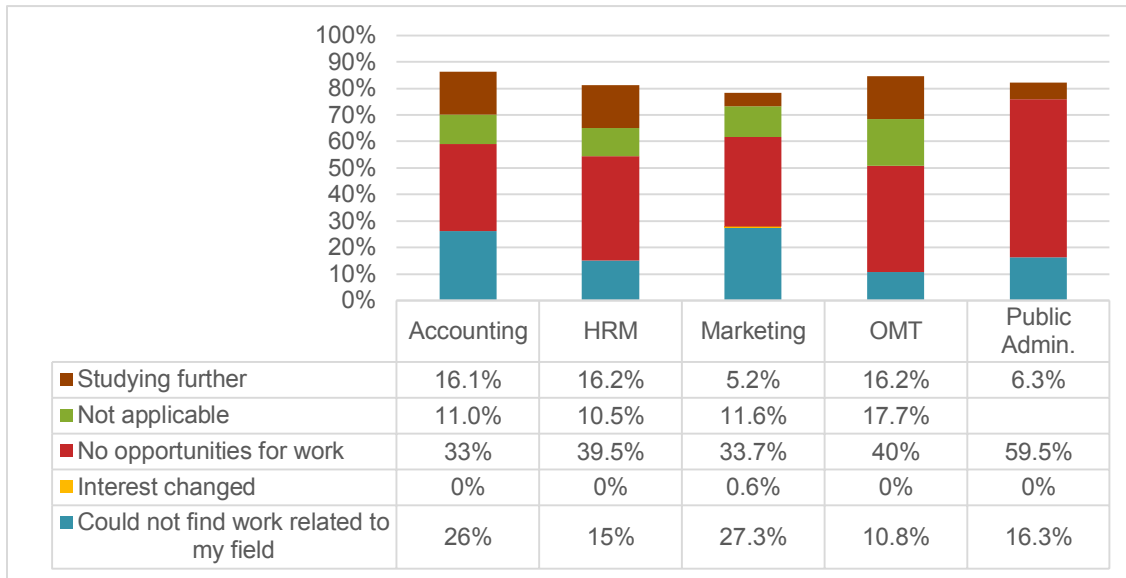
Figure 74: Reasons for unemployment of respondents in management sciences programmes

8.11 Further Studies

For those studying, 9% were studying part time while 23% were studying full-time. About 64% of the unemployed were not studying further.

	Accounting	HRM	Marketing	OMT	Public Admin.
■ Part-time	10.1%	7.5%	14%	8.5%	5.8%
■ Full-time	24.3%	33.1%	10.5%	38.5%	8.9%
■ No further studies	62.8%	54.9%	72.1%	47.7%	81.1%
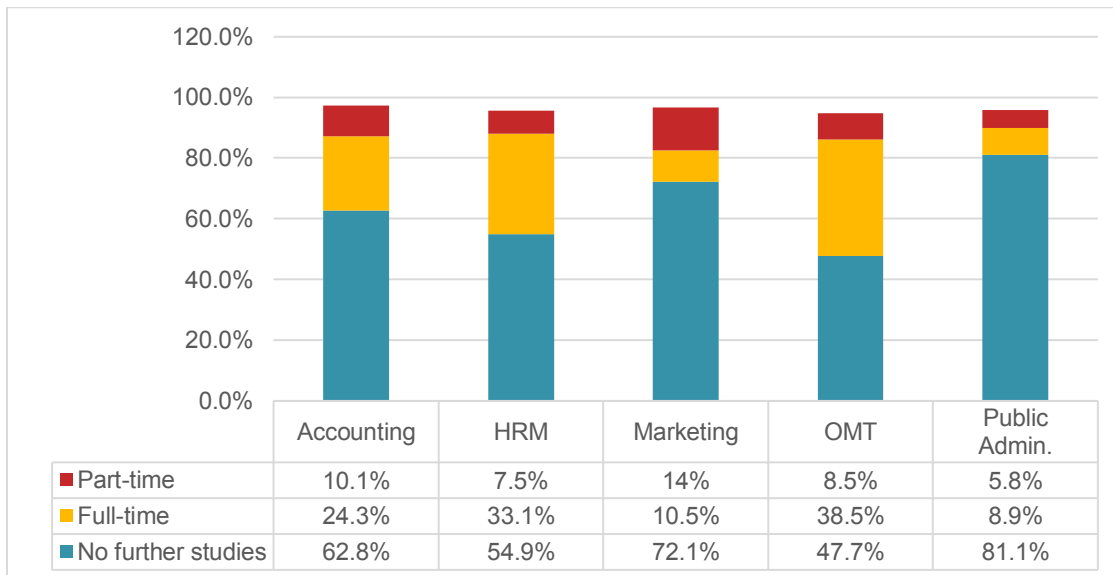
Figure 75: Further studies in Management Sciences programmes

8.12 Overall University experience in Faculty of Management Sciences

The graphs below, Figures 65 - 68 indicate that majority of graduates agree with the various variables that they were to rate in the scale. In all the variables graduates rated the variable "agree" was rated above 40% except "accessible WI-FI" which was rated 29%. Accessibility of WI-FI needs to be given high priority.

Respondents' study experience

	Standard of Work	Work Confidently	Communication Skills	Study further	Further programmes
Strongly Disagree	0.9%	1.4%	0.9%	1%	6.2%
Disagree	1.1%	1.5%	2.8%	6%	14.8%
Agree	71.9%	49.9%	44.1%	52%	43.6%
Strongly Agree	26.1%	47.2%	52%	41%	35.4%
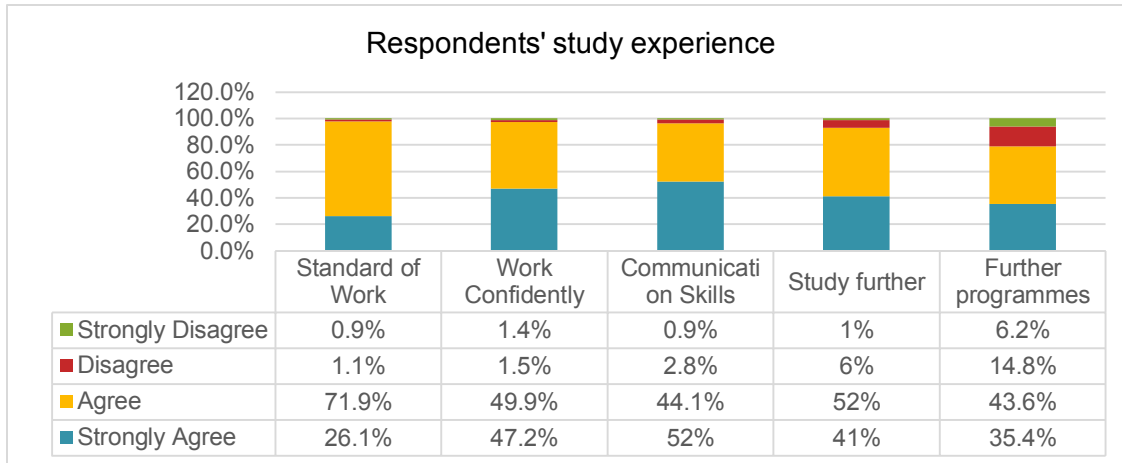
Figure 76: Respondents' study experience (Faculty of Management Sciences)

Respondents' study experience

	Teaching and Learning materials appropriate	Lecturers' Motivations	Library Resources	Lecture venues appropriate	Safety and security provided
Strongly Disagree	1.4%	1.2%	4.7%	4%	3.7%
Disagree	5.9%	4.2%	19.6%	13%	12.1%
Agree	61%	46.7%	54.2%	60.6%	62.6%
Strongly Agree	31.3%	47.9%	21.6%	22.5%	21.6%
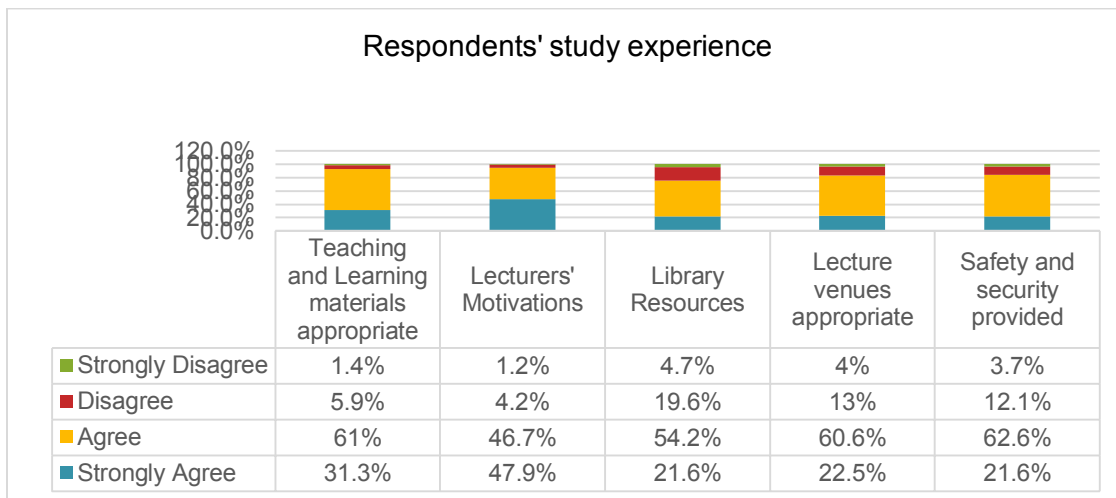
Figure 77: Respondents' study experience (Faculty of Management Sciences)
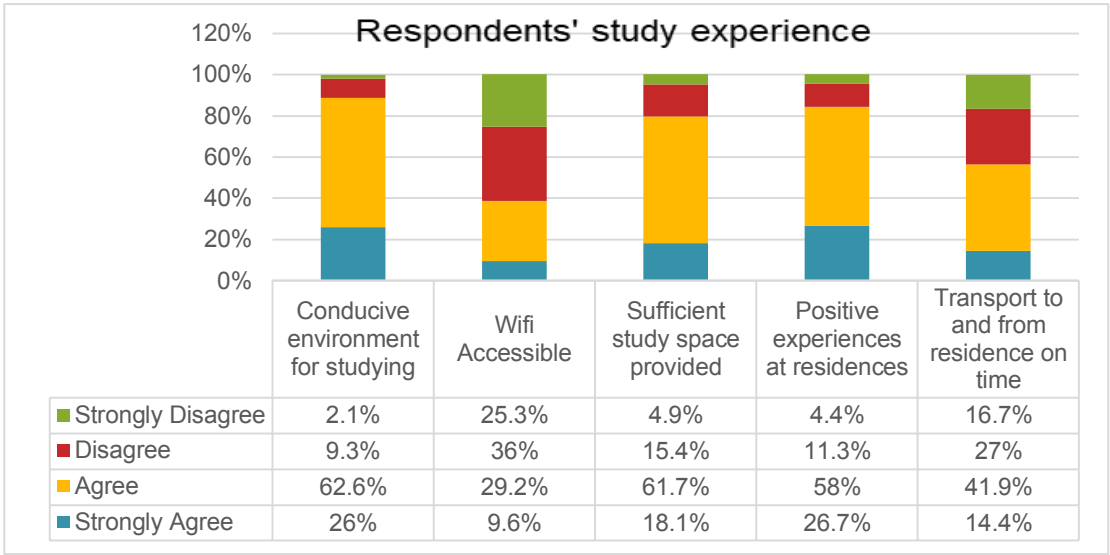
Figure 78: Respondents' study experience (Faculty of Management Sciences)

	Conducive environment for studying	Wifi Accessible	Sufficient study space provided	Positive experiences at residences	Transport to and from residence on time
Strongly Disagree	2.1%	25.3%	4.9%	4.4%	16.7%
Disagree	9.3%	36%	15.4%	11.3%	27%
Agree	62.6%	29.2%	61.7%	58%	41.9%
Strongly Agree	26%	9.6%	18.1%	26.7%	14.4%
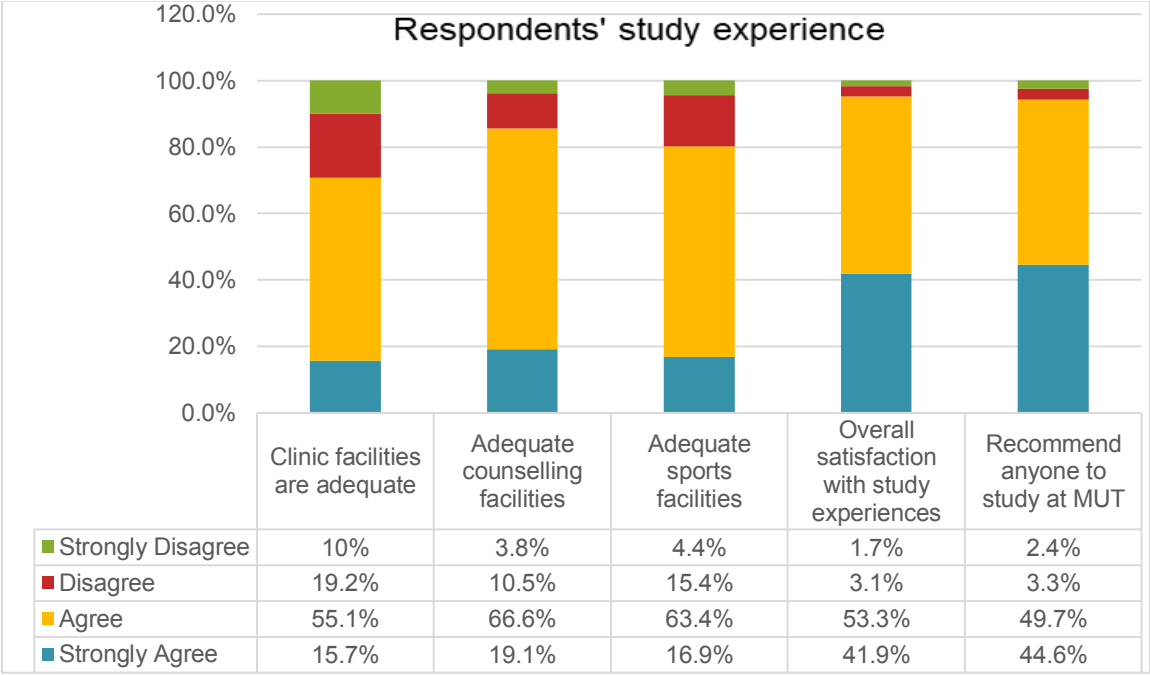
Figure 79: Respondents' study experience (Faculty of Management Sciences)

	Clinic facilities are adequate	Adequate counselling facilities	Adequate sports facilities	Overall satisfaction with study experiences	Recommend anyone to study at MUT
Strongly Disagree	10%	3.8%	4.4%	1.7%	2.4%
Disagree	19.2%	10.5%	15.4%	3.1%	3.3%
Agree	55.1%	66.6%	63.4%	53.3%	49.7%
Strongly Agree	15.7%	19.1%	16.9%	41.9%	44.6%

8.13 VIEWS ON IMPROVING THE QUALITY OF EDUCATION OFFERED AT MUT

Table 5: Respondents' views on improving the quality of education offered at MUT (Management Sciences' programmes)

FACULTY OF MANAGEMENT SCIENCES					
INFRASTRUCTURE	DELIVERY/HUMAN RESOURCES	CURRICULUM/ TEACHING AND LEARNING	CAMPUS ACTIVITIES	WIL	SAFETY
• Provide Wi-Fi to students so they can be able to do Research for their studies and improve lecture halls. • They must improve technology, or online because of the long queues. • They should extend/build more venues that will be able to accommodate all students per class especially first year students. • Operate the Resource Centre	• Improve in the quality of recruiting qualified lecturers who are passionate about facilitating learning. • Hire more experienced lecturers and try to teach more in English. • They must implement strategies that will focus on the development of self-confidence to students, • There must be a minimum qualification of a Masters for all	• The way of conducting lectures can be improved through using more than technology, e.g. e-learning, Visual classes and etc. • By involving everything pertaining the students' modules to be more competitive among other institutions. • By doing more of practical and	• By accommodating all student from all backgrounds and genders, to develop social activities and consistently empower youth, skills and development academically and socially.	• Graduates should be provided with internships and learnerships by MUT corporates. • Provide more practicals and in-service training opportunities within the Management	

24 hours as well as Clinic just in case of emergency to students who engage themselves to cross night self-service.	lecturers in all fields.	Presentations so that students can be in a quality standard.		Sciences faculty.
• Library resources are outdated they must buy updated study material.	• Lectures must always be on time for classes and also report in time if they cannot make it in class.	• The university should offer a better curriculum that offers Entrepreneurial studies and encourage students to		• Student face challenges on finding in-service training. MUT should improve its Co-Operative Education Department in assisting students
• Transport from residence to university must increase so that students must be in class on time.	• Tutors should be limited in facilitating for in class not to mark or assess anything.	• To be creators rather than job seekers.		
• MUT should improve quality of education by giving sufficient computers at the Library for students to study also to increase more practical in the study.	• MUT is a university of technology, it should the best and can do better technological. Lecturers do not make use of Blackboard	• The university should introduce e-learning in lecture rooms.		• By provide practical activities for Accounting students to gain more confidence in the
	• Allow the lecturer to make a slot when there is a class or period the lecturer missed.	• Advanced Diploma for Public Finance and Accounting so we can		
	• By providing enough study			

• Smart board must be in all class or venue.	material to students.	advance our studies and be able to		programme.
• Install air conditioners at lecture halls.	• By developing new ways of teaching and also the person	compete with other students from other		• Would recommend them to offer internship
• Be aware of Financial Aid corruption in our NSFAS.	who is responsible for maintaining Smartboards	universities when we looking for employment.		programmes for Marketing students
• Marketing of MUT brand.	must always check if it is	• Must improve practical		so that they
• Funding must be available online for BTech and Advanced Diploma for students.	working frustrate the lecturer and we end up using Projector	assessment like Pastel Accounting and Payroll Accounting.		won't suffer for experience when needed.
• Providing accommodation for new students.	• I would recommend extra classes for those who are	• Study material be given in time		• Extend the time of Work Integrated
• They can start by reducing strikes to ensure study time is not wasted.	doing part time.	• Mentorship programmes can be provided to		Learning, (in-service training).
• E-learning to be accessible to all students.	• Added more staff workers at Step 7 and Step 5.	drive students to be and do		• By providing students with in-
• Change transportation issue, it's got an adverse effect in	• It takes long time to get help.	better.		
	• As long as it is still controlled and managed by Blacks, I see no future in this institution hence	• Make means of providing facilities like to provide		

the teaching and learning. - MUT must encourage teaching and learning development centres. - Library closes early student can't access information at night. There are few computer labs and some students graduate with no experience and struggle to find jobs. - By building more residence spaces to help even post graduate students to expand on their studies and also by putting more funding for Advanced Diploma	they always fail to provide for students. - MUT is a university of technology, it should the best and can do better technological. Lecturers do not make use of Blackboard - Allow the lecturer to make a slot when there is a class or period the lecturer missed. - By providing enough study material to students. - By developing new ways of teaching and also the person who is responsible for maintaining Smartboards must always check if it is	with study guides and also make use of technology as the institute of technology. - MUT must ensure that students must be educated with new editions of books and Communication Language must try to be done from first to third students, because that language is a problem to students (English). - The Lecturers should avoid lecturing in IsiZulu.		service training (Public Administration)

students to study further. • MUT must improve channels of communication, so that they would be able to attend many students to come further their studies. • Have safe and secure environments in the campus and residences. • If possible add Accounting lab, we need more excess to computers since Accounting now has to do Software E.g. Pastel and BAS. • MUT has to build more computer labs for students because we as postgraduate students experienced	working frustrate the lecturer and we end up using Projector • I would recommend extra classes for those who are doing part time. • Added more staff workers at Step 7 and Step 5. • Maintaining balance of all races within the institution. • By inviting officials related to each department and courses to speak and advise students and to assist them to understand about the fields and what is happening in the working area.	• They need more lecturers because some of the progress are lacking with lectures. In general, Marketing have two years of advance while other programmes have one year in advance. • They should also consider Digital Marketing • MUT needs to improve more into technology advance, provide students with more skills into Business Entrepreneurs.			

some difficulties concerning accessing the Postgrad Lab and ended up not having a venue to do assignments. The Lab should not be available for any bookings. • We (OMT) didn't have Tutor, we were supposed to practice on our own. When we were writing exams or a test the computers were giving us problem, some of the computers were not working.	• The workers need to improve their attitude because sometimes you leave without getting help or spend the whole day at the queues. • Provide more tutors, mentors, the teaching and learning in HRM must be also practical, for example, a student occupy a position a company with HRM. • By encouraging lecturers to study even further attend workshops so that they educate students the best way possible so MUT can produce the	• The university must have Project Management and post graduates in Office Management and Technology • not put too much work pressure on students because this make us as students to not able to focus on our modules, because there is so much in short space of time. • can improve their quality of education by adding more courses like Supply Chain and			

	best graduate in South Africa. • Hire well experienced and qualified lecturers. • The university should stick to time, if the evening class is at 16:00 it should make sure that students end on time which is 20:00 not less than that. • MUT needs to employ more lecturers especially for Evening classes. • By having good management that always cater for students needs and have access to Wi-Fi without requiring to sign in to student portal	other courses (Public Administratio n). • We enjoy being students of MUT so we want to come back to do our Master's degree and Honours and etc.			

	and have password visible. Transparency is key.				

8.14 Some Key Findings in Faculty of Management Sciences

Unemployment stands at 70%;

About 16% of those who participated in the survey were studying further;

Employment status stands at 13%.

9. SUMMARY

For a holistic appreciation of the graduate survey findings, the university community should engage the report with a view to understand the concerns and inputs that are made by graduates who passed through the University and have a good understanding of the University 's offerings. Engaging the report in a piecemeal manner might not provide the whole picture that is being painted by the report.

10. RECOMMENDATIONS

The generic recommendations below are based on the findings that are contained in the report. The list is not exhaustive but serves as a guide to highlight some of the findings.

Recommendation 1

The low employment rate among graduates across all faculties is a great concern. Given the state of the economy and other factors influencing employment opportunities it becomes imperative that entrepreneurship should be given priority as a way to encourage graduates to create employment for themselves and other people through business ventures.

Recommendation 2

The graduate survey shows that the majority of the participants in the study come from Kwazulu-Natal. It is recommended that the University should work very hard to expand the catchment area for the institution in order to introduce some level of diversity in the student body and enrich the student experience.

Recommendation 3

The participants also indicate that the lack of diverse postgraduate programme is a hindrance for them studying further. The development of new porgrammes should be given a special attention in order to provide an opportunity for graduates to study further particularly in view of the finding that a lot of graduates do not have employment.

Recommendation 4

The improvement of infrastructure on and off campus is one of the findings that come out strongly among the views expressed by the participating graduates in the survey. These range from improvement of the lecture hall infrastructure, WI-FI on and off campus, labs and library.

Recommendation 5

The provision of a bus service shuttling students to and from the various residences off campus.

Recommendation 6

The participants also indicated the need to prepare them (students) through WIL and other interventions for the world of work. This points to the need to prepare students to be competitive through the processes of hiring by introducing interventions that will improve their articulation competencies.

11. CONCLUSION

The significance of the graduate survey is that faculties and departments will find rich data that they could use to improve the situation regarding their services or provision. On the other hand, the University will have at its disposal useful data they it could use to improve various aspects of the University from improvement of infrastructure, safety and the general improvement of the University's provision. This in turn, will improve the experience of students in the University and ultimately lead to students' success. Once the students experience and support systems are improved in the University it is hoped that most graduates will choose the University as the institution of choice when they want to study further.