



**FACTORS IMPACTING POSTGRADUATE THROUGHPUT RATES AT A
SOUTH AFRICAN UNIVERSITY OF TECHNOLOGY**

by

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Master of Technology Business Administration in Project Management

in the Faculty of Business

at the Cape Peninsula University of Technology

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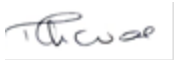
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DECLARATION

I, Thakane Khauoe, declare that the contents of this thesis on factors impacting postgraduate throughput rates at a South African University of Technology, submitted to the Cape Peninsula University of Technology, for the degree of M-Tech: Business Administration in Project Management is my work. The conclusions are those of the author and not necessarily those of the Cape Peninsula University of Technology.



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ABSTRACT

Throughput rates, student retention, and dropout rates of postgraduate students remain a critical concern facing higher education institutions around the globe. Higher education institutions continuously strive to find ways in which the various stakeholders can make important decisions to ensure acceleration of throughput rates amongst postgraduate students at these institutions, particularly because the economic crisis relies highly on learned and skillful personnel to stir nations towards developmental goals. Industries requiring skilled personnel are often disappointed by the absence of people able to come to task and this results in a poorer industry when compromises are made to fulfill positions.

This study highlighted the most common factors that affect the throughput rates of postgraduate students globally, as well as within South African higher education institutions. This study, however, aimed to investigate the factors that impact throughput rates of postgraduate students at one of the Universities of Technology in South Africa. To achieve the results, a structured questionnaire was administered to Masters's students that have registered at the university since 2012. This research used a mixed-methods approach which includes both qualitative and quantitative research and used a structured questionnaire to collect data.

The findings of this study have highlighted that work commitment, supervisor relationship, lack of time management, and the fact that research is a grey area as factors that affected throughput rate of postgraduate students at the University of Technology. Based on the findings and conclusions of the study, it is recommended that more support should be provided to those students that are struggling with work commitments, relationships with supervisors should be encouraged and enhanced, use of planners should be encouraged by breaking down the research into milestones and enforcing timeframes with major consequences to tackle time management and for those that are struggling with the research part of their studies, more exposure of research at the undergraduate level is required.

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LIST OF ACRONYMS

DoHE - Department of Higher Education

DoE - Department of Education

NDP - National Development Plan

DoHET - Department of Higher Education and Training

SADC - South African Development Community

HRDC - Human Resource Development Council

NRF - National Research Foundation

BRICS - Brazil, Russia, India, China and South Africa

UKZN - University of KwaZulu Natal

UNISA - University of South Africa

WSU - Walter Sisulu University

DUT - Durban University of Technology

UL - University of Limpopo

UCT - University of Cape Town

CPUT - Cape Peninsula University of Technology

CHAPTER ONE- INTRODUCTION

1.1 Introduction

Low numbers of graduations among postgraduate students have for a while now become a major concern in South Africa, particularly because the economic crisis relies highly on learned and skillful personnel to stir the country towards its developmental goals. Institutions of higher learning as well as the Department of Higher Education (DoHE) have jointly lamented dwindling numbers of postgraduate students failing to either make the finishing line in record time or abandoning their respective courses. These premature departures have been shown to adversely impact on economic activities both in the education sector and the industry. Continued observations of this behavior will not only bring into question the credibility of the education sector but also its reliability to dispose of qualified personnel into the industry. The industry itself stands to suffer the most without an adequately skilled workforce required to propel a technical industry towards desired developments.

The correlation between the education offered and its ability to be imparted effectively is an important consideration for leveraging the South African economy. As indicated by Letseka and Maile (2008:1), the low production of graduates negatively affects the South African economy with its industry particularly short-changed by inadequacy of critical skills which is required for economic development. The low throughput rate; or as is ordinarily known, the low graduate rate among postgraduate students has become a regular feature experienced by institutions of higher learning nationwide.

This failure rate further creates a huge demand for high skills within the growing South African economy. Industries requiring skilled personnel are often disappointed by people not being able to efficiently contribute to the productivity in an organization. This contention; is upheld by Zewotir et al. (2015:1) who argues that “the growth of a country

largely depends on graduates with the necessary skills and knowledge to compete globally”. Zewotir further emphasizes that the onus to produce highly capable students rests solely on institutions of higher learning, as they are the only facilities enabled with grooming future contributors of knowledge to a country.

According to The National Plan on Higher Education in South Africa (2001:4), the higher education system is marred with challenges of restoring and compensating for past discriminations. Most objectives of the National Plan address critical needs of the country as well as opportunities for all. The document indicates that it is important to develop the country’s citizens and make provision of high-level training and application of new knowledge to assist with the improvement of the country’s economy.

Sonn (2016:227) argues that South Africa, like many other countries, needs to improve productivity to become economically competitive. To accomplish these, higher education institutions need to increase cohorts at the postgraduate level and invest more in research and technology, as these will lead to a significant increase of required critical skills within the labor sector. This study, therefore, investigates the realities faced by postgraduate students at one of the largest Universities of Technology in South Africa, which are hindering their progress towards the accomplishment of their postgraduate degrees.

1.2 Problem statement

Despite a policy shift by the Department of Higher Education to improve student throughput rate, a substantial number of universities in South Africa are still experiencing high drop-out rates and in some cases, students take longer periods to complete their postgraduate studies. Institutions are therefore left with a substantial rate of retention in their systems. A 2008 study conducted by Letseka and Maile (2008:1) demonstrated that even the Department of Education (DoE) was impacted negatively by the country’s 15% graduation rate which was then considered the lowest in the world. Furthermore, as cited

by Bopape (2018:3), in 2015 that the Department of Higher Education reported that 9% of students failed to complete their postgraduate studies.

The issue of university drop-outs or any hindrances to postgraduate students to finish their courses needs to be addressed. As Zewotir et al (2015:1) indicate the issue of university throughput rate affects the world at large. This position is also upheld by Som (2006:227) who mentions that countries worldwide, both developing and developed countries, are now prioritizing improving education and training of local citizens by promoting postgraduate qualifications to assist in mending economic challenges.

In realizing the throughput challenges affecting the education sector, The National Development Plan (NDP) 2013 has put in place measures to address these challenges. These measures included recommendations that called for the deployment of highly qualified academic staff within institutions of higher learning. Additionally, NDP recommended that institutions double the percentage of doctoral degree holders of staff members in the higher education sector from 34 percent to over 75 percent by 2030. The proposal also anticipated a 25 percent increase in enrolments of Masters and Ph.D. students across South African universities by 2030. This study, therefore, seeks to align itself with NDP proposals by among other things, identifying factors believed to contribute to the failure rate of postgraduate students; offered through interviews undertaken with students and staff members from the University of Technology.

Following the enthusiastic measures, Som (2016:226) mentions that the NDP hoped for better results. The policy aimed at a higher expectancy rate of at least 100 doctoral graduates per million per year to be produced by higher education institutions by the year 2030. Additionally, in the proposals provided by the NDP, the recommendation is to improve the qualification for academic staff in the higher education sector as well as double the percentage of the qualified doctoral degrees.

Table 1.1 below indicates the rate of graduation and retention in one of the departments at the university

Table 1.1 Masters Students Throughput Rate at a University of Technology in South Africa

Year	Cohort	Total No. Graduates	Total % Graduates	Total Retention	Total (%) Retention
2012	320	101	31.6	22	6.9
2013	355	102	28.7	48	13.5
2014	458	92	20.0	71	15.5
2015	414	25	6.0	112	27.1
2016	706	40	5.7	291	41.2
2017	658	15	2.3	437	66.4

Source: Records of Masters' students at a University of Technology in South Africa

Despite an existing problem of skills shortage in South Africa, which means the NDP requirement cannot be met, this challenge can be overcome more by a mutual understanding forged by both Government and its counterpart within the private sector. Daniels (2007:1) maintains that it is clear economists and governments have a different view when it comes to skills shortages in this country. Economists relate skills to productivity, however, the government does not consider the relationship between the two. It should also be taken into consideration that, once a skill has been attained, there are professional bodies that are established to recognize the individuals with certain skills and it is important to assist the department of education to fulfill its mandate so that the country can achieve the highest number of professionally registered individuals into their respective professions.

1.3 Rationale and significance of the study

The significance of this study is that it aims to assist the University of Technology in placing intervention strategies aligned with addressing and responding to grievances raised by prospective postgraduate students in their endeavors towards completion of their courses. Their concerns, including matters related to factors affecting them both personally and academically, and other raised matters, may significantly expose gaps linked to high dropout rates. Consideration of such recommendations may further assist the departments responsible to engage more efforts towards securing better results for all. These recommendations will assist in improving the throughput rates at the university. Once the strategies have been identified, they can be recommended to the Department of Education for implementation and where necessary, to other universities in South Africa.

Moreover, when throughput rates of postgraduate students are improved, there will not be a shortage of much-needed critical skills, especially in the academic industry. Also, the economy of the country will progressively grow and the country will be able to compete in this globally competitive world. It is also important to note that one of the most important skills requirement across many fields is Project Management but is unfortunate that many university professionals lack this skill. In addressing the challenges within one of the departments, it may help to increase the number of professionally registered project managers with their professional bodies.

1.4 Aims and Objectives of the study

The objectives of the study are divided into primary and secondary objectives.

i. Primary objective:

To investigate the main factors that affect the throughput rate of postgraduate students at a University of Technology.

ii. Secondary objectives:

- To examine the current throughput and dropout rates of postgraduate students at a University of Technology;
- To identify challenges that impact the throughput rate of postgraduate students;
- To provide recommendations, after analysis of results, to improve throughput rates at the University of Technology.

1.5 Research questions

This study will respond to the following questions:

- a. What are the current throughput and dropout rates of postgraduate students at the University of Technology?
- b. What are the factors that affect throughput rates of postgraduate students at a University of Technology? and
- c. What are the recommendations to improve throughput rates of postgraduate students at the University of Technology?

1.6 Research Paradigm, Methods and Design, and Methodologies

Paradigm - Welman et al, (2005:6) cited that there are two main types of research methods that are commonly used, namely, Quantitative (Positivist) and Qualitative (Anti-positivist) research methods.

Quantitative (Positivist) research – features a natural-scientific methods in human behavior and research is limited to investigations that are observable and be objectively measured. Positivists believe that there is a single reality, which can be measured and

known, and therefore they are more likely to use quantitative methods to measure this reality.

Qualitative (Anti-positivist) research – this method uses open-ended questions and interviews to get peoples' sentiments and beliefs regarding aspects of research. Constructivists believe that there is no single reality or truth, and therefore reality needs to be interpreted, and therefore they are more likely to use qualitative methods to get those multiple realities.

Geelan (2015:1) cited that, over years mixed research method has been described as the third research method as it compliments both qualitative and quantitative methods of research. Pragmatists believe that reality is constantly renegotiated, debated, interpreted, and therefore the best method to use is the one that solves the problem.

The choice of method to be used is based on the type of questions, nature of research, samples, or population.

Methods

This research used a mixed-method which includes both qualitative and quantitative research and uses a structured questionnaire to collect data. Wisdom and Creswell (2013:1) cited that the use of both approaches is the best option or approach for integration purposes. It is believed that integration of the two methods allows full collaboration of data collection and analysis.

Design and Methodologies

Welman *et al.* (2005:52) define research design as a plan that describes the participants or focus groups and how the information will be collected from these participants or focus

groups. The plan also provides clarity on what will happen and who the participants or focus groups are, to reach conclusions regarding research questions and research problems. For this research, a mixed-method (qualitative and quantitative) approach was used. It is believed that integration of the two methods allows full collaboration of data collection and analysis (Wisdom and Creswell 2013:1). According to Welman (2005: 52) et al, the population is an object of interest for the study or research. This can consist of groups, individuals, organizations, events, and many other objects that can be relevant to a particular study. For this research, probability-sampling methods were used. The focus group is Masters students that enrolled (can be currently enrolled and those that dropped out) in one of the departments at the University of Technology. This group of students is more relevant as they will be able to provide challenges they experienced during their studies.

1.7 Summary of chapters

Chapter 1 - Introduction – This chapter provides the introduction and background of the study. This is where the initial idea of the research is clarified. This chapter also highlights the problem statement of the study and provides the importance of the study. This chapter also includes the research questions and objectives of the study. This indicates what the study would like to achieve.

Chapter 2 - Literature review - This chapter is the heart of the research that reflects views and information from other researches that have been carried out addressing the stated problem or similar. This chapter identifies the conclusions from previous researchers as well as providing recommendations and identifying gaps from previous research.

Chapter 3 - Research methodology – this chapter outlines the techniques and methodology that the study followed. It also indicates sampling methods and size of the sample, data collection techniques, and analysis.

Chapter 4 - Research Findings, Analysis and Interpretation – this section of the research provides findings, present, and analyze these findings.

Chapter 5 - Summary of results, conclusions, and recommendations – This is the last chapter and it provides conclusions drawn and provides recommendations regarding critical aspects raised.

CHAPTER TWO - LITERATURE REVIEW

2.1 Introduction

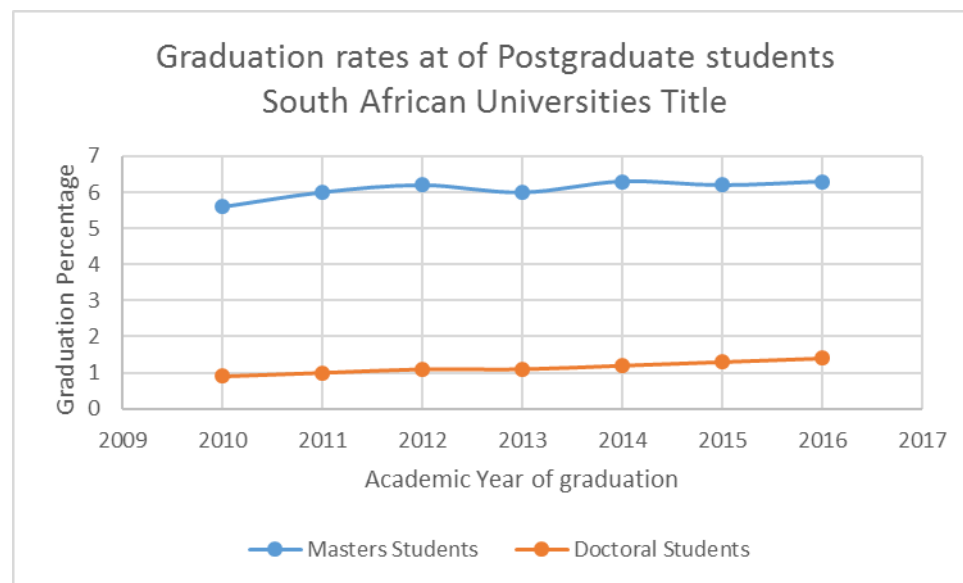
Throughput rates of postgraduate students have been a major concern amongst South Africa's Higher Education institutions and the Department of Higher Education (DoHE) at large. Hadi and Muhammad (2019:59) indicate however that postgraduate issues are not only experienced by underdeveloped or developing countries but extend to developed countries, although developed countries prioritize to attend and address the issues within a short period due to availability of resources. As indicated by Letseka and Maile (2008:1), the National Plan for Higher Education of 2001 is also hugely concerned by low rates of South Africa's graduation amongst the higher education institutions. Sonn (2016:228) quotes the displeasure displayed by the Department of Higher Education and Training (DoHET) blaming the incompetence on part of the higher education sector. This chapter will therefore discuss the factors that affect postgraduate throughput rates at one of the universities of technology in South Africa. This chapter will also cover the effects of retention of postgraduate students, the need for critical skills, postgraduate throughput trends, and the perspective of South Africa and African countries in terms of postgraduate throughput rates.

2.2 Postgraduate education and trends

In the South African context and for this research, postgraduate studies or education refer to advanced studies that follow a three-year bachelor's degree and these postgraduate studies include honors, masters, and doctoral degrees (Dominquez-Whitehead 2015:914). As stated by Hoon *et al.* (2019:124), the nature of postgraduate studies usually requires independent work and it can be carried out on a full-time basis or part-time which will also affect the completion period.

Styger *et al.* (2015:2) cited, in the United States of America, if and when students return for an extra additional year to complete their studies, this affects the reputation of the institution among its peers and in the United Kingdom, this problem affects the institutions' external funding recruitment hence, the need to address the issues speedily. Furthermore, Sonn also added that the retention rates, as well as high dropout rates, are also considered a huge waste of resources as the sector is highly subsidized and these finances could be used in expanding the higher education sector systems and to redress past inequalities. Furthermore, according to Badsha and Cloete (2011:2) when students drop out, the financial loss affects the teaching input unit and research output unit, which forms part of government subsidy. Styger *et al* (2015:2) also agree that dropping out of postgraduate students causes significant human capital wastage.

Figure 2.1 Graduation rates of postgraduate students at universities in South Africa

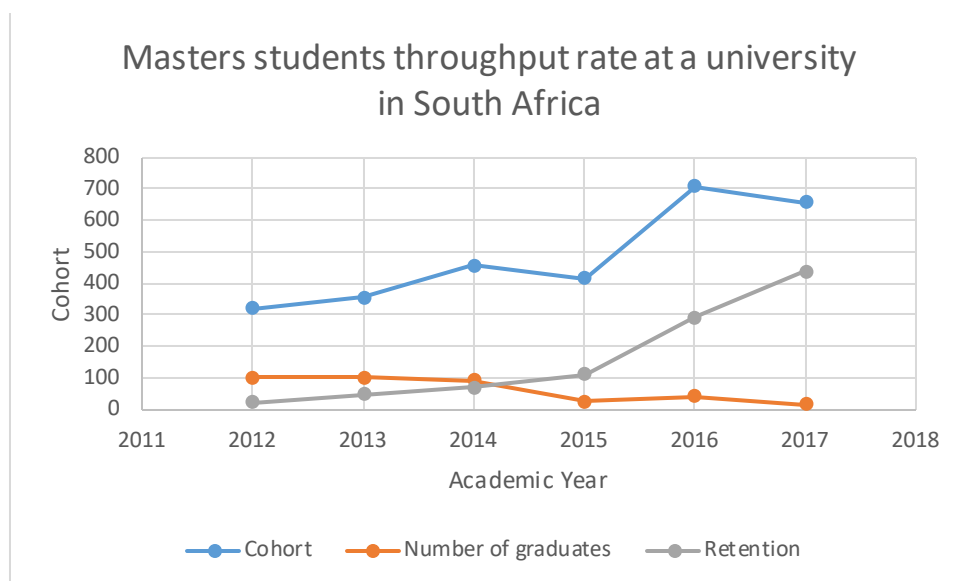


Source: Stats SA: March 2019

Barnard and Fourie (2013:2) also agreed with the fact that national and international higher education institutions are experiencing low throughput and this affects the limited resources

within the institutions and unnecessarily puts students under enormous financial and emotional pressure.

Figure 2. 2 Masters Students Throughput Rate in one of the departments at a University in South Africa

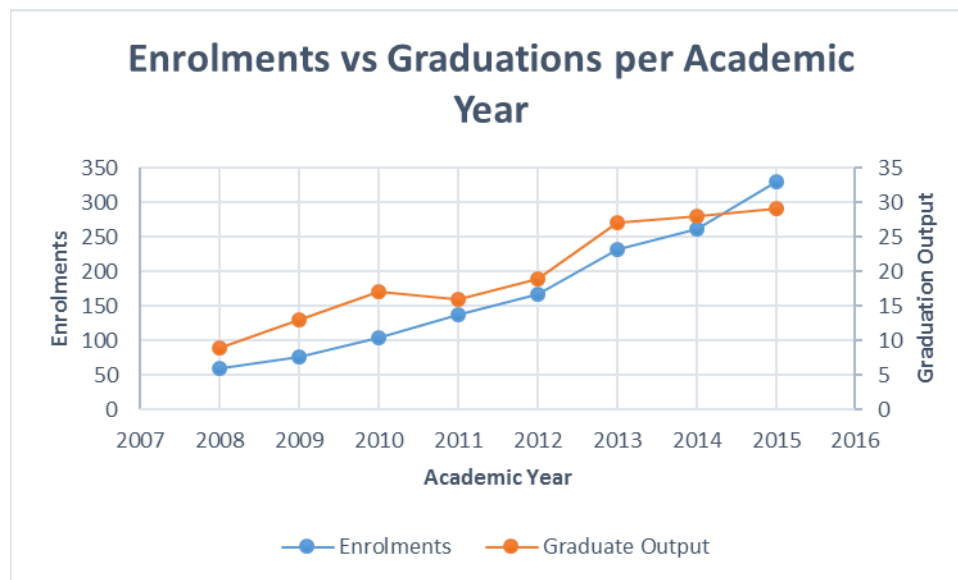


Source: Records of Masters Students at one of the departments at a University in South Africa

Table 2.1 and Figure 2.2 reflect the throughput rates of Masters’s students in one of the departments of the universities in South Africa between 2012 and 2017. As per the table and the figure above, retention of the students has been increasing but the graduation rate has been dropping. Similarly, according to Marnewick and Pretorius (2016:1), there is a substantial increase in the number of registered postgraduate students in universities across the globe, however, this number does not equate to the number of graduates at the same level.

Figure 2.3 below indicates enrolments when compared to the graduation rate of postgraduate students. There is a steady but low rate of graduation throughout the years.

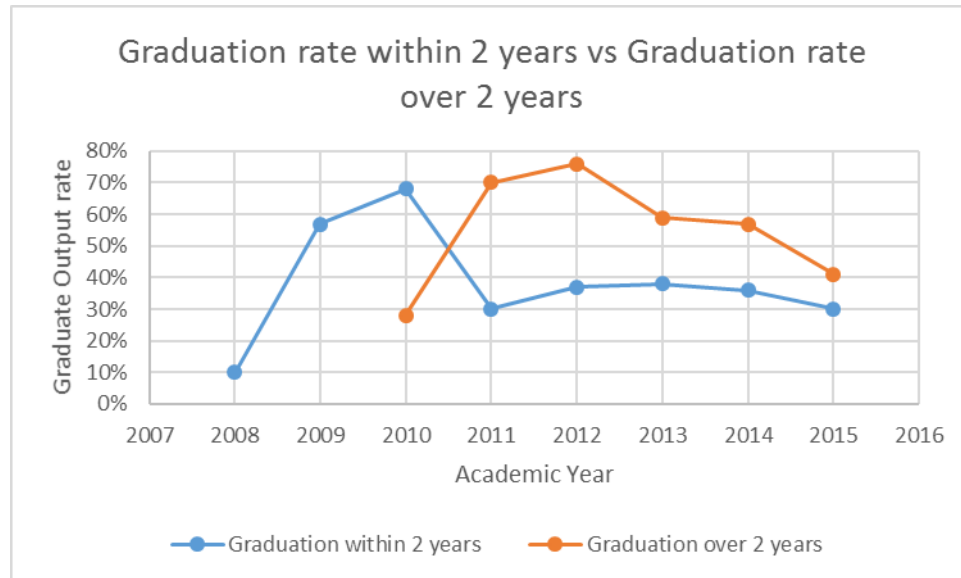
Figure 2.3 Enrolments vs Graduation Rates at South African universities



Source: Marnewick and Pretorius (2016)

On average, a lot more postgraduate students take longer than 3.3 years to complete their studies indicating that students do experience certain challenges during their postgraduate studies.

Figure 2.4 Graduation rates between 2 years and over 2 years at South African universities



Source: Marnewick and Pretorius (2016)

Jepsen and Varhegyi (2011:605) state that the need for universities to offer postgraduate studies, which are more specialist and generalist curricula, is to respond to societal and business needs. Marnewick and Pretorius (2016:2-5) indicated that South Africa had a 10-year plan to grow and increase the number of doctoral students in the field of Science, Engineering, and Technology to 3000 per year, by 2018 and to achieve this plan, the masters' graduation rate needed to be increased as well as maintain the quality of the student output.

The 2.2 indicates that the enrolment growth has significantly exceeded expectations with an average growth rate of 20 to 39% each year.

Table 2.1 Enrolment growth rate of Masters Students per academic Year

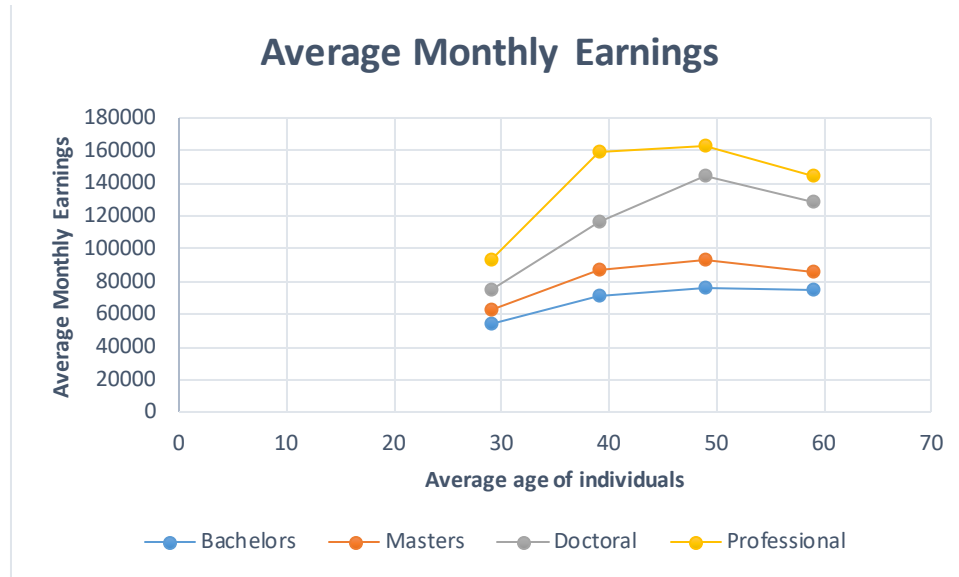
	HEADCOUNT ENROLMENTS							
	2008	2009	2010	2011	2012	2013	2014	2015
Total Headcount	59	77	104	138	167	232	261	329
Annual growth of enrolments	9%	31%	35%	33%	21%	39%	13%	26%

Source: Marnewick and Pretorius (2016)

To support this argument, Baguley *et al.* (2015:163) reiterate that students often embark on postgraduate studies with belief that a higher degree would increase their chances at better job opportunities which will further lead to their improved personal development and independence. Upholding this contention is Di and Wen (2014:2), who added that a decision for students to consider postgraduate students is also influenced by factors such as social climate, the structure of the programs offered as well as the support from supervisors. These factors, in most cases, are closely aligned to the fulfillment of the students as well as preparedness to focus on the real world. These sentiments are further shared by Peiliang (2016:1357) who concurs that a country’s employment circumstances often motivate individuals to further their studies even through to postgraduate level.

Similarly, Holloway (2017:44) notes that it is a popular belief among students that gaining a postgraduate certificate will result in securing better jobs which leads to securing successful livelihoods. Baum and Steel support this ideology (2017:2) that suggests individuals with advanced or postgraduate degrees earn significantly higher salaries than individuals without postgraduate degrees. This is also true in the South African context where individuals holding higher academic degrees are often considered for better positions as well as salaries over their less-educated counterparts.

Figure 2.5 Average Earnings of Employees with postgraduate degrees



Source: Baum and Steel (2017)

2.3 Critical skills development

As highlighted by Badsha and Cloete (2011:2), there is a reciprocal relationship between skill and innovation demonstrating that innovation is likely more realized in the presence of highly obtained skills. This enhances a country's innovative capacity as highly educated or skilled personnel can lead projects. Zewotir et al. (2015:1) cite that low production of graduates, unfortunately, affects the much-needed critical skills, which are usually required for the economic development and growth of any country, which largely depends on graduates with the necessary skills and knowledge to compete economically across the globe. Mouton (2011:14) also cites that the Human Strategy Development of South Africa (2001) has noted a move to contribute high-quality skills for societal and economic needs as one of the four pillars of human resource development. STATS SA (2017:1) article also

indicated that if the production of highly skilled professionals can be significantly increased, the innovation capacity of the nation could be enhanced.

Meanwhile, Daniels (2007:15) attributes the increased presence of foreign nationals within South Africa’s higher education institutions due to a dearth of suitably qualified local personnel holding degrees such as PhDs. Without the export, institutions experience a significant number of vacancies. Moreover, Ekpoh (2016:67) indicates that in Nigeria, the need for higher education skills has significantly increased, because it is usually much more difficult to secure employment immediately after a first degree and students, therefore, prefer to achieve a higher degree to be more competitive. Likewise, the public and private sectors seek higher education skills purely for economic reasons.

Furthermore, STATS SA (2017:2) indicates that the National Development Plan (NDP) of South Africa advocates for the higher education system and therefore plays a substantial role in the production of the country’s most necessary skills and knowledge to drive social and economic development. The NDP has committed to the following by 2030:

Table 2.2 Commitments by NDP by 2030

Graduate and postgraduate targets	Academic workforce and research
<ul style="list-style-type: none"> • Percentage of university academic staff with PhDs to be 46% (2018 academic year, verified by 31 October 2019); • Number of doctoral graduates from 2400 per annum (12 000 cumulative from 2014 to 2018 academic year) reported annually and verified by 31 October 2019; • Number of postgraduates funded through DST per annum: 27 411 Masters; 15 209 Doctoral and 3 682 Post-doctoral by 2019; • 34 000 research masters graduates from universities (cumulative from 2014 to 	<ul style="list-style-type: none"> • Additional first-time entrants (black African and women) to the academic workforce in addition to normal replacement and plans to be 100 (per annum) additional young (black African and/or women) entrants to the workforce by 2019/20; • 100 academics per annum supported through the Teaching and Research Development Grant by 31 March 2019;

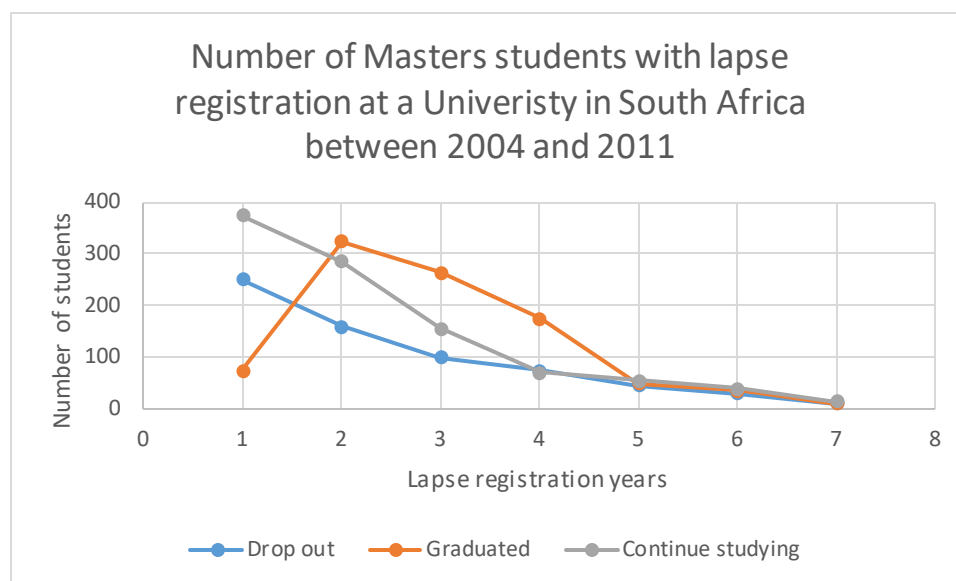
<p>2018 academic year, reported and verified by 31 October 2019);</p>	<ul style="list-style-type: none"> • 330 research infrastructure grants awarded to higher education institutions, science councils, national facilities of the NRF, and museums by March 2019; • 33 700 ISI accredited research articles published by NRF-funded researchers by 31 March 2019; • 22 032 researchers awarded research grants through NRF managed programs as reflected by the NRF project reports by 31 March 2019;
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Source: STATS SA (2017)

2.4 Postgraduate throughput rates and trends within SADC and Sub-Saharan regions

Watson *et al* (2010:9) indicate that to achieve a high level of skills within the SADC regions, it is necessary and important to increase the number and quality of postgraduate studies. Sondlo (2013:2) also highlights that there is a need for upgrading lecturers in Sub-Saharan countries as a large percentage of lecturers within the institutions are still unqualified. This he says, applies pressure on local universities to meet the global standards, resulting in the recruitment of foreign staff. Unqualified staff can be detrimental as these unqualified teachers partly contribute to learners failing to complete their studies. Zetoir *et al.* (2015:2) show that most postgraduate students take longer to complete their studies or drop out of the Master's programs due to lack of financial aid and in some cases due to lack of interest in the program in general. Ekpoh (2016:67) mentions that in Nigeria, since 2000, there has been a significant need for postgraduate education however, the higher education sector has suffered a severe decline in graduation rate due to the absence of motivation as predecessors are failing to complete at all or in record time.

Figure 2.6 Number of Masters Students with lapse registration at a University in South Africa between 2004 and 2011



Source: South African Journal of Science Volume 111 | Number 9/10 September/October 2015

In support of his claims, Ekpoh demonstrates that in 2005/2006, the University of Calabar in Nigeria recorded only 6% postgraduate throughput or graduation rate while 86% of the postgraduate had been retained until the 2010/2011 academic year. According to Bopape (2018:10), the Zimbabwe Council for Higher education also experienced a decline in throughput or graduation rate from 86% to 76% in the 2009 academic year, due to research capacity (research facilities and human in-depth knowledge), productivity (availability of research resources) and utility (research outcomes and how they are used). Broad socio-economic and political issues, according to Botha (2018:54) have had a negative impact on the African higher education system and this led to most of Africa's higher education institutions lagging in terms of development and making it difficult for these institutions to keep pace with their counterparts in developed countries concerning competition and internationalization of higher education. Consequently, as mentioned by Negash & Olusalo

(2012:88), higher education institutions in Africa have the experience of student retention, and largely, this is usually influenced by underdevelopment and poverty, which is linked to the commitment that African universities have towards meeting the Millennium Development Goals concerning increasing and widening participation rates.

The table below provides an overview of the graduation rates of postgraduate students in the SADC region in the 2010 academic year. It is evident that there is a need for intervention as there is a significant decline in throughput or graduation rates for both Masters and Doctoral degrees.

Table 2.3 Number of Postgraduate registrations and graduations in the SADC region

Field	Masters Degrees		Doctoral Degrees	
	Registration	Graduation	Registration	Graduation
Science, Engineering and Technology	12 840	3 053	3 799	536
Business, Management and Law	17 440	3 625	1 188	124
Humanities and Social Sciences	7 550	3 482	4 695	529
Health Sciences	7 550	994	909	114
Other	392	99	51	23
Total	57 660	11 253	10 642	1 326
Total excluding SA	15 993	3 742	740	143

Source: SARUA Leadership Dialogue Series Volume 2 Number 1 2010

2.5 International perception and trends of postgraduate throughput

As previously indicated by Hadi and Muhammad (2019:59) higher education challenges are a global concern that needs to be addressed. In Malaysia, factors that hinder the success of postgraduate students have been identified as student factors, institutional factors, and supervisory factors (Singh 2018:1039). According to Botha (2018:55), retention and throughput rates in universities at an international level are also critical and confirm that only 60% of postgraduate students at universities in the United States graduate within six years.

Similarly, Nkontwana (2014:24) argues that developed countries identified family background, classroom environment, and class attendance, under-preparedness, gender issues, and institutional support as some of the major factors that influence the success of postgraduate students. Sondlo (2013:36) echoes that in America, Europe, and Australia, the social-economic background has affected the throughput rates within the higher education sector and suggests that institutions implement strategies such as strengthening learner engagement in order to improve the graduation rates.

Additionally, challenges faced by postgraduate students often arise during thesis writing (Hoon *et al.* 2019:125). According to Hoon this claim is upheld by many universities who further contend that these students would usually start the dissertation at a very high note but progress slowly after they have drafted the proposal part of the thesis.

2.6 South African perspective and trends of postgraduate throughput

The Human Resource Development Council (HRDC 2013) of South Africa states that factors such as financial restraints and lack of support for further studies affect the number of students that register for postgraduate studies. The HRDC 2015 proposes that to address this issue, European and American countries apply practices aimed at supporting students

demonstrating potential. They support students and encourage them to further their studies beyond the postgraduate level up to obtaining Doctorate degrees. This system enables students to complete their studies well within their late twenties and early thirties. Meanwhile, in South Africa, the average number of years to complete a Doctorate is no less than ten years. Furthermore, Bopape (2018:12) showcases that only 15% of the postgraduate students in South African universities graduate within record time and this is reflected as a norm amongst the students. Additionally, Costa (2019:19) argues that a case study taken of Masters students in one of the largest universities in South Africa who enrolled in 2011, showed as little as 20% graduation within 2 years, while only 21% of the Doctoral students graduated within 4 years.

As a relief mechanism, a Postgraduate Student Funding Policy has been implemented to overcome throughput challenges towards achieving more success. This funding, spearheaded by the National Research Foundation (NRF) of 2019, department of Science and Innovation of South Africa, aims to provide limited funding to struggling postgraduate students demonstrating potential. As stated by Costa (2019:12), new policies that are following NDP 2013 are now being headed by South African Universities. Amongst other things, these policies calls for universities to produce at least 100 doctoral graduates for every one million graduates.

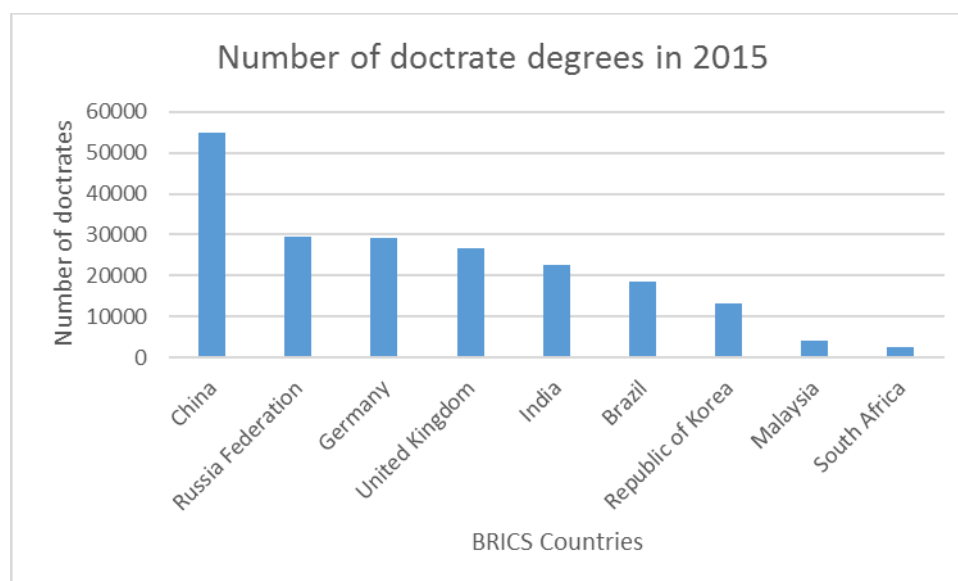
As also outlined by Mouton (2011:13-14) the NDP further called for higher education institutions to promote uptake of high-quality skills courses, particularly scarce skills, which are more responsive to societal and economic needs. Meanwhile, some authors warn of the challenges of producing a 'skills mismatch' situation where skills in demand and skills eventually supplied have not been aligned to the South African environment (Petersen et al. 2016:407).

Styger *et al* (2015:1) explain that in February 2015, the Department of Science and Technology planned to place South Africa among the richer countries by significantly

increasing knowledge output by improving postgraduate output in both quality and quantity. This process, however, required critical inputs such as postgraduate supervisors, infrastructure, and prepared students.

The Department of Education in South Africa (2015:2) has also indicated that although there has been an increase in the number of doctoral graduates, these numbers are still low when compared to its BRICS counterparts.

Figure 2.7 Number of doctoral degree graduates by BRICS Country



Source: Department of Education: 2020 Fact Sheet

2.7 Factors impacting postgraduate throughput rates

Generally, there have been difficulties in understanding the complexities of the throughput patterns of students at universities and therefore, the reasons for this challenge need to be identified and addressed (Stoop 2014:1). Hoon *et al.* (2019:127) agreed that it has been difficult for many students to complete their postgraduate studies and cites that students

need to gain a certain level of confidence as it is always seen as an important input in career growth and development.

Van Biljon and De kock (2011:991) emphasized that a variety of factors and stakeholders have an influence on access, attrition, and retention rates of students. Through research, this report will elaborate and identify some of the factors that previous researchers have identified as those that are affecting and hindering postgraduate students' throughput rates. Academic performance (reading ability, motivational factors, learning strategies, and learning approaches) has been identified as the common barriers that affect the throughput rate of postgraduate students (Staden and Ellis 2017:115). Similarly, Bopape (2018:17) and Visser (2011:3) add that student preparedness, financial, student housing, and lack of commitment, conflicting commitments, time management, and student support, and student/supervisor relationship are some of the factors that affect student throughput rates. Barnard and Fourie (2013:5) affirm that strengthening teaching and learning for students, especially research is one of the factors that affect throughput rates. Some of these factors have been discussed below as follows:

2.7.1 Student/Supervisor relationship

Ezebilo (2012:49) stipulated that for students to succeed, the relationship with supervisors is very important and this needs to be maintained throughout. Though the supervision styles differ from one person to the other, guidance from the supervisor is perceived as being supportive. Van Rooij et al (2019:4) agree that the quality of the relationship between a student and a supervisor is vital as this will most likely determine the satisfaction and completion of the student's program. Also, Rooij indicates that the supervisor's availability by meeting the student regularly and providing timely feedback to questions has a huge impact on the completion of a postgraduate thesis.

Another most important factor is for the students to develop professionally, as should be the case with the production of the thesis, which may be considered the key component of supervision. However, according to Ezebilo (2012:49), it has been established that, in South Africa, many postgraduate students are not satisfied with support, feedback, and guidance from their research supervisors. Most students have strong views regarding the relationship with supervisors and some students have said that some supervisors are rude and some always have negative comments that do not give any motivation (Sonn 2016:237). Delany (2009:14) agrees that, with the need for international recognition and improvement in technology, it is important to improve supervision. Delany (2009:3) advises that universities should highly prioritize postgraduate student's research and supervision as this has a vital impact on an institution's research profile. The research reputation of the institution relies on the quality of supervision that postgraduate students receive. Van Biljon and de Kock (2011:991) stress that if responsibility and quality of postgraduate education are to be taken seriously, supervision needs to be at the forefront. However, some expectations students thrust upon supervisors are not attainable (Massyn 2018:115). The expectation from students is that supervisors should also play coaching and advisory roles, mentorship, offer guidance as well as become quality controllers and these expectations are unfortunately overwhelming.

In addition, Lubbe *et al.*,(2005:242) also believe that discussions around low throughput rates are low to non-existent, probably because supervisors feel embarrassed with these results as they are representative of their abilities as supervisors. Such topics and discussions are highly encouraged as these could be a key to resolving issues around the addition of more junior qualified staff members in academic environments. Also, supervisory processes should be a two-way relationship from both the student and the supervisor.

South African higher education institutions have seen more and more students returning to further their studies and this highly affects the student-supervisor ratio, consequently

distressing student support and supervision (van Rensburg et. al. 2016:2). Additionally, Costa (2019:29) cited that supervisors at most of the higher education institutions are significantly burdened with the high number of students under their supervision.

Table 2.4 Demonstration of Supervision Burden

Institution	Qual/Enrol	2009	2010	2011	2012	2013	2014	2015	2016
UKZN	D-Staff	562	588	606	663	688	670	655	667
	Enrolments	1141	1173	1286	1626	2113	2453	2798	3044
	M-Staff	499	493	479	443	445	470	488	491
	Enrolments	3957	3932	4046	4418	5164	5448	5826	5991
UNISA	D-Staff	487	488	469	612	629	690	732	834
	Enrolments	754	1024	1257	1173	1872	2100	2117	2179
	M-Staff	364	366	372	452	489	533	532	574
	Enrolments	4711	5459	5909	5254	6372	6072	5726	5500
WSU	D-Staff	54	66	73	70	80	84	79	82
	Enrolments	21	32	30	34	48	50	54	56
	M-Staff	165	188	180	165	190	200	210	206
	Enrolments	309	336	385	351	363	266	305	398
DUT	D-Staff	58	65	73	88	97	112	125	134
	Enrolments	66	84	69	99	123	163	216	322
	M-Staff	203	251	261	279	277	281	291	286
	Enrolments	300	339	312	468	539	598	752	861
UL	D-Staff	156	153	147	132	139	154	139	170
	Enrolments	138	163	193	189	217	249	208	246
	M-Staff	384	346	328	299	322	335	217	214
	Enrolments	1659	1798	1771	1743	1654	1612	1169	1214

Source: Costa, K. 2019. A systematic review of challenges in research supervision at South African Universities

Table 2.5 presents an analysis of student enrolment to several qualified staff for research and this table indicates a burden faced by supervisors in most universities from 2009 to 2016.

2.7.2 Coaching

Keane (2016:101) defines coaching as an effective way or process to improve independence and confidence in completing a task and achieving an intended goal. Also, Losch *et al* (2016:2) describe coaching as a relationship between two people where one is the coach and the other is the client or coachee. These two people collaborate and engage in a systematic process of setting objectives with the intention of assisting the client to achieve the set of goals and develop personal growth. Losch further emphasizes that the responsibility of the client or person being coached is to implement actions and steps to achieve the set goals and objectives, while the coach's role is to keep track and manage the complex goal attainment process. Also, Devine *et al* (2013:1383) agree that coaching is a powerful tool and has a key role in education and defined it as a 'holistic multifaceted approach to learning and change'. Successful coaching approaches such as behavioral coaching, solution-focused coaching, instructional coaching, executive coaching, peer coaching, and positive organizational leadership have been used in education based on their focus on the three main actors: students, educators, and school leaders. Lane and De Wilde (2018:56) agreed and cited that a significant group of students in London has shown evidence that coaching plays a vital role in higher education. Due to coaching, there has been an increase in academic staff advancement, collaborative work, scholarly confidence as well as skills development.

Postgraduate students are expected to work independently, therefore will most definitely need a little guidance to complete their studies. Le Roux (2018:3) concluded that the inclusion of coaching in postgraduates studies plays a vital role as many postgraduate students are involved in inter-role stress-related activities in their overall lives, be it personal, work or studies. Martinez (2015:1) agrees that coaching enables students to

completely focus on the studies and become appreciative of the new form of knowledge. 'There is certainly enough stress and pressure studying, therefore students that indicate potential, require face-to-face coaching and attention to enhance their potential to succeed', Rochford (2003:220). Sonn (2016:239) suggests a specific method of coaching ought to be considered even during earlier assignments to facilitate a good transition.

Hoon et al. (2019:127) argue that coaching can also be geared towards instilling confidence as the lack of confidence is pivotal in enhancing chances of completing studies and graduating on time. Confident students are also less prone to be significantly affected by stress, enabling them to overcome challenges encountered during and beyond the duration of their studies.

2.7.3 Time management

Khanam *et al.* (2017:4761) define time management as a skill or art to arrange, organize and schedule one's time to effectively produce work or a set of practices, principles, and systems or tools that are interlinked to get more value for the time spent. Visser (2011:3) indicates that many students complain about time management amongst other commitments such as family and work. For students with families or children, time management becomes more difficult to adhere to as they juggle their studies and family life. Most students feel they would enjoy studies more if they had more time and suitable locations to study. Time management is an important skill requirement necessary towards enhanced academic productivity and overall organization and 'once this skill is mastered, students will alleviate a lot on unnecessary procrastination' (Nasrullah and Khan 2015:67).

Al hila *et al* (2017:137) warn against failing to make optimum use of time to explore opportunities; as time lost can never be regained. He raises awareness that the key to success depends on the ability to manage and organize time. Nzewi *et al.* (2016:181) state that even in Nigerian universities, postgraduate students are discovered to struggle with

finding a balance between academics and other obligations such as work and family pressures. Layth *et al.* (2017:14) add that ‘good time management in performing tasks eliminates exhaustion’.

According to Twehues (2013:5), many students fail to use planners to keep track of their tasks and often miss or forget important tasks as a result. As an alternative, Massyn (2018:119) argues that to avoid loss of track; students could adhere to postgraduate program rules in which a mini-thesis is broken down into milestones and timeframes to be followed. Chase *et al.*, (2013:156) affirm that a researcher’s productivity within an academic environment depends largely on deliverables (publications, proposal submissions, presentations, etc), within a certain period. Chase, therefore, recommends the researcher should follow certain strategies of time management that can be used as tools for effective time management:

- **Setting realistic and attainable goals** – developing intermediate, immediate goals, identifying goals and objectives, and identifying processes to follow.
- **Optimize realistic planning** – splitting tasks into small manageable tasks, creating a schedule, and defining timelines.
- **Prioritize** – learning to prioritize and schedule tasks accordingly and devoting time to completing daily tasks.
- **Effective scheduling** – devoting time for certain work and scheduling weekly hours important tasks and employing the use of a calendar.
- **Maintain focus on research program** – making use of any opportunities to progress on the research program and devoting a lot of time to research.
- **Manage potential distractions** - choosing your environment carefully for support and success. Being creative and avoiding multitasking can create distractions.
- **Problem solves and manages barriers** – attempting to resolve any barriers with the mentor.

- **Balancing life** – getting adequate sleep, rest, and regularly engaging in physical activity.
- **Routine** – practicing good habits, as they will make life easier.
- **Flexibility** – scheduling reasonable empty time slots.
- **Respond vs react** – avoiding impulsive decisions when faced with a difficult situation. Pausing to take a moment and to think.

In conclusion, Obijiaku (2015:9) praises that efficient time usage leads to many benefits that include minimizing stress and shaping organized students who will achieve their quality goals timeously and on schedule.

2.7.4 Conflicting commitments

According to Visser (2011:3) studying part-time has been the most challenging for postgraduate students as there have been more drop-out rates from the courses and this is due to lack of balancing of conflicting commitments to alleviate stress. Furthermore, working students prioritize work commitments more than their studies as the expectation from employers is performance and being productive, regardless of whether the studies are relevant to their work or not. Also, according to Rauf (2016:115), many postgraduate students struggle to juggle family and a job while also studying. In most instances, postgraduate students opt to attend their studies part-time to prioritize other social matters. The responsibility of completing their studies timeously lies completely with the student under the guidance of their respective supervisor. Visser (2011:1) mentions that students demonstrate enthusiasm at the beginning of their course, but may not show a similar preparedness along the course of studying when challenges begin to surface. Many postgraduate students, especially mature students, would have a combination of work, family, and social commitment under one umbrella to try to find balance and fulfill all the commitments. However, this is often a serious burden and there is always a huge compromise on vital matters or commitments. Alegbeleye and Jantchou (2019:4) concur

that postgraduate students' studies are also affected by the high workload they experience at their place of employment.

Hadi and Muhammad (2018:61) also agree that the success of postgraduate research is encouraged by personal characteristics such as competence in learning skills and motivation towards completion of the course.

2.7.5 Socio-economic conditions

According to Campbell (2013:1), social-economic conditions are frequently measured by education, wealth and income, and health. Thomson (2018:1) cites that one of the enduring issues within the education sector is the relationship between educational achievement and socioeconomic background. The inequalities imposed on individuals at a young age, by their homes, neighborhoods, and peer environments are carried along into their adult life. Dudaite (2016:856) argues that in many countries, it was discovered that home socioeconomic conditions influence student's academic achievement. A higher learning achievement has been recorded in the student group of higher social class and from students coming from rich countries. Furthermore, parents of rich children are more encouraging and participate positively towards nudging their children in the direction of success. Influence from family is the most important factor that strongly improves the student's academic achievement (Gobena 2018:208). He argues that students that have support and involvement from families are usually emotionally motivated and perform better in their studies. Devlin and Mckay (2017:7) also note that a student's attitude and family support are among the highest factors that contribute to their success. Devlin and Mckay further indicate that focus should be on the following policies to assist students from low socio-economic status pressures:

- **Ensuring financial stability for students** – establishment of Higher Education Participation and Partnership Programmes, improvement in provision for scholarships to students from low socio-economic environments who are

studying at universities to increase the likelihood of completing their qualifications.

- **Defining, measuring, and monitoring attrition** - measurement and monitoring of attrition of students from low socio-economic backgrounds who are studying at universities and taking into account the realities of these students' lives, experiences, responsibilities, and the choices they have to make about study in the context of complex lives and competing priorities.
- **Valuing staged and micro qualifications** – provision of multiple exit point qualifications and micro-credentials could be further enabled, encouraged and valued to facilitate success for those who cannot, or do not want to, commit to the equivalent of three years of full-time study to gain a bachelor degree qualification.
- **Leveraging existing regional and rural infrastructure** – Existing technological, personnel, and other infrastructure could be better leveraged, supported, coordinated, and promoted to help facilitate the success of students from low socio-economic backgrounds.
- **Regional school investment** – Better investment in regional schools is likely to contribute positively to increased school completion, to greater aspiration for university-level qualifications, and better preparedness for university study for students from low socio-economic backgrounds.

2.7.6 Financial conditions

Lack of financial funding has frequently been cited as a vital factor affecting many students' progression and failure difficulties at higher education institutions (Mngomezulu *et al.* 2017:132). Students enroll at learning institutions from different backgrounds and are therefore endowed with different financial support. According to Visser (2011:5), the disadvantage often lies with female students and part-time students that face many challenges such as spending additional time on other responsibilities due to lack of or little

financial support. These responsibilities may vary according to gender, where female students attribute their time to pressing domestic roles, which are neither fulfilling nor adding financial value, or they could be delving into these responsibilities as a form of payment for being financially supported academically. Pillay (2015:6) states that most postgraduate students are older with more responsibilities such as providing financial support to extended families and cannot afford to study full time. The higher education policy, therefore, recommends that financial support to postgraduate students should be increased to encourage a large number of postgraduate students to study full-time to stand a good chance to graduate. Singh (2018:1043) agrees that if postgraduate offices at institutions could offer financial support grants for research, graduate assistant positions, fellowships as well as sponsorships to conference attendance, most students would be able to focus on their studies and therefore improve output rates at universities. Amehoe (2013:16) proposes that financial factors such as tuition fees, accommodation, acquisition of materials, and traveling fees, and food are necessary to support a student's academic pursuit.

2.7.7 Support structures at universities and lack of resources

Another identified factor in need of modification is the support structures such as skilled or trained supervisors and resources that encourage course completion. Kimani (2014:65) points out that the quality of supervision is becoming highly compromised due to increasing demands and subsequent expansion of higher learning facilities. Supervisors are often compromised due to their workload commitments that stem from lecturing, marking exam papers, own research and development, publications, and management of workload itself. Newly qualified staff needs to be recruited to address this problem although developing countries could face financial constraints to employ adequate Ph.D. holders in the research area. Sonn (2016:226) cited that, due to lack of guidance towards the research component of the course, students often find it easier to complete the course work in record time than to complete the research part which is often delayed. Resources such as computers,

laboratories, and training for programs such as SPSS have been identified as more significant challenges.

Moreover, according to Visser (2011:5), the students at higher education institutions had problems making contact with the lecturers. Unlike many developed international practices, South Africa's higher education institutions do not require academic staff to undergo practical training to acquire relevant and necessary skills before being employed (Cameron and Woods 2016:176-177). Furthermore, the subsidies provided to higher education institutions are linked to student throughput rates and not for professional development programs for academic staff.

Hadi and Muhammad (2019:62) cited that institutional factors such as availability and sufficient access to research tools and equipment, research activities financial support, satisfactory library facilities, adequate training and mentorship on seminar programs, amongst other factors, are fundamental factors for students wishing to pursue postgraduate studies, as these factors will influence their ability to complete their studies. Baguley *et al.* (2015:164-165) found that more and more students choose to further their postgraduate studies based on the institution's existing knowledge and experience as well as the availability of resources. Postgraduate students also change universities to broaden their experience in research, better opportunities, and financial conditions as well as exercise their freedom to move.

2.7.8 Academic writing skills, language barrier, and student preparedness

Sonn (2016:234) cites language as one of the barriers to learning as students fail to express themselves in academic terms; writing skills and more profoundly expressing themselves in academic English. In South Africa, students from non-English speaking backgrounds or where English is a second language, often encounter challenges expressing themselves eloquently. Sibomana (2016:124-125) highlights the fact that English has been identified as an academic language and that anyone that considered themselves literate, will be

considered deprived if their knowledge of English was short of adequate. Sibomana rightfully points out that much consideration should be taken into account when addressing students that have English as their second language. As it is generally known, written language differs significantly from spoken language. Schulze and Lemmer (2017:55) lament that academic writing at the postgraduate level has raised major concerns as many students struggle to meet the requirements to write a thesis or dissertation. As also indicated by Kotamjani and Hussin (2017:1), at the postgraduate level of study, students are expected to have acquired skills of writing academically, from organizing ideas logically too, paraphrasing summarising up to proofreading documents. Equally, Amehoe (2013:6) concludes that it is of importance that postgraduate students are equipped with research methodology skills to prepare themselves for the actual studies because research is of utmost importance for the completion of postgraduate studies. To assist and simplify the process of proposal writing, Krish *et al* (2017:245) suggest taking a page from the Malaysian system which requires postgraduate students to take a compulsory research methodology course to determine their eligibility in advance. Consequently, Rochford (2003:219-220) advises that to avoid enrolling potential drop-outs, universities must consider impending self-esteem enhancing strategies geared towards imparting experience in research for students without such skills. Rochford suggestion is based on findings on the University of Cape Town (UCT) that revealed that a majority of the students enrolled for a Master's degree, in the last 20 years, had opted for a Master's degree by course work and minor dissertation as opposed to full thesis Master's degree; a clear indication that students had little to no previous research experience.

Dominguez-Whitehead (2015:914) mentions the important role the postgraduate sector plays in the South African landscape, citing that even the National Research Foundation places trust on the sector to improve the country's economic and educational profile by nurturing academic intellectuals; especially Black researchers. Motseke (2016:428) laments the continuing trend displayed by many universities which admit students into Doctoral and Master's programs without properly screening them for eligibility. He further

contends that the absence of screening enables even fewer qualifying students such as adult students that received a poor education under the apartheid system to be absolved into the programs to their demise. Those adult students that received apartheid education system or [who] from poor[ly][benefitted] education background also have a major impact in slow progress as they lack training in research methodologies and skills such as, computer skills, information search and other more modern skills related to research.

In China, before the enrolment of postgraduate students, numerous processes are engaged in which include postgraduate entrance examination and interviews, which eliminate those students who have shown interest to pursue their studies but are deemed unready to proceed (Di and Wen 2014:1). Hoon et al. (2019:128) also emphasize the importance of acknowledging a demonstration of competency before enrolment to ensure student readiness and competency in areas such as critical reading, writing, research, and conceptual skills to tackle postgraduate studies. A lack of these skills, Hoon claims, is detrimental to the development of constructing a research problem, and critical reading skills will delay the completion of a student's thesis.

Most students have expressed a lack of exposure to research at the undergraduate level as another underlying factor contributing to throughput (Massyn 2018:115). Such students proclaim they are therefore unable to realize the intensity of the postgraduate research process, which leads to underestimating the time and commitment required to complete a dissertation.

2.8 Student retention

Crosling (2017:2) asserts that there is a need to address the issue of retaining students in their higher education studies and notes that retaining students until they complete has been viewed as a significant achievement and is seen as a lesser evil by institutions who would rather retain students that have high drop-outs. McCoy and Byrne (2017:111) have noted

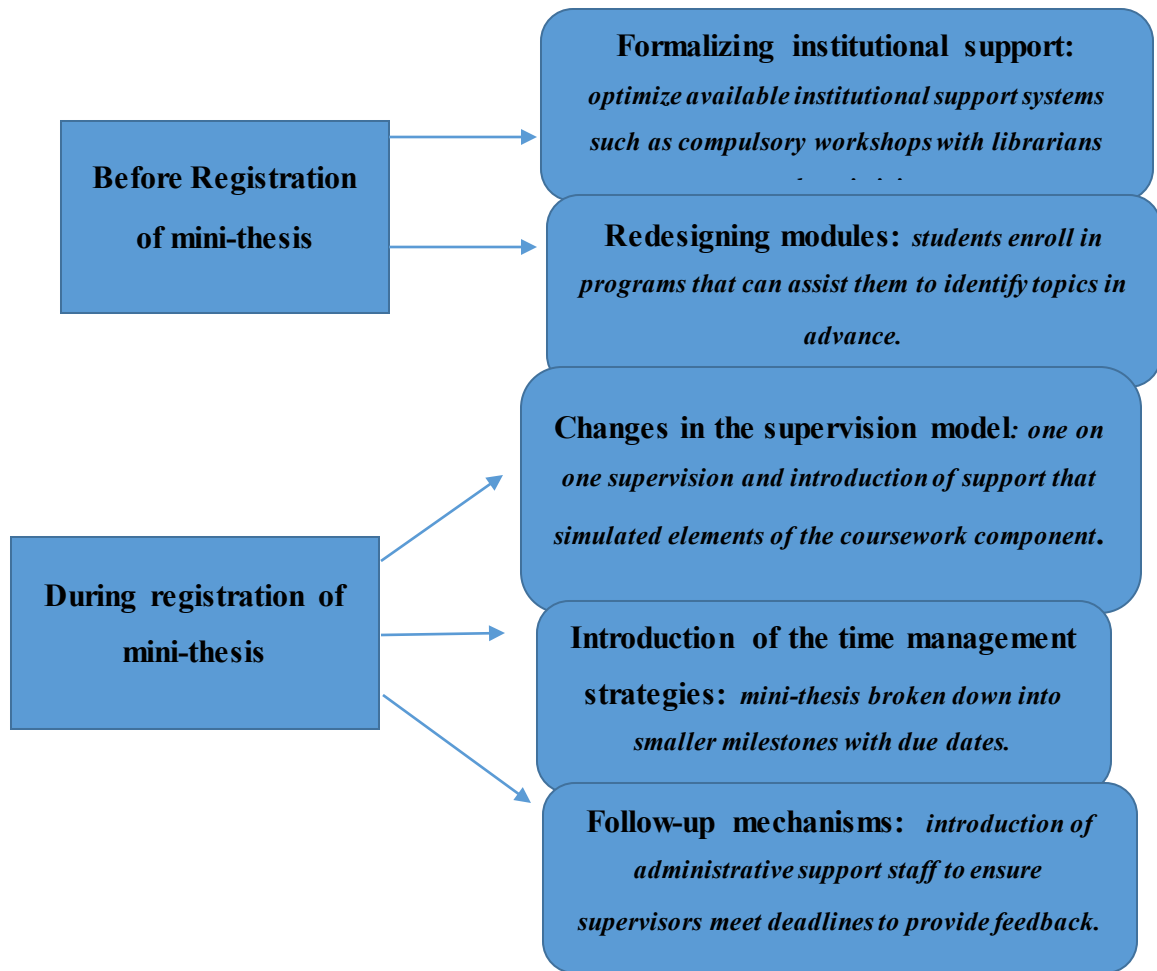
with concern that most institutions prioritize being seen as efficient rather than with other primary concerns that may tarnish their reputation. Such institutions place value on principles that include an increase in performance and accountability, their monitoring status, successful progression of students, and performance as components that determine their eligibility.

Student retention does not only affect higher education institutions but also has a direct relation to the countries' economic, political and social development, for which higher education facilities provide a strong foundation (Einolander and Vanharanta 2015:581). Furthermore, these authors explain that students are likely to drop out if they lack factors and characteristics such as self-confidence, academic goals, institutional commitment, social support, and financial support. Sondlo (2013:2) also contends that student retention is more of a challenge in most Sub-Sahara African universities as these countries are experiencing a critical shortage of well-qualified teachers that could align and respond to the huge increase in demand for higher education.

2.9 Approaches and strategies to improve success rates and eliminate dropout rates

According to Massyn (2018:117), the approach to enhance success rates of postgraduate students is divided into two groups of strategies; strategies implemented before registration of the mini-thesis and those implemented during the registration process of the mini-thesis.

Figure 2.8 Summary of strategies



Source: Massyn: *The International Journal of Management Education* 16 (2018) 114 – 120.

Likewise, Camelia and Ramona (2018:4) cited the following interventions that may assist in preventing the university dropout:

- Recruitment of qualifying students;
- Provision of counseling and support to students;
- Creating an alert system that will identify struggling students;

2.10 Conclusion

This chapter focused on the perceptions of postgraduate throughputs in Africa and other international countries. It is evident that throughput rates within higher education are a huge concern for all countries, both developing and developed countries. In order to survive the competitive global economic conditions, countries have to maintain a certain level of necessary skills. This chapter also highlights factors such as academic writing skills, language barriers, and student preparedness, support structures at universities and lack of resources, financial conditions, social-economic conditions and conflicting commitments, time management, student and supervisor relationship and coaching that are affecting or affect the graduation or throughput rates at higher education institutions.

CHAPTER THREE – RESEARCH AND METHODOLOGY

3.1 Introduction

The purpose of the research is to explore and discuss the factors that impact the throughput rate of postgraduate students at the Master's level. The previous chapter has covered those factors in South Africa and globally. This chapter will therefore outline the research methodology that the researcher employed from the research design, research area (an area where research will take place), population under study, and sampling technique. Also, this chapter discusses the methods used for data collection, data analysis and explains the ethical consideration in this study.

3.2 Research Design

Welman *et al.* (2005:52) define research design as a plan that describes the participants or focus groups and how the information will be collected from these participants or focus groups. The plan also provides clarity on what will happen and who the participants or focus group respondents are to reach conclusions regarding research questions and research problems. Research design can be seen as a structured idea that can be easily transformed into a project (Toledo-Pereyra 2012:279). This allows the researcher to take into consideration important factors such as theory, methods, and ethical considerations relating to the project itself.

Welman *et al.* (2005:6) cited that there are two main types of research methods that are commonly used, namely, Quantitative (Positivist) and Qualitative (Anti-positivist) research methods. Quantitative (Positivist) research – features a natural-scientific method in human behavior and research is limited to investigations that are observable and is objectively

measured. Positivists believe that there is a single reality, which can be measured and known, and therefore they are more likely to use quantitative methods to measure and this reality.

The qualitative (Anti-positivist) research method uses open-ended questions and interviews to gather and understand peoples' sentiments and beliefs regarding aspects of research. Constructivists believe that there is no single reality or truth, and therefore reality needs to be interpreted, and therefore they are more likely to use qualitative methods to get multiple realities.

Geelan (2015:1) cited that over years the mixed research method has been described as the third research method as it compliments both qualitative and quantitative methods of research. Pragmatists believe that reality is constantly renegotiated, debated, interpreted, and therefore the best method to use is the one that solves the problem. This research, therefore, employed the mixed method (qualitative and quantitative) approach. As outlined by Wisdom and Creswell (2013:1) mixed-method approach is an integration of the two methods and allows the full collaboration of data collection and analysis.

3.3 Study area

This study was carried out at one of the Universities of Technology in South Africa which boasts six campuses and encompasses six faculties. However, this study only focused on one of the departments.

3.4 Population

Many authors have defined the population of study or research and their definitions have always been directed to a similar definition. Welman (2005: 52) *et al*, maintain that a population is an object of interest for the study or research. This can consist of groups,

individuals, organizations, events, and many other objects that can be relevant to a particular study. Consequently, Majid (2018:3) defined population as the interested group that the study is targeting and that it intends to study. The target group in this study was 437 masters' students that enrolled for Project Management at a university of technology from 2012 to 2017.

3.5 Sampling

As defined by Taherdoost, (2016:20), sampling is picking or selecting a certain small number of a specific population that can represent a larger group. Omair (2014:142) cited that to be able to populate the results of a targeted sample or population in qualitative research, it is advisable to select a representative sample that will allow the results to be generalized. It is also essential to ensure that the target sample is selected using the appropriate probability sampling technique and that the sample is of the required sample size.

This research used probability sampling methods for the findings and according to Adwok (2015:95), probability sampling specifies to the researcher that each segment of a known population will be represented in the sample and this approach also lends itself to rigorous analysis to determine the likelihood and possibility of bias and error. The researcher targeted 437 master's students in the Project Management department that were retained by the institution for the period 2012 to 2017. Questionnaires were forwarded to at least 20% (87 students) who have been in the institution's system for more than 5 years and had not completed their studies at the time of this research.

3.6 Data Collection

Kabir (2016:202) defines data collection as a process in which particular information of interest is gathered and measured. Furthermore, data collection is one of the most vital

stages in research as, without the relevant data, research will not be completed. Parveen and Showkat (2017:3) agree that without data collection, certain questions of the research will not be answered.

3.6.1 Types of Data collection methods

There are various ways or methods of collecting data for research purposes. Parveen and Showkat (2017:4) highlight two classification methods of collecting data; Quantitative and Qualitative.

- **Quantitative** – this method relies on random sampling and produces results that can easily be interpreted by either summary, comparisons, and generalization. Examples of these are interviews and questionnaires.
- **Qualitative** – this method relies on testing theory and being able to provide the correct estimation of the sample size.

Abawi (2014:2) indicated that the choice of data collection method or instruments to use depends on the type of research. Different types of methods such as document review, observation, questioning, measuring, or a combination of different methods may be applied. This research used a structured questionnaire, comprising of closed-ended questions and open-ended questions as this was the only way to engage the participants due to the current pandemic. The questionnaires were distributed by email to all participants. The participants are Masters Postgraduate students in one of the departments at the university of technology.

3.7 Data analysis

Kawulich (2004:97) defines data analysis as a process that a researcher undertakes to understand and make sense of the collected information. The researcher will then be able

to conclude the analysis. Furthermore, In and Lee (2017:267) described data as a set of facts that provide a partial picture of reality. The data is then summarized, organized, and analyzed to derive information from them.

This research used data tabulation to analyze and present data collected. Kabir (2016:490) defines data tabulation as a process of condensation of information collected through inquiry and the tables, therefore, represent a summary of the data by using columns and rows entering figures in the body of the table. As explained by Strumpher (2018:37) this research followed the following process to analyze and interpret data collected:

- Firstly, data were edited and encoded;
- Data were categorized to facilitate tabulation and interpretation;
- Categories dealt satisfactorily with the different dimensions of the problem;
- Data was type data onto a computer file;
- Using an Excel spreadsheet, graphs and tables were derived.

This method was easier and very convenient for the data collected.

3.8 Validity and Reliability

Golafshani (2003:598) explained that validity and reliability in research determine whether the research meets the intended purpose, whether the information or results obtained are truthful, and whether there is consistency in the results and accurate representation of sample size or population under study. For this study, to ensure validity and reliability, the researcher utilized a similar approach used by Bopape (2018:32) which was already pilot tested. Moreover, the data collected was also compared with the literature and the researcher checked the filled questionnaires to minimize the mistakes and ensuring that the information is correctly captured.

3.9 Ethical consideration

As defined by Phaneuf (2009:1) ethics entails the concept of self-discipline, takes into consideration the positive and negative impact of one's behavior, and usually will encourage individuals to think and act reasonably. To ensure there is ethical consideration, this research will take into consideration the following:

- i. **Allow participants to participate voluntarily** – Participants will be informed that participation is voluntary and that they can withdraw from participating anytime without any consequences. Participants will be informed of the objectives of the research for them to make informed decisions regarding participation;
- ii. **Anonymity** – names of the participants, as well as the institution, will not be included in the write-up or papers generated there-of to ensure anonymity;
- iii. **Omission of questions** – participants were informed that they can omit questions that they are not comfortable responding to;
- iv. **Include confidentiality indemnity** – participants signed a consent form before participating to ensure confidentiality.

3.10 Conclusion

This chapter has outlined the processes within the methodology phase that the researcher plans to follow to achieve the objectives of this research. The processes from research design, area of study, population, and sampling techniques have been elaborated. Data collection methods, data analysis, validity, and reliability as well ethical considerations have been outlined in this chapter. The next chapter presents the research findings, analysis, and interpretation of the results.

CHAPTER FOUR - RESEARCH FINDINGS, ANALYSIS, AND INTERPRETATION

4.1 Introduction

The previous chapter focused on the design, sampling techniques, data analysis, and collection methods employed in this study. Chapter Four will now focus on the findings based on data collected. As indicated, this study made use of both qualitative and quantitative methods to analyze the data collected. Furthermore, the purpose of this research aims to investigate the main factors and challenges that impact throughput rates and causes of dropout of postgraduate students at the University of Technology. Two questionnaires were forwarded to the participants, students, and staff of the University of Technology through their respective email addresses and Google Docs. From the questionnaires that were forwarded to staff, no responses were received. The following research findings were based on the 18 respondents that were received from students.

4.2 Research Findings

4.2.1 Gender

Male	
Female	

Figure 4.1 Gender

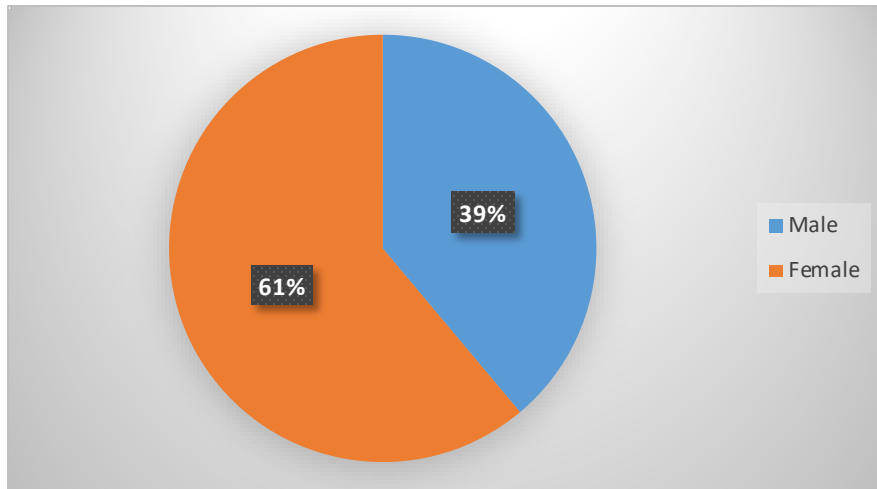
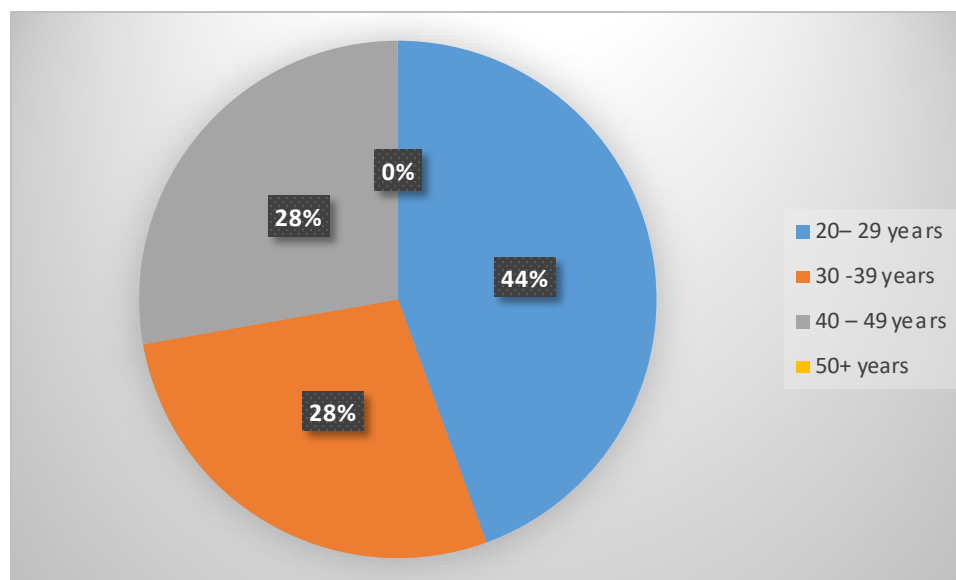


Figure 4.1 above indicates that 61% of the respondents were females and the remaining 39% of the respondents were males. This indicates that more females than males responded to the questionnaire. As indicated by Tannenbaum *et al.* (2016:4) it is important to establish the gender of participants during research as gender usually influences decision-making, communication, stakeholder engagement, and ways of how people behave and perceive themselves and each other. In this case, there was no influence of gender as this was reflecting on the personal experience of the studies.

4.2.2 Age

20– 29 years	
30 -39 years	
40 – 49 years	
50+ years	

Figure 4.2 Age



As per Figure 4.2, 44% of the participants were between the ages of 20-29 years. Participants between the ages of 30-39 and 40-49 years of age both scored 28% percent, while there were no participants 50 years of age or more. These results indicate that more participants were between the ages of 20-29 years. This is a good sign as this aligns well with the new funding policy that the National Research Foundation (2019) would like to implement, which will encourage students to enroll in postgraduate studies while they are young so that they can complete their studies on time.

4.2.3 Marital status

Married/Cohabiting	
Single	
Divorced	
Other (separated, widowed)	

Figure 4.3 Marital Status

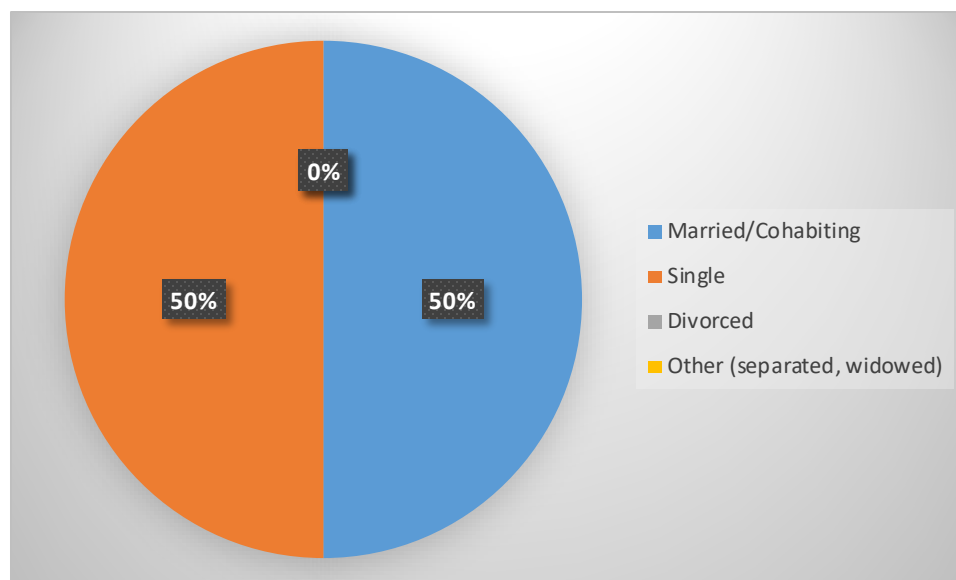


Figure 4.3 stipulates that there was an equal number, at 50%, of participants that were single and married or cohabiting. There were no divorced, separated, or widowed participants who took part in this study. As indicated by Visser (2011:3) conflicting commitments affect postgraduate studies and there is a high likelihood that our participants; seeing they are in partnerships, could have their studies affected by other commitments stemming from their respective relationships.

4.2.4 Ethnical group

African	
Colored	
White	
Other (Asian, Indian)	

Figure 4.4 Ethnical Group

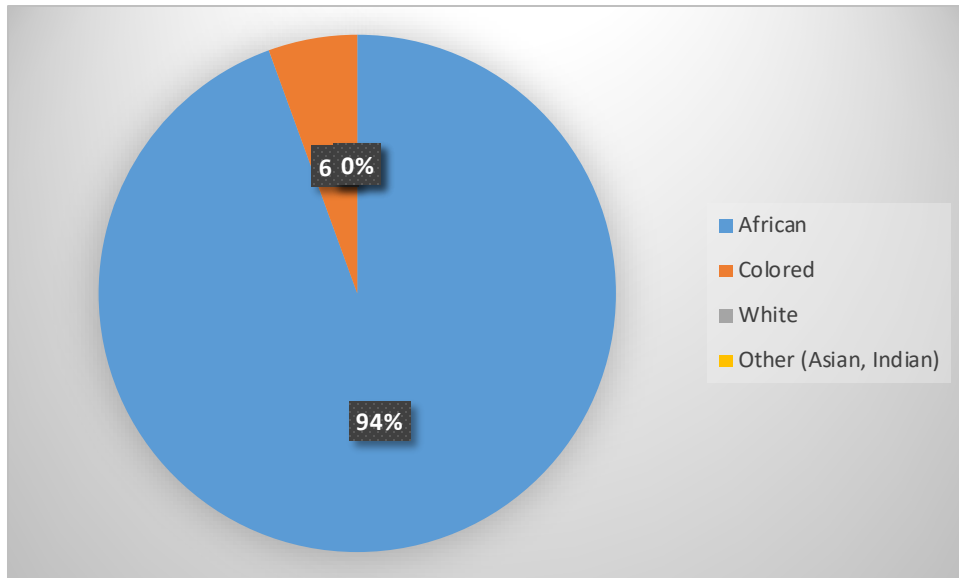


Figure 4.4 indicates that the majority, at 94%, of the participants, are Africans and the remaining 4% are coloreds. There were no white nor Asian or Indian participants. From these results, it can be concluded that the majority of the post-graduate students in Project Management are of African descent. In line with Bopape's findings (2018:38), these results indicate that the number of African students at the post-graduate level has risen.

4.2.5 Employment status

Employed	
Self Employed	
Unemployed	
Other	

Figure 4.5 Employment status

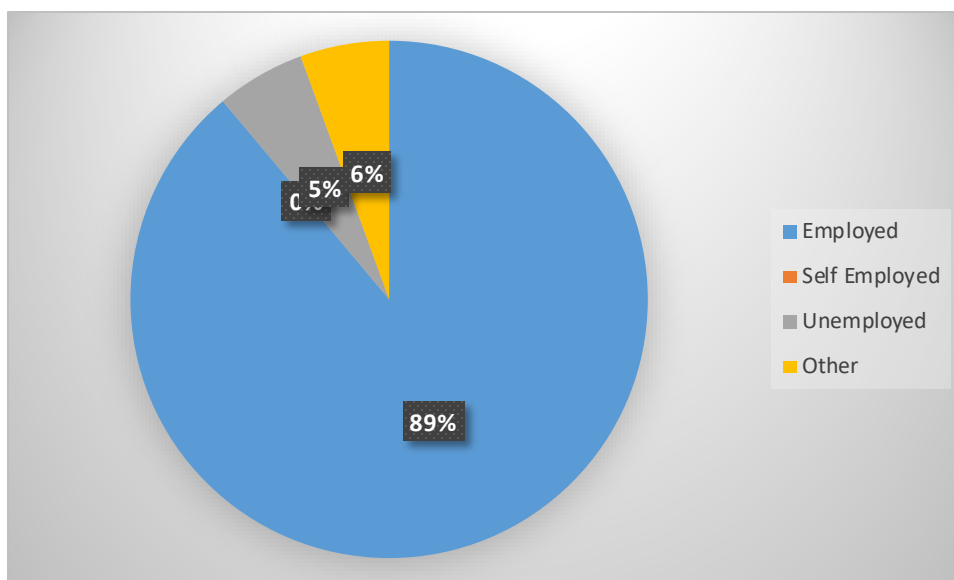


Figure 4.5 above specifies that 89% of the participants were employed while 5% were unemployed. The figure also indicates that 6% were engaged in other activities. No self-employed participants took part in the study. With such a large percentage of participants being employed, this demonstrates a high likelihood that they could become preoccupied with job responsibilities whilst studying. This poses a distraction and so time management skills would need to be employed, failing which significant delays in their academic work would likely result.

4.2.5 Year of 1st registration for Postgraduate

Pre 2012	
2012 - 2015	
2016 - 2017	

Figure 4.6 Year of first registration for Postgraduate

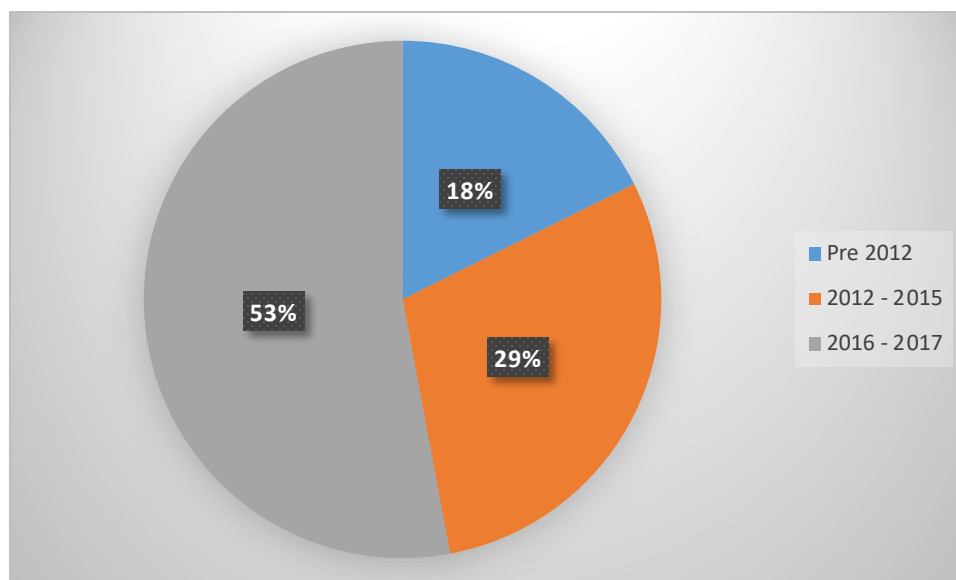


Figure 4.6 indicates that 18% of the participants registered for the program before 2012, 29% registered between 2012 and 2015, while 53% registered between 2016 and 2017. The analysis indicates that just below half of the participants have been registered for more than four years into the program. As stated by Hadi (2019:59) it is true that many postgraduate students globally, take longer to complete their studies due to several reasons such as supervisor-related, personal, financial as well as other factors connected to research skills and academic performance.

4.2.6 Current status of registration

Registered	
Not registered	

Figure 4.7 Current status of registration

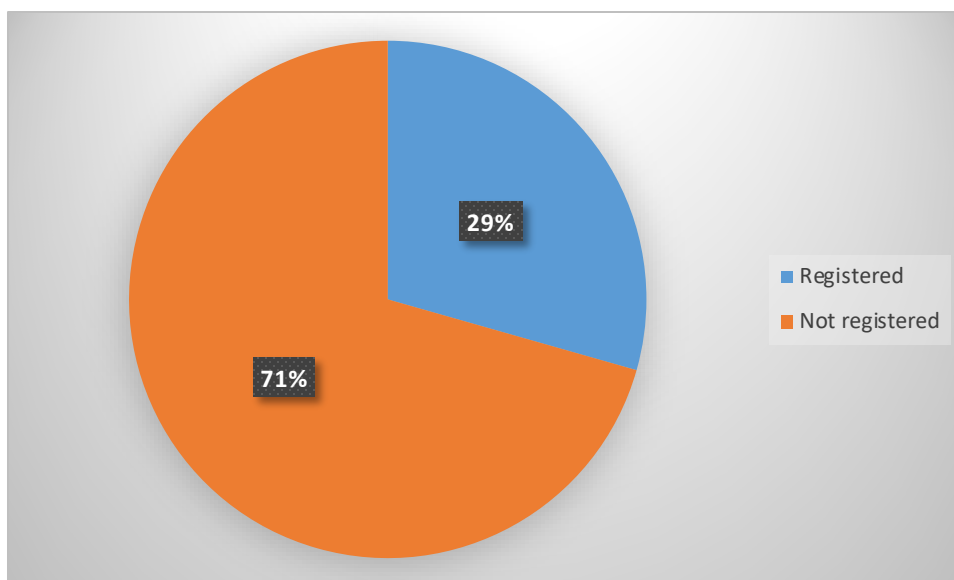
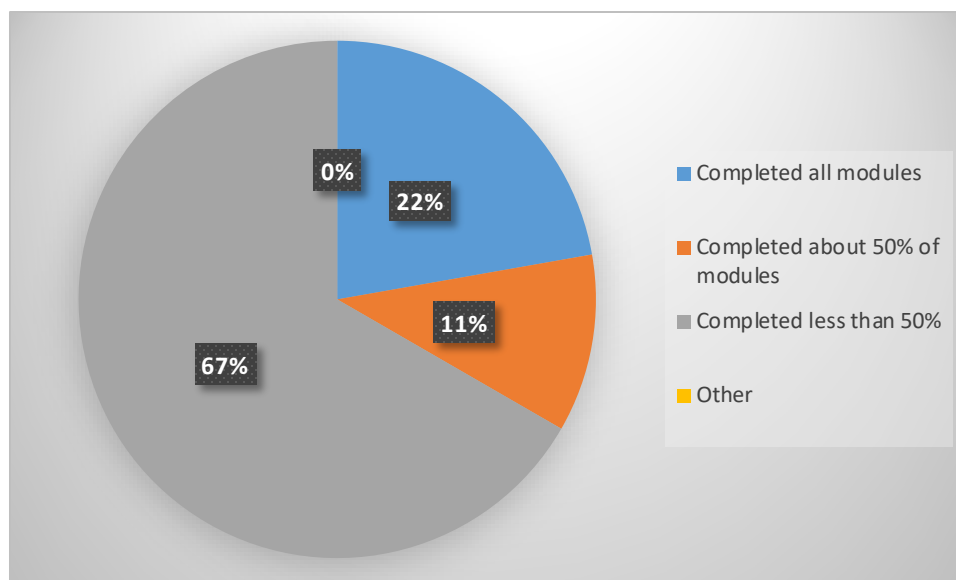


Figure 4.7 above indicates that 29% of the participants were registered while 71% were not registered. A follow-up question also asked the participants to elaborate why they have not registered and 1 response was received, indicating that the course had been completed. However, it should be noted that students should be registered within a certain period to be considered formally as academics within the institution.

4.2.7 Completion of other modules

Completed all modules	
Completed about 50% of modules	
Completed less than 50%	
Other	

Figure 4.8 Completion of other modules

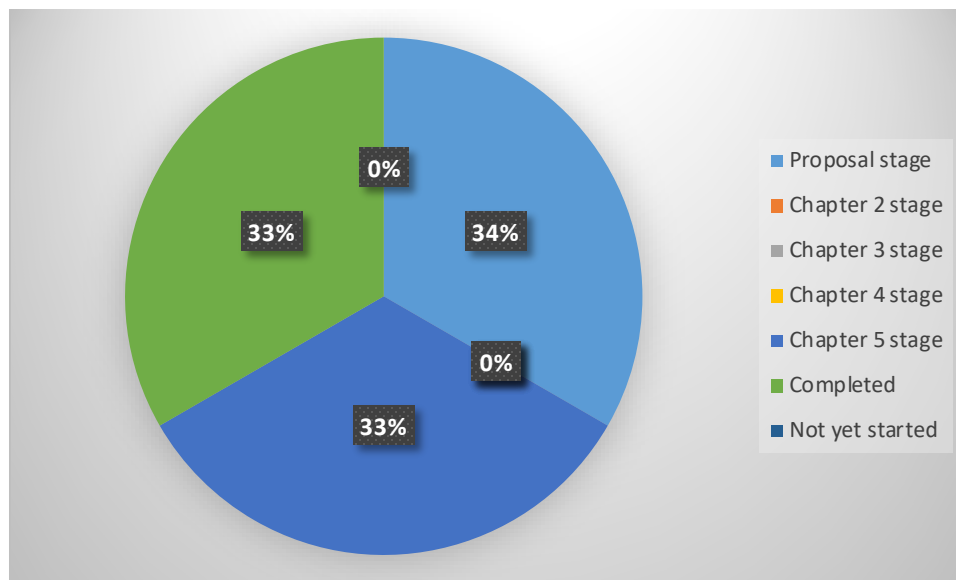


Participants were asked to explain their progress with their postgraduate studies. According to Figure 4.8, 67% of the participants indicated that they completed less than 50% of the modules, 22% have completed all modules and 11% had completed more than 50% of the modules. According to these results, it can be concluded that more than half of the students are not close to finishing their post-graduate studies. Sonn (2018:234) maintains that many postgraduate students find it difficult to express themselves in the English language hence reluctance in completing their research. Equally, Amehoe (2013:6) concluded that it is of importance that postgraduate students are equipped with research methodology skills in order to prepare them for research.

4.2.8 Status of mini-dissertation/thesis

Proposal stage	
Chapter 2 stage	
Chapter 3 stage	
Chapter 4 stage	
Chapter 5 stage	
Completed	
Not yet started	

Figure 4.9 Status of mini-dissertation/thesis



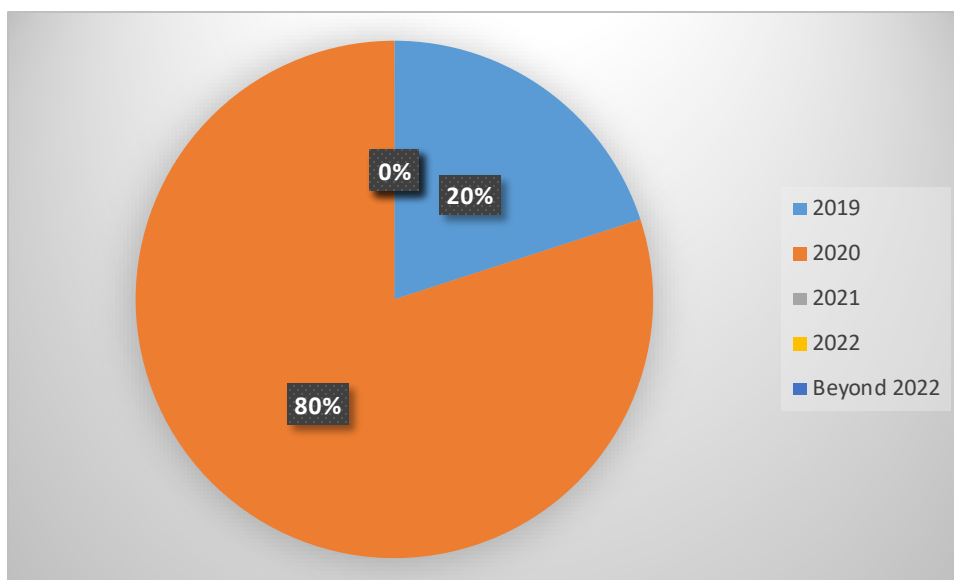
According to Figure 4.9, 34% of the respondents indicated that their dissertation was at the proposal stage, 33% were at the chapter 3 stage and another 33% were completed. There were no participants at chapter 4 stage nor chapter 5 stage with their dissertations.

It can be confirmed that besides the participants that have completed, a few more participants still need to move forward with their dissertations. Krish et al (2017:245) indicated that postgraduate students in Malaysia are required to take a compulsory research methodology course, which will improve their skills in writing. In the case of this research, respondents have identified work commitments, supervisor relationships, lack of time management, research is a grey area and other factors (these factors were not mentioned by participants) were the main challenges that affected their studies.

4.2.9 Expected date of completing the qualification

2019	
2020	
2021	
2022	
Beyond 2022	

Figure 4.10 Expected date of completion of the qualification

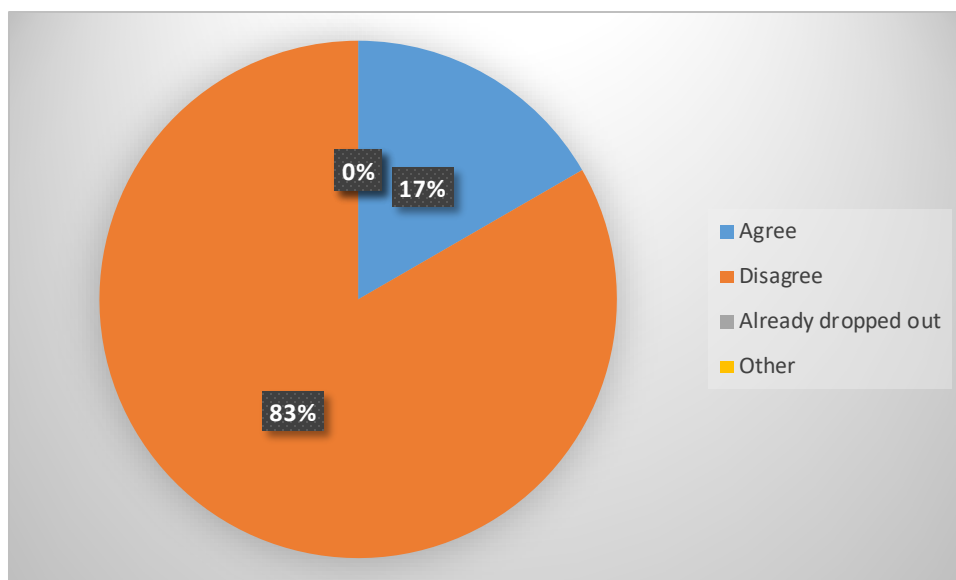


According to Figure 4.10, 20% of the participants plan to complete their studies by 2019, and the balance of 80% plan to complete by 2020. There were no participants that plan to finish by 2021 or beyond. From these results, it can be noted that all participants have prioritized completion of their studies and they plan to complete sooner rather than later. The institution will also be expelling the students that have been on the system beyond the five years and those that registered in 2017, would have reached their maximum time allowed.

4.2.10 I have considered dropping out of this qualification

Agree	
Disagree	
Already dropped out	

Figure 4.11 Consideration of dropping out

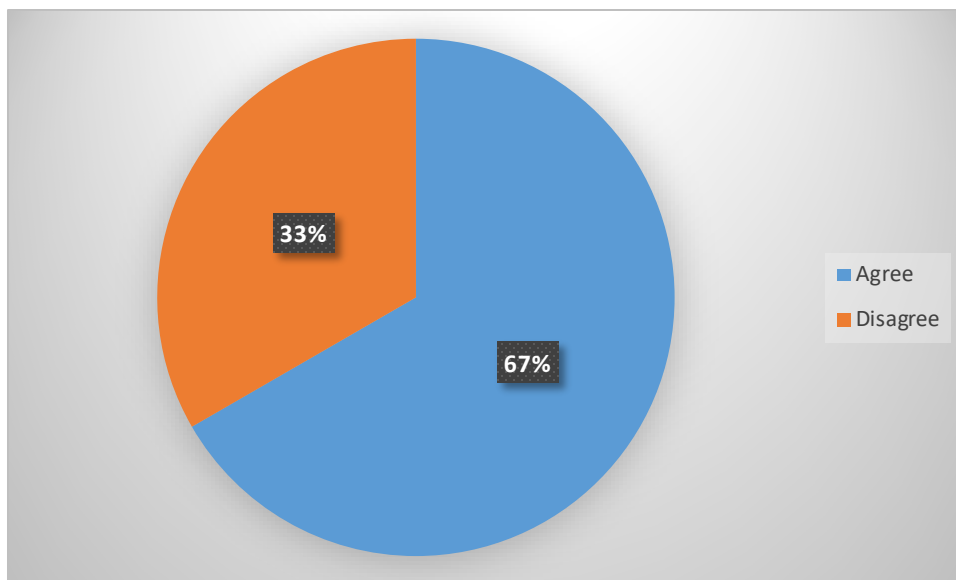


Participants were also asked if they have considered dropping out of their studies or programs and according to Figure 4.11, 83% have not considered dropping out and the balance of 17% have considered dropping out. There were no participants that have already dropped out. According to these results, it can be concluded that a small percentage of the participants are struggling to complete their studies, while a bigger margin is willing to carry on and complete their studies. One participant elaborated that they completed the course already when asked if there was any other opinion.

4.2.11 This qualification is/has taken longer than expected to complete

Agree	
Disagree	

Figure 4.12 Period taken to complete the qualification

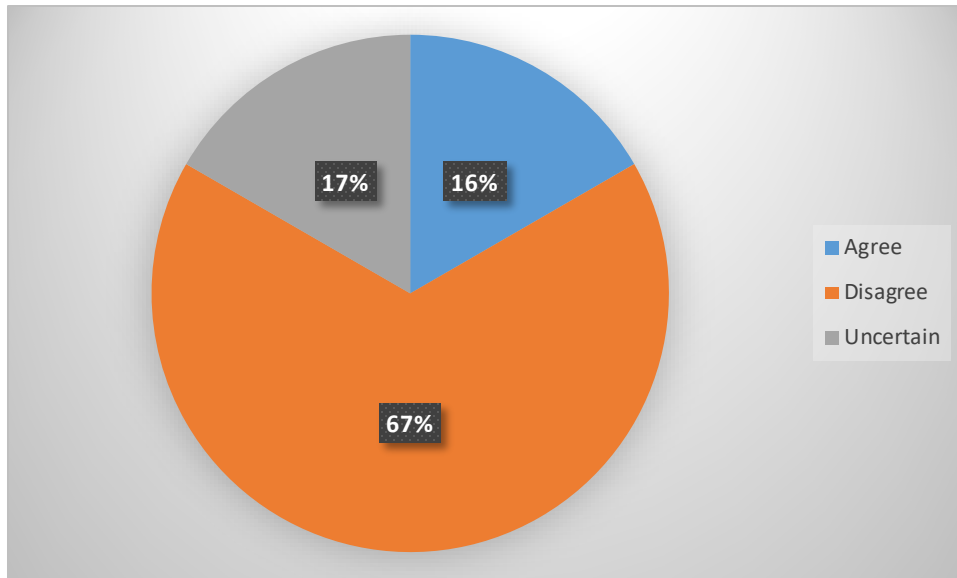


When the participants were asked whether the qualification took longer than expected to complete, 67% agreed that it took longer than expected and the balance of 33% disagreed. It can be concluded that the majority of the participants took a longer period to complete their studies and only a few completed in the expected time frame.

4.2.12 I will come back in the future to complete my qualification: 6 responses

Agree	
Disagree	
Uncertain	

Figure 4.13 Consideration to come back and complete the qualification

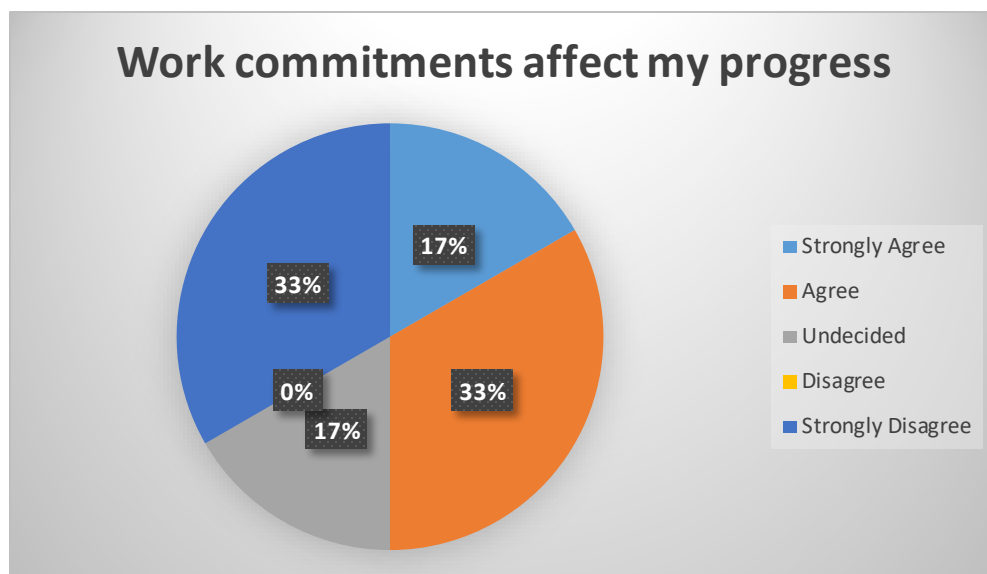


Participants were also asked if they were planning to return in the future to complete their studies if they fail to complete them by the maximum period allowed. As per the findings, only 16% planned to return to complete their studies, while 17% of the participants were uncertain of their future with the unconcluded studies. However, 67% of the participants disagreed with coming back in the future to complete. From these results, it can be concluded that at least a few students plan to complete their studies in the future while they currently prioritize other commitments. However, this further has an impact on the plan to increase graduation rates and influence student retention in higher education.

4.2.13 Please indicate which factors are impacting or have impacted your postgraduate studies

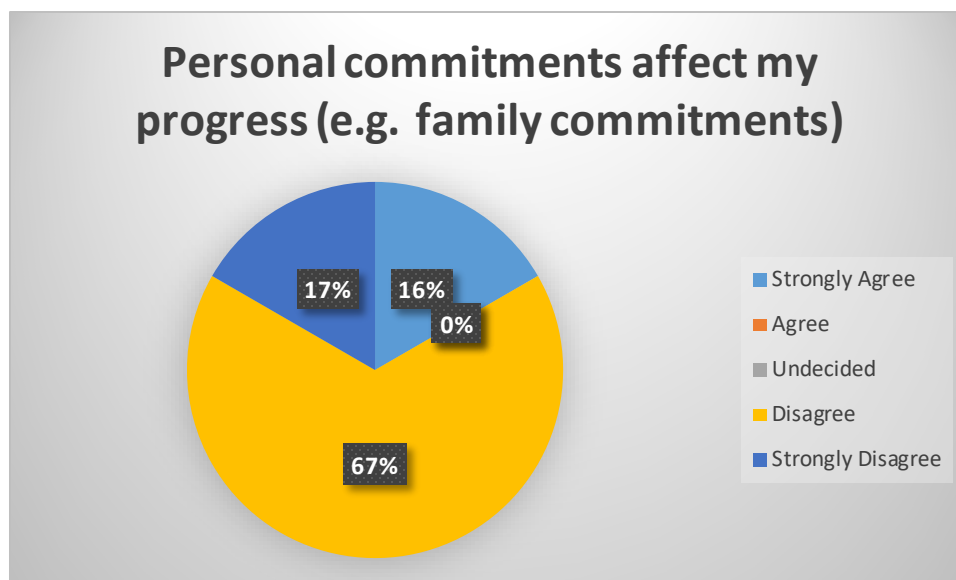
The participants were also asked to indicate and measure factors that have impacted their postgraduate studies.

Figure 4.14 Work commitments affect the progress



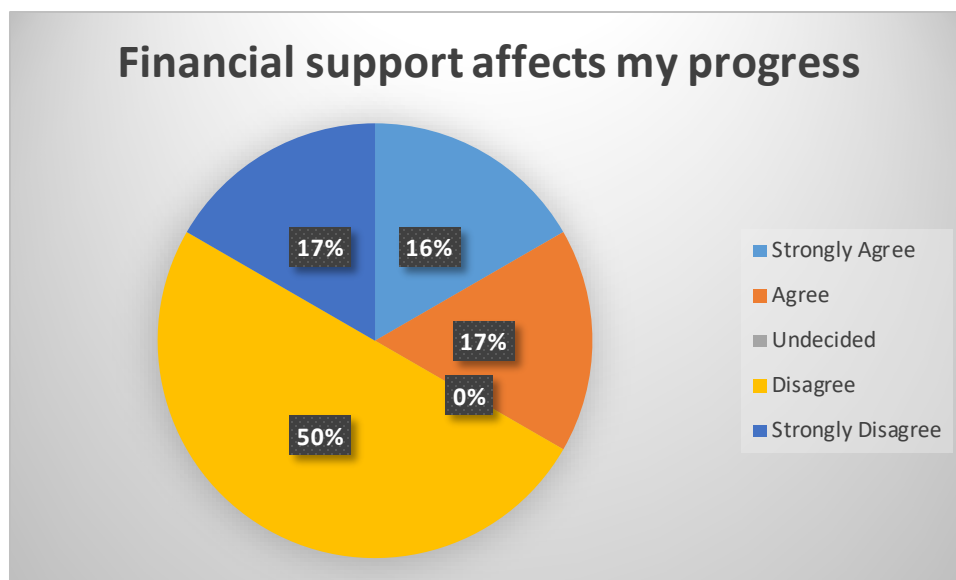
When participants were asked whether work commitments affect their progress, 17% strongly agreed that work commitments affected their progress, 33% agreed, 17% were not sure and the other 33% also strongly disagreed that work commitments affected their studies. The findings indicate that work commitments affect the progress of postgraduate students at the University of Technology. Visser (2011:3) highlighted the fact that, in most instances, postgraduate students usually attend their studies part-time due to other commitments such as career development or family matters that they are expected to attend to.

Figure 4.15 Personal commitment affect studies



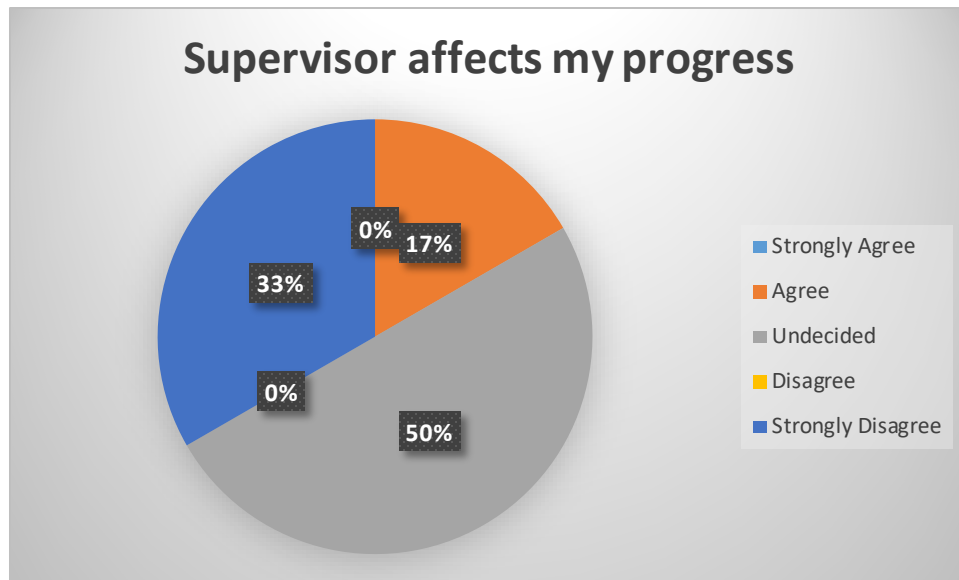
When participants were asked whether personal commitments affect their progress, 67% of the participants disagreed that personal commitments affect their studies, 17% strongly disagreed and 16% strongly agreed. From these results, it can be concluded that personal commitments do not generally affect the progress of postgraduates' studies. Some fewer participants indicated that personal commitment is a huge factor affecting their progress. As cited by Amehoe (2013:16) many postgraduate students, especially mature students, would have a combination of work, family, and social commitment under one umbrella to try to find balance and fulfill all the commitments.

Figure 4.16 Financial support affect the progress



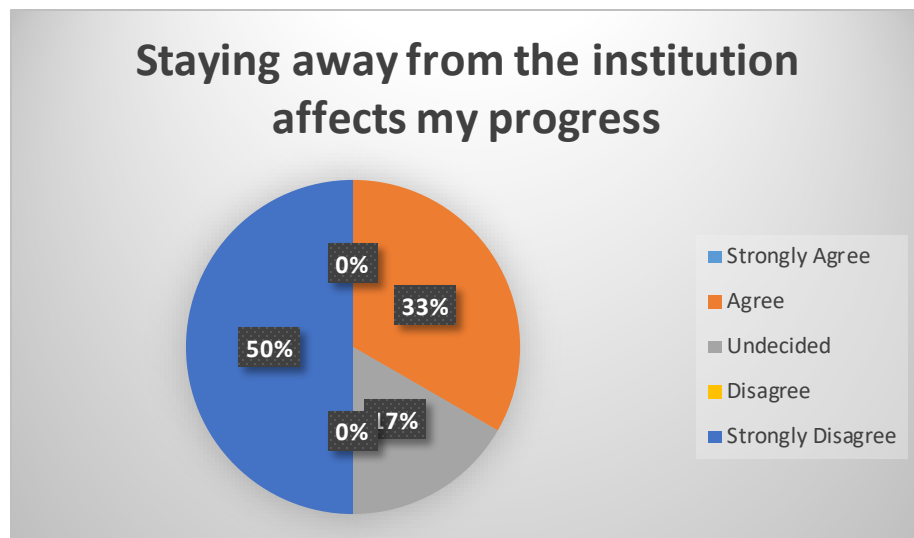
When the participants were asked whether financial support affected their progress, 50% of the participants disagreed, 17% strongly disagreed, while the other 17% agreed and only 16% strongly agreed. From the results, it can be concluded that financial support is not a factor that affects the progress of postgraduate students at the University of Technology. However, Singh (2018:1043) indicated financial situation is one of the factors that affect postgraduate performance, and if institutions could offer financial support grants for research, graduate assistant positions, fellowships as well as sponsorships to conference attendance, most students would be able to focus on their studies and therefore improving output rates at universities.

Figure 4.17 Supervisor affect the progress



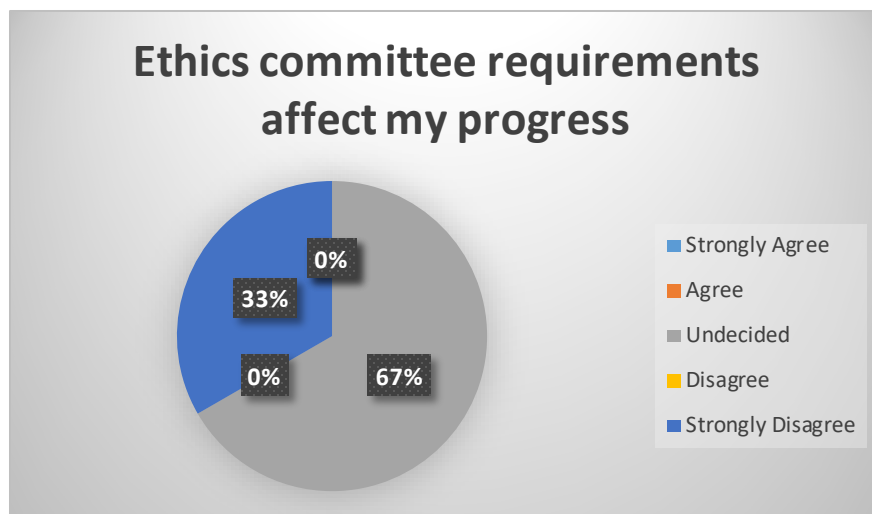
When participants were asked whether the supervisor affects their progress, 50% were undecided, 33% strongly disagreed and 17% agreed. The results in the above figure, therefore, suggest that the supervisor is not the major factor that affects the progress of post-graduate students at a University of Technology. However, Ezebilo (2012:49) stipulated that, for students to succeed, the relationship with supervisors is very important and this needs to be maintained throughout. Moreover, Sonn (2016:237) agrees that most students have strong views regarding relationships with supervisors. Students have said that some supervisors are rude and always have negative comments that do not provide any motivation to students.

Figure 4.18 Staying away from institution affect studies



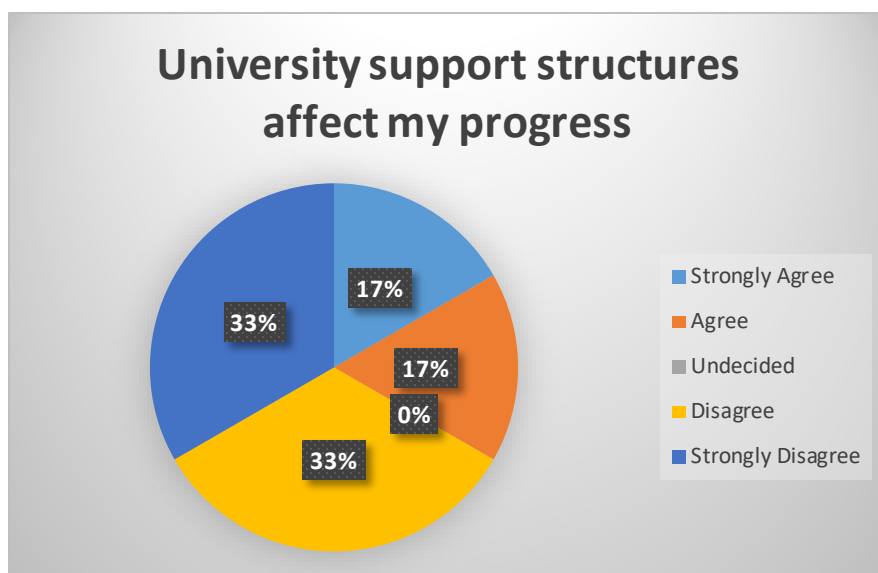
Participants were also asked if staying away from the institution affects their progress and 50% strongly disagreed, 33% agreed and 17% were uncertain whether staying away affects their progress. These results suggest that staying away from the institution is not a factor that affects postgraduate students at the University of Technology.

Figure 4.19 Ethics committee requirements affect the progress



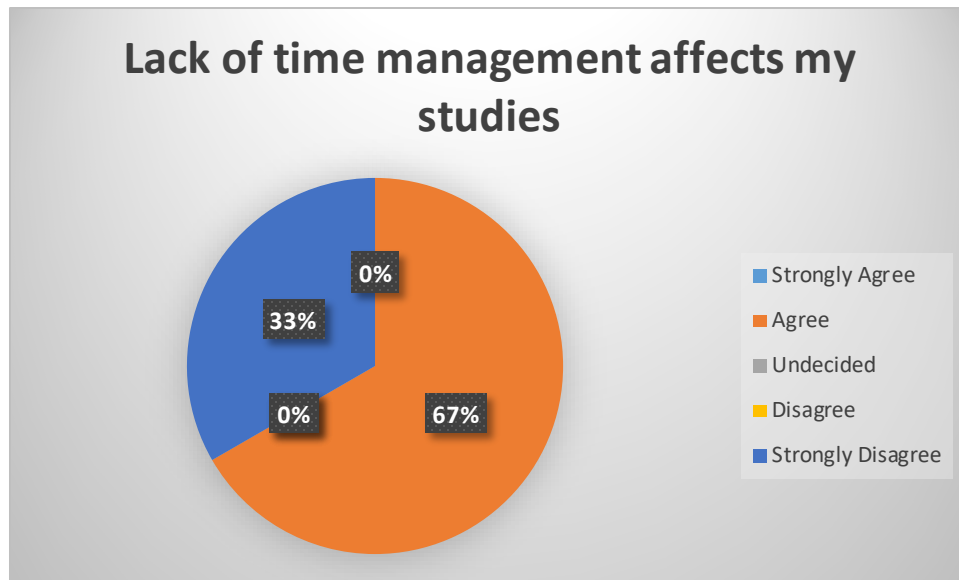
When participants were asked whether ethics committee requirements affect their progress, 67% were uncertain and 33% strongly disagreed. From these results, it can be concluded that ethical committee requirements are not a factor that affects postgraduate progress at the University of Technology. Ethics committee requirements have many forms that students need to sign and submit. There are also time frames that are sometimes not suitable for the students.

Figure 4.20 University support structures affect the progress



Participants were also asked if the university support structure affects their progress and 33% of participants strongly disagreed and 33% agreed. Furthermore, 17% of the participants agreed and another 17% strongly agreed. These results also suggest that university support structure is not a factor that affects the progress of postgraduate students at a University of Technology. However, Baguley et al. (2015:164-165) argued that more and more students choose to further their postgraduate studies based on the institution's existing knowledge and experience and postgraduate students will also change universities to broaden their experience in research, better opportunities, exercising the freedom to move as well as healthier financial conditions.

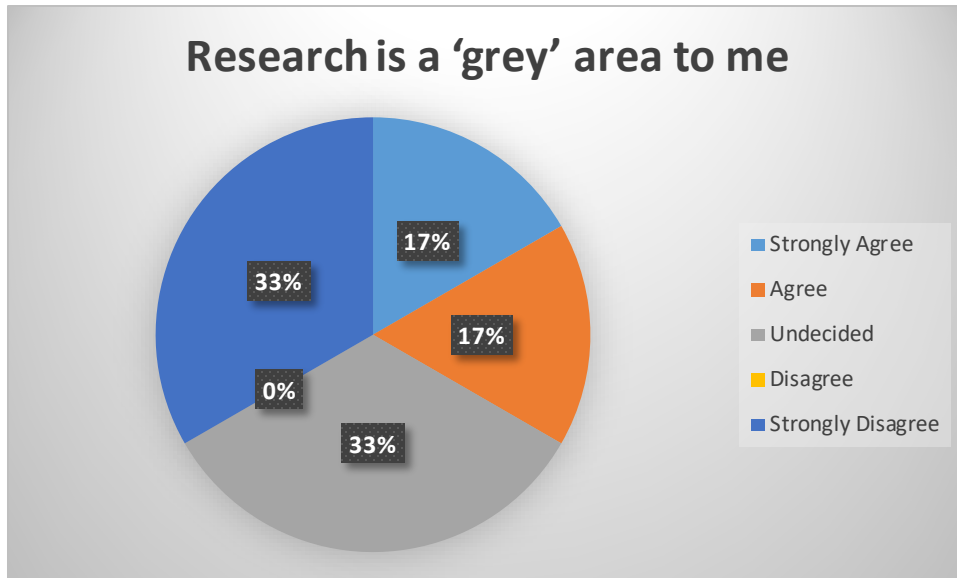
Figure 4.21 Lack of time management affect my studies



When participants were asked whether lack of time management affects their progress, 67% agreed and 33% strongly disagreed. These results suggest that lack of time management is indeed a factor that affects the progress of postgraduate students at the University of Technology.

Many students complain about time management amongst other commitments such as family and work (Visser 2011:3). Layth et al. (2017:14) also agree that good time management in performing tasks eliminates exhaustion.

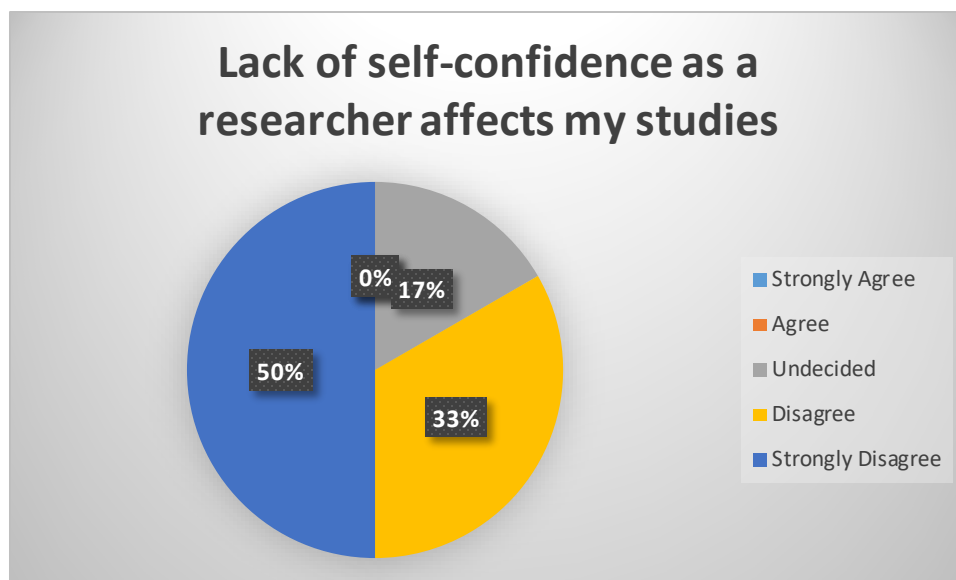
Figure 4. 22 Research is a grey area



The participants were also asked if research is a “grey” area that affects their progress and the 33% of the participants were undecided, the other 33% strongly disagreed. Meanwhile, 17% of the participants agreed and the other 17% strongly agreed. These results suggest that the postgraduate students at University of Technology are still confused about research.

There is the same percentage of participants who are uncertain as those that agree and disagree. It can also be concluded that this is one of the factors that affect postgraduate students at the University of Technology. Schulze and Lemmer (2017:55) also agree that academic writing at the postgraduate level has raised major concerns as many students struggle to meet the requirements to write a thesis or dissertation.

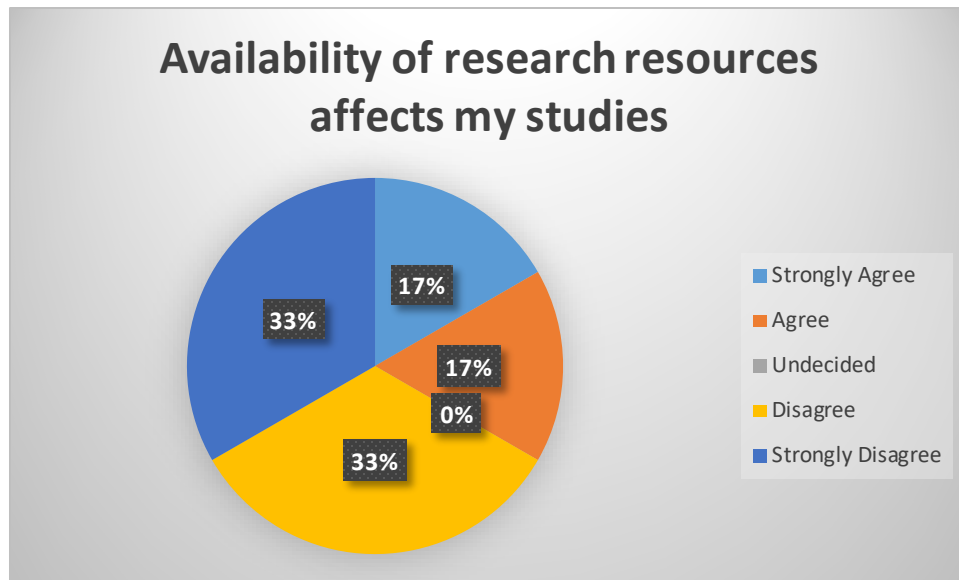
Figure 4.23 Lack of self-confidence affect studies



Participants were also asked if lack of self-confidence as researchers affects their studies and the results indicate that 50% strongly disagree, 33% disagree and 17% was undecided.

These results conclude that lack of self-confidence as a researcher is not a factor that affects the progress of postgraduate students at the University of Technology. Rochford (2003:219-220) recorded that more students begin their postgraduate journey without sufficient experience in research and advise that strategies should be implemented to facilitate students' self-esteem and confidence.

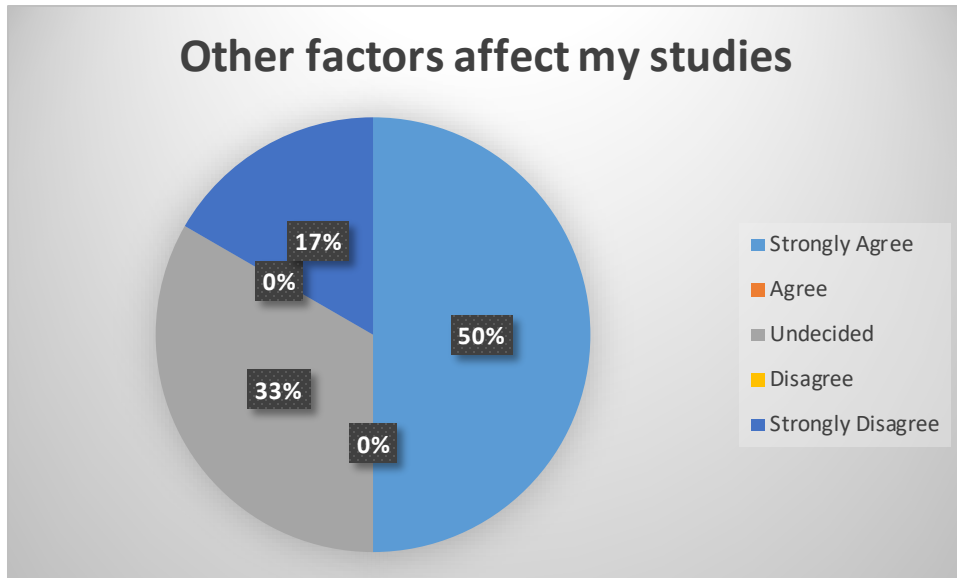
Figure 4.24 Availability of research resource affect studies



When participants were asked whether the availability of research resources affects their studies and their progress, 33% strongly disagreed and another 33% disagreed. Also, 17% of the participants agreed and another 17% strongly agreed.

The results, therefore, suggest that the availability of research resources is not a factor that affects the progress of postgraduate students at a university of technology. This also indicates that the university is equipped with adequate resources and infrastructure to accommodate postgraduate students. Students have access to libraries, they have access to e-learning, and an e-library which can be used by all registered students when they are not on campus. However, Kimani (2014:65) indicated that quality of supervision is becoming highly compromised due to increasing demands and subsequent expansion of higher learning as well as the workload of supervisors due to lecturing, marking of exam papers, own research and development, publications, and management of work lead to compromise of quality supervision.

Figure 4.25 Other factors affect studies



Participants were asked if other factors affect studies and as evident in Figure 4.25 above, 50% strongly agreed, 33% were undecided and 17% strongly disagreed. These results conclude that there are indeed other factors that affect the progress of postgraduate students at the University of Technology. However, participants did not elaborate on other factors that affect their postgraduate studies and this could be related to personal issues.

4.3 Summary of findings

The primary objective of this study was to investigate the main factors that affect the throughput rate of postgraduate students at the University of Technology. A structured questionnaire was established for this study and the participants were requested to identify the factors that hindered or negatively affected their studies. The findings were as follows:

4.3.1. When participants were asked whether work commitments affect their progress 17% strongly agreed, 33% agreed, 17% were not sure and the other 33% also strongly

disagreed. These results indicate that work commitment affects postgraduate progress with their studies.

4.3.2. Participants were also asked if personal commitments affected their progress (e.g. family commitments) and 67% of the participants disagreed, 17% strongly disagreed and 16% strongly agreed. These results indicate that personal commitment does not affect the progress of postgraduate students at the University of Technology.

4.3.3. When participants were asked if financial support affected their progress, 50% of the participants disagreed, 17% strongly disagreed, while the other 17% agreed and only 16% strongly agreed. These results suggest that financial support is not a factor that negatively affects the progress of postgraduate students at the University of Technology.

4.3.4. When participants were asked if the supervisor affected their progress, 50% were undecided, 33% strongly disagreed and 17% agreed. These responses indicate that this may not be a major factor but the relationships should be improved between supervisors and postgraduate students.

4.3.5. Participants were asked whether staying away from the institution affects their progress and 50% strongly disagreed, 33% agreed and 17% were uncertain whether staying away affects their progress. These results indicate that this is not a factor that affects the studies of postgraduate students.

4.3.6. When participants were asked whether ethics committee requirements affect their progress, 67% were uncertain and 33% strongly disagreed. These results imply that the ethics committee requirements are not a factor that affects postgraduate progress at the University of Technology.

4.3.7. When participants were asked if university support structures affected their progress, 33% of participants strongly disagreed and the other 33% disagreed. Furthermore, 17% of

the participants agreed and another 17% strongly agreed. These results suggest that university support structure is not a factor negatively affecting the progress of postgraduate students with their studies.

4.3.8. Participants were also asked if lack of time management affected their studies and 67% agreed, while 33% strongly disagreed. The results implied that lack of time management is a huge factor that affects the progress of postgraduate students with their studies.

4.3.9. When participants were asked whether research is a 'grey' area to them and that it affected their progress negatively, 33% of the participants were undecided, the other 33% strongly disagreed, 17% agreed and the other 17% strongly agreed. These results signify that this is one of the factors that negatively affect the progress of postgraduate students.

4.3.10. Participants were asked if lack of self-confidence as researchers affected their studies and 50% strongly disagreed, 33% disagreed and 17% was undecided. These results displayed that this was not a factor that negatively affected postgraduates' progress towards their studies.

4.3.11. When participants were asked whether the availability of research resources affected their studies, 33% strongly disagreed and another 33% disagreed. Meanwhile, 17% of the participants agreed and another 17% strongly agreed. These results indicated that the institution has enough resources to support postgraduate students with their studies. This was therefore not a factor that affected the students' progress to complete their studies on time.

4.3.12. Participants were also asked whether other factors affected the progress of their studies. The results indicated that other factors affected studies of postgraduate students at the University of Technology. However, although participants were asked to elaborate, they

did not respond or indicate the other factors that played a role in negatively affecting their studies.

4.4 Conclusion

Chapter Four presented the findings of factors that impacted the throughput rate of postgraduate students at the study at the University of Technology. The results aimed to gather findings from both the postgraduate students and the academic staff, but unfortunately, there were no responses from the academic staff and a follow-up was a challenge due to the current pandemic. However, the findings dictate that there are indeed some factors that affect the completion of studies of postgraduate students. Mabunda and Ntshoe (2012:47) agree that there are several factors or reasons why students abandon their studies or take longer to complete their postgraduate studies. It is also clear from other researchers that factors that affect postgraduate studies differ from one institution to the other. This research, according to the perception of postgraduate students, has identified the following factors that affect the completion of postgraduate studies within one of the departments at a University of Technology:

- Work commitments;
- Supervisor relationships;
- Lack of time management;
- Research is a grey area; and
- Other factors (these factors were not mentioned by participants).

Fraser and Killen (203:225) raised an interesting point that the perception of either students or lecturers of what factors affect throughput rates of students will undoubtedly influence their behavior.

CHAPTER FIVE – CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

Chapter Five provides conclusions and recommendations based on the data collected, analyzed, and interpreted in the previous chapter. To reflect, the aims and objectives of this research were as follows:

- a. The main objective was to investigate the main factors that affect the throughput rate of postgraduate students at a University of Technology.

The secondary objectives were:

- b. To examine the current throughput and dropout rates of postgraduate students at a University of Technology; and
- c. To identify challenges that impact the throughput rate of postgraduate students.

This chapter is also addressing the following research questions:

- a. What are the current throughput and dropout rates of postgraduate students at the University of Technology?
- b. What are the factors that affect throughput rates of postgraduate students at a University of Technology? and
- c. What are the recommendations to improve throughput rates of postgraduate students at the University of Technology?

This chapter will therefore focus on the conclusions drawn from the analyzed results derived from the questionnaire and make recommendations.

5.2 Summary overview of chapters

Chapter One provided the introduction and background of the study whereby the initial idea of the research was clarified. This chapter also described the problem statement of the study which defined the motives behind the study. Research questions and objectives were also defined in this chapter to indicate what the study would like to achieve.

Chapter Two presented and explored the literature review which is the heart of the research that reflect views and information from other researches that have been carried out addressing the stated problem or similar research of the factors that influence and affect the throughput rates of postgraduate students in many other higher education institutions within South Africa and other international higher education institutions. Chapter Two also discussed the retention rates and identified some strategies recommended by previous research, such as support before registration and after registration to be provided to those willing to enroll for postgraduate studies. These strategies aim to influence success rates and improve graduation rates of postgraduate students by better preparing them. Moreover and most importantly, this chapter equipped the researcher with comprehensive knowledge and understanding of the realities of the postgraduate issues and hardships concerning completing their studies.

Chapter Three provided the research methodology. It outlined techniques and methodology such as a structured questionnaire used to collect data, which the study followed to complete the research study. It also indicated sampling methods and size of the sample, data collection techniques, and analysis.

Chapter Four focused on the research findings, analysis, and interpretation which provided results received from the questionnaires that were administered to participants.

Chapter Five provided a summary of results, conclusions, and recommendations based on the findings of the study, and the critical aspects of the study were highlighted.

5.3 Conclusions

The conclusions aim to address the following objectives:

- a. Primary objective: To investigate the main factors that affect the throughput rate of postgraduate students at a University of Technology.

Previous researchers such as Bopape, Visser, Sonn, Ezebilo, Keane, have cited many diverse factors that have affected and hindered completion rates of postgraduate students at higher education institutions. Factors such as student preparedness, financial challenges, student housing challenges, lack of commitment, conflicting commitments, time management, and student support and student and supervisor relationships have been identified as the most common factors that affect throughput rates at most higher education institutions.

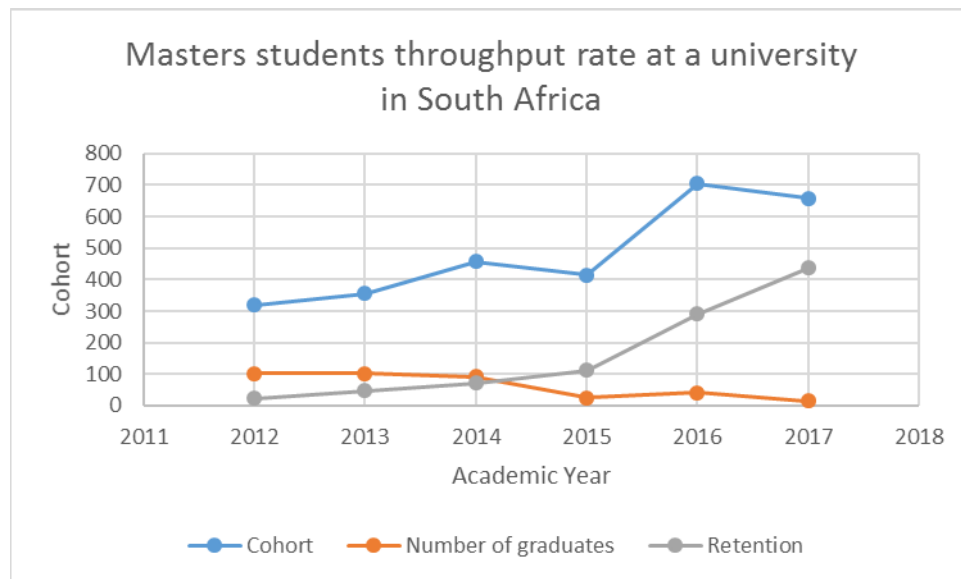
The findings of this study have highlighted the following factors that affect the throughput rate of postgraduate students at the University of Technology:

- Work commitments;
- Supervisor relationships;
- Lack of time management;
- Research is a grey area; and
- Other factors (these factors were not mentioned by participants); were identified as main challenges affecting the throughput rates of postgraduate students.

The secondary objectives of the study are as follows:

- a. To examine the current throughput and dropout rates of postgraduate students at a University of Technology; and
- b. To identify challenges that impact the throughput rate of postgraduate students.

This study highlighted the fact many researchers have indicated that more postgraduate students tend to take longer than the maximum period of three years to complete their postgraduate studies due to certain factors as mentioned that affect their studies. This study also found that, as per the figure below, retention of the students has been increasing but the graduation rate has been dropping at one of the universities of Technology in South Africa.



Similarly, Marnewick and Pretorius (2016:1) also noted that, across the globe, the number of registered postgraduate students does not equate to the number of graduates at the same level. Barnard and Fourie (2013:2) also agreed with the fact that national and international

higher education institutions are experiencing low throughput and this affects the limited resources within the institutions and unnecessarily puts students under enormous financial and emotional pressures.

This research also found that more than half of the participants found research to be grey area for them, which then suggested that most of them lacked research knowledge. Rochford (2003:219-220) also recorded that more students begin their postgraduate journey without sufficient experience in research. Equally, Amehoe (2013:6) concluded that it is of importance that postgraduate students are equipped with research methodology skills to prepare themselves for the actual studies. The findings of this research also highlighted the work commitments, supervisor relationships, and lack of time management as the main challenges in completing the studies. Nasrullah and Khan (2015:67) indicated that time management is a skill that every student needs to apply as it assists in boosting and enhancing academic productivity. According to Visser (2011:3) studying part-time has been the most challenging for postgraduate students, due to a lack of balancing of conflicting commitments to alleviate stress. Rooij et al (2019:4) emphasized the importance of the relationship between a student and a supervisor. This factor is vital as this will most likely determine the satisfaction and completion of the student's program.

5.4 Recommendations

Based on the findings and conclusions drawn in this research, the following recommendations are made:

- The findings indicate that work commitments affect the postgraduate studies of some students. It is therefore recommended that such students be identified at the beginning of the program and more assistance should be provided.

- The findings also show that supervision plays a vital role in completing their studies. It is highly recommended that this matter be highly prioritized and the gaps regarding supervision are attended to immediately.
- The findings show that time management is also one of the factors that affect the success rate of postgraduate studies. It is recommended that postgraduate students be encouraged to make use of planners by breaking down the research into milestones and enforcing timeframes with major consequences if they are missed without any valid reason.
- The findings also indicate that most postgraduate students find research to be challenging. It is therefore recommended that exposure to research at the undergraduate level is enhanced. Students' preparedness and competency levels must be at an acceptable scale in terms of writing and critical reading amongst others.
- It is recommended that further studies can be conducted on entire institutions and not just in one department.

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APPENDICES

APPENDIX A – QUESTIONNAIRES COVER



APPENDIX A: RESEARCH INSTRUMENT (QUESTIONNAIRE)

Thakane Khaue
33 Woudenberg Street
Sonking
Brackenfell
7570

Dear Sir/Madam

I hereby request your consent to participate in a study titled: **Factors impacting postgraduate throughput rate at a South African University of Technology in Cape Town.** The study is towards the completion of my Master's Degree in Business Administration in Project Management at Cape Peninsula University of Technology.

Your reflective inputs will be used to positively develop the university and tackle the challenges of the postgraduate students within the institution. Any information or material that might be drawn upon will be utilised in a confidential manner and any identifying material will be edited or amended to protect your identity.

Kindly also take note of the following:

- Participation is completely voluntary;
- When you decide to participate, the researcher will ensure anonymity by not publishing the names of the participants; and
- You may also not respond to any questions that you feel are against your principles or make you uncomfortable in any way.

NB: However, your participation will be highly appreciated.

To ensure confidentiality, data collected will be stored securely in a locked filing cabinet in the research supervisor's office in the Faculty of Business and will only be accessed by the researcher.

APPENDIX B – QUESTIONNAIRE – STUDENTS

Please tick with (X) where appropriate

1. Gender

Male	
Female	

2. Age

20 – 29 years	
30 – 39 years	
40 – 49 years	
50+ years	

3. Marital Status

Married/Cohabiting	
Single	
Divorced	
Other (separated, widowed)	

4. Ethnical group

African	
Colored	
White	
Other (Asian, Indian)	

5. Employment status

Employed	
Self Employed	
Unemployed	
Other	

6. Year of 1st registration for Postgraduate

Pre 2012	
2012 - 2015	
2016 - 2017	

7. Current status of registration

Registered	
Not registered	

If not yet registered, what are the reasons?

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8. Completion of other modules

Completed all modules	
Completed about 50% of modules	
Completed less than 50%	
Other	

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9. Status of mini-dissertation/thesis

Proposal stage	
Chapter 2 stage	
Chapter 3 stage	
Chapter 4 stage	
Chapter 5 stage	
Completed	
Not yet started	

12. This qualification is/has taken longer than expected to complete

Agree	
Disagree	

10. Expected date of completing of the qualification

2019	
2020	
2021	
2022	
Beyond 2022	

13. I am will come back in future to complete my qualification

Agree	
Disagree	
Uncertain	

11. I have considered dropping out this qualification

Agree	
Disagree	
Already dropped out	

Elaborate:

.....

14. Please indicate which factors are impacting or have impacted your postgraduate studies. Please use (X) to indicate the most appropriate block

No	Factors	SCALE				
		1	2	3	4	5
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
a	Work commitments affect my progress					
b	Personal commitments affect my progress (e.g. family commitments)					
c	Financial support affects my progress					
d	Supervisor affects my progress					
e	Staying away from the institution affects my progress					
f	Ethics committee requirements affect my progress					
g	University support structures					

	affect my progress					
h	Lack of time management affect my studies					
i	Research is a 'grey' area to me					
j	Lack of self-confidence as a researcher affect my studies					
k	Availability of research resources affect my studies					
l	Other factors affect my studies					

If other, kindly elaborate

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END!!

APPENDIX C – QUESTIONNAIRE – STAFF

Please tick with (X) where appropriate

1. Gender

Male	
Female	

2. Age

20– 29 years	
30 -39 years	
40 – 49 years	
50+ years	

3. Your title

Mr	
Mrs	
Dr	
Prof	

4. Your highest qualification

Master Degree	
Doctorate	

5. Postgraduate Level of supervision

MTech	
DTech	

6. Experience in supervision

Less than 2 years	
2 – 4 years	
4 – 8 years	
8 years or more	

7. Ethnical group

African	
Colored	
White	
Other (Asian, Indian)	

8. Are you currently lecturing Masters Students?

Yes	
No	

9. What is the status of graduation rate of postgraduates students in the last 10 years

Status	Agree	Disagree
Increasing		
Decreasing		
Same		

10. What is the status of retention of postgraduate students in the last 10 years

Status	Agree	Disagree
Increasing		
Decreasing		
Same		

11. Percentage of students you have supervised that have dropped out or discontinued.

Percentage (%)	
0 – 5	
5 – 10	
10 – 20	
20 – 40	
More than 40	

12. Percentage of students that you have supervised that have taken longer to complete their studies

Percentage (%)	
0 – 5	
5 – 10	
10 – 20	
20 – 40	
More than 40	

13. Reasons that students have identified as challenges to continue with their studies

No	Reasons	Scale				
		1	2	3	4	5
a	Work commitments					
b	Personal commitments					
c	Financial support					
d	Relationship with supervisor					
e	Staying away from the institution					

f	Ethics committee requirements					
g	University support structures					
d	Lack of time management					
i	Lack of Research experience					
j	Lack of self-confidence					
k	Availability of research resources					
l	Other factors					

Other.....

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14. What are your recommendations for improving throughput rates at University of Technology in Cape Town

.....

No	Factors	SCALE				
		1	2	3	4	5
		Strongly Agree	Agree	Uncolced	Disagree	Strongly Disagree
a	Increase academic staff with Doctoral qualifications					
b	Provide research support groups for postgraduates					
c	Make use of retired professionals for mentoring					
d	Implement exchange programs					
e	Encourage research prior to postgraduate level					
f	Other					

Other.....

END!!

APPENDIX D – LETTER OF AUTHORISING DATA COLLECTION



FACULTY OF BUSINESS & MANAGEMENT SCIENCES

Ms AF Buys

Department of Management & Project Management
Orlando Six Campus
P.O. Box 657 Cape Town 8000 - Corner of Keizerstraat and
Tonnant Street, Cape Town 8000 -
Tel: +27 21 460 3928 Website: <http://www.upat.ac.za>
E-mail: puy@upat.ac.za

13 May 2019

TO WHOM IT MAY CONCERN

STUDENT: THAKANE KHAUOE
STUDENT NUMBER: 202009245

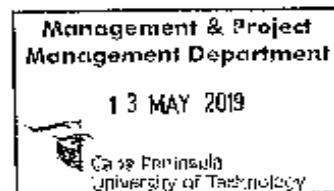
The Department of Management and Project Management grants Thakane Khaoue permission to carry out research in the mentioned department.

Her research title is: *Factors impacting postgraduate throughput rate at a South African University of Technology in Cape Town.* This research is towards the partial fulfilment of the MTECH: Business Administration in Project Management and will contribute positively towards the improvement within the mentioned department and the institution at large.

Yours sincerely

A handwritten signature in black ink, appearing to read "A Buys".

MS.A.BUYS
HEAD OF DEPARTMENT (ACTING)
DEPARTMENT OF MANAGEMENT & PROJECT MANAGEMENT
TEL: +27 21 460 3928



APPENDIX E – ETHICS CLEARANCE CERTIFICATE



P.O. Box 1906 • Bellville 7535 South Africa • Tel: +27 21 4603291 • Email: fbmsethics@cput.ac.za
Symphony Road Bellville 7535


Office of the Chairperson Research Ethics Committee	Faculty: BUSINESS AND MANAGEMENT SCIENCES
--	--

The Faculty's Research Ethics Committee (FREC) on 12 September 2019, ethics Approval was granted to **Thakane Khauoe (202009246)** for research activities of **MTech: Business Administration in Project Management** at Cape Peninsula University of Technology.

Title of dissertation/thesis/project:	FACTORS IMPACTING POSTGRADUATE THROUGHPUT RATE AT A SOUTH AFRICAN UNIVERSITY OF TECHNOLOGY Lead Researcher: Mr. S Fore
---------------------------------------	--

Comments:

Decision: Approved

	12 September 2019
Signed: Chairperson: Research Ethics Committee	Date

Clearance Certificate No | 2019FOBREC693

APPENDIX F – TURNITIN REPORT

Factors impacting postgraduate throughput rate at a South African University of Technology

ORIGINALITY REPORT

10%

SIMILARITY INDEX

9%

INTERNET SOURCES

2%

PUBLICATIONS

4%

STUDENT PAPERS

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APPENDIX G – DIGITAL RECEIPT



Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

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Assignment title: **SIMILARITY INDEX**
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File name: **Final_Submission_Updated_08-09-...**
File size: **1.91M**
Page count: **75**
Word count: **16,052**
Character count: **91,301**
Submission date: **08-Sep-2020 01:11PM (UTC+0200)**
Submission ID: **1381910428**

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APPENDIX H – LANGUAGE EDITING CERTIFICATE

NERESHNEE GOVENDER COMMUNICATIONS (PTY) LTD

REGISTRATION NUMBER: 2016/36822M/07

DR NERESHNEE GOVENDER (PhD)

WRITING PRACTITIONER • EDITOR • COPYWRITER • TRAINER

PhD-Management Sciences - Marketing (Media, gender and identity)

M-Tech Public Relations

B-Tech Public Relations (Cum laude)

B-Tech Journalism (Cum laude)

32 Kharwa Road

Kharwastan

Durban

4092

Cell: 084 702 25 33

e-mail: neresh@ngcommunications.co.za

14/09/2020

ATTENTION: Thakane Khaue

RE: EDITING CERTIFICATE

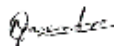
This serves to confirm editing of the following dissertation:

**Factors impacting postgraduate throughput rates at a South African University of
Technology**

Thesis is submitted in partial fulfilment of the requirement for the degree: Master of Technology Business
Administration in Project Management, Faculty: Business, Cape Peninsula University of Technology

The dissertation has been edited for clarity, language and layout.

Kind regards,



Nereshnee Govender (PhD)