

**AN EXPLORATORY STUDY ON UNAM'S OPPORTUNITIES OF BEING AN
ENTREPRENEURIAL UNIVERSITY**

A dissertation in partial fulfillment of the requirements for the Degree of

MASTER OF BUSINESS ADMINISTRATION

Rhodes Business School

RHODES UNIVERSITY

BY

VICTORIA SHIMI

G17S8822

APRIL 2020

ABSTRACT

Universities, especially those publicly funded by the government are at the edge of the economic woes when budget allocation is cut to support their operations. University should not only focus on research and the traditional role of teaching but, to become innovative by creating third stream income generation projects and activities. This would enable them to bridge the gap in financing from the state. The main goal of the study is to explore whether the university has opportunities to become entrepreneurial. The researcher analyzed the study from the perspective of internal capabilities the institution owns and how these capabilities can be applied to create a competitive advantage and external opportunities for the institution.

To achieve the objectives of this study, the researcher employed a case study research design approach. The study was embedded in the interpretivists paradigm and, following an inductive approach. The study had a population of 14 Centres at UNAM where a sample of 4 Centres was purposively selected to represent the population because they were responsible for research and entrepreneurship activities. Documents review and semi-structured interviews were used to collect secondary and primary data respectively, which helped in the triangulation to avoid data error. These methods also allowed the researcher to ensure credibility, transferability, trustworthiness and external validity. To adhere to all ethical regulations and procedures, the researcher obtained the ethics approval from the Rhodes Ethics Committee, which, was then used to obtain Gatekeeper permission from UNAM.

The study found that UNAM has the internal capabilities required that provides them an opportunity to become entrepreneurial. Through its Innovation and Development Department in collaboration with Inceptus, a UNAM commercial owned holding company. The study recommended that UNAM put structures in place, to begin with, all entrepreneurial projects towards securing third stream income as well as expanding research that focuses on leadership and governance.

Keywords: Entrepreneurial University, Internal Capabilities, Sustainability, Leadership, Entrepreneurial mindset

DECLARATION

I, Victoria Shiimi, confirm that the work of the Research Project titled “Exploratory study on one of the UNAM’s opportunities of being an Entrepreneurial University is my original work and that none of its parts in entirety or part of has been published before. Sections, where works of other authors and documents reviewed were used, have been recognized and referenced.

Signature

Date

Acknowledgments

First, I would like to thank the almighty God, for providing me the strength and great mind to undertake the MBA program. His mercy and abundant love were with me throughout my program to the end.

My greatest inspirations came from my husband for allowing me time to be away from home, giving me all the spaces I needed to concentrate and push with my schoolwork. I should also appreciate my three beautiful kids' support and positive contribution to behaving well during my studies.

In my vernacular, it says "Ino dhimbwa odhikwa koshilwa," I am therefore indebted to my mother for keeping me in her prayers all the time and encouraging me to keep working harder and complete the program.

I hereby wish to express gratitude to my supervisor, Dr. Tshidi Mohapelo for her support, direction and reinforcement throughout writing this thesis and ensuring that it is completed within the stipulated time.

Lastly, let me thank and appreciate the great support from the 2017 MBA students for working well together, their positive minds contributed greatly towards this thesis.

LIST OF ABBREVIATIONS

4IR	Fourth Industrial Revolution
AU	African Union
CEQUAM	Centre for Quality and Assurance Management
CHE	Council for Higher Education
CPR	Centre for Publication and Research
CUGB	China University of Geosciences Beijing
EUREKA	Exceptional, Unconventional Research Enabling Knowledge Acceleration
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GRN	Government of the Republic of Namibia
HE	Higher Education
HEI	Higher Education Institute
IUDs-GEM	International Union of Geological Sciences - Commission on Geoscience for Environmental Management
IUM	International University of Namibia
MESA	Monitoring for Environment and Security in Africa
MRC	Multidisciplinary Resource Centre
MTEF	Medium Term Expenditure Framework
NAMCOL	Namibia College of Open Learning
NBTC	National Business Technology Centre
NCHE	Namibia Council for Higher Education
NQA	Namibia Qualification Authority
NSA	Namibia Statistics Agency
NSFAF	Namibia Student Financial Assistance Fund
NUST	Namibia University of Science and Technology
NWU	North West University
OECD	Organisation for Economic Co-operation and Development
OECD	Organisations of European Cooperation and Development
PoN	Polytechnic of Namibia
PPP	Public-Private Partnership
QAMP	Quality Assurance Management Policy
RBT	Resources Based Theory

RIIS	Research Institute for Innovation and Sustainability
SADC	Southern Africa Development Community
SANUMARC	Sam Nuuyoma Marine and Coastal Research Centre
SCA	Sustainable Competitive Advantage
SDGs	Sustainable Development Goals
SMEs	Small and Medium Enterprises
TIKA	Turkey International Cooperation and Coordination Agency
TSA	Third Stream Activities
UCCB	University Central Consultancy Bureau
UCI	Universidad de la Ciencias Informatics
UEM	Eduardo Mondlane University
UNAM	University of Namibia
UNESCO	United Nations Educational Scientific and Cultural Organisation
VRIN	Valuable Rare Inimitable Non-Substitutable

TABLE OF CONTENTS

ABSTRACT	ii
DECLARATION	iii
Acknowledgments	iv
LIST OF ABBREVIATIONS	v
CHAPTER 1: INTRODUCTION AND PROJECT OVERVIEW	1
1.1 Background	1
1.1.1 The Evolution of Higher Education System in Namibia	3
1.1.2 Funding Model	4
1.2 Problem Statement	6
1.3 Goals of the study	7
1.4 Research questions	7
1.5 Demarcation /Research Setting	8
1.6 Chapter Outline	8
CHAPTER 2: LITERATURE REVIEW	10
2.1 Introduction	10
2.2 Conceptualizing Entrepreneurial University	10
2.2.2 The emerging of entrepreneurial universities	12
2.2.3 The theory underpinning the study	14
2.2.4 The relation between entrepreneurship and RBT	17
2.2.5 Theoretical frameworks	23
2.3 Conclusion	27
CHAPTER 3: METHODOLOGY	28
3.1 Introduction	28
3.2 Research design	28
3.3 Research Paradigm	29
3.4 Research Methods	29
3.5 Population	30
3.6 Sampling method and sample size	30
3.7 Data Collection Instruments	31
3.8 Data Collection Procedure	32
3.9 Data Analysis	32
3.10 Credibility, Transferability and Trustworthiness	33
3.11 Ethical Consideration	34
3.12 Conclusion	35

CHAPTER 4: PRESENT FINDINGS	36
4.1 Introduction.....	36
4.2 Findings from Documents Reviewed.....	36
4.2.1 Annual reports	36
4.3 Finding from Interviews	47
CHAPTER 6: CONCLUSION AND RECOMMENDATIONS	76
6.1 Introduction.....	76
6.2 Summary of the study	76
6.3 Key contributions.....	78
6.4 Limitations	78
6.5 Recommendations.....	79
5.7 Conclusion	80
REFERENCES	82
.....	94
.....	103

LIST OF FIGURES

Figure 1: Five Competitive Forces that Determine Industry Profitability.....	17
Figure 3: Entrepreneurial University - Key Strategic Challenges	23
Figure 4: Context in which a strategy is formulated.....	25
Figure 5: Resource-Based Approach to Strategy Analysis Model	26
Figure 7: Process Flow.....	40
Figure 9: Biographical Data (N=6).....	48
Figure 6: UNAM Commercialisation Process	73

LIST OF TABLES

Table 1: Findings under each of the priority areas	39
Table 2: Number of Staff Members Developed.....	43
Table 3: Revenue and Expenditure Statement for the four years	43

Table 4: Number of staff recruited in the university over the years	45
Table 5: UNAM's Mission Statement and Vision	47
Table 6: List of Internal Capabilities	49
Table 7: How internal capabilities can be effectively applied to create a sustainable competitive advantage	50
Table 8: How internal capabilities influence to exploit external opportunities	52
Table 9: SWOT Analysis for the university	53
Table 10: Themes emanating from document review.....	59
Table 11: Themes emanating from semi-structured interview	60

APPENDICES

Appendix 1: Rhodes Ethics Approval Letter	93
Appendix 2: UNAM Gatekeeper Permission Letter	94
Appendix 3: Institutional Participation Letter	95
Appendix 4: Institution Consent Form	97
Appendix 5: Individual Participation Letter	98
Appendix 6: Informed Consent Form	100
Appendix 7: Interview Schedule.....	102
Appendix 8: Formation of Categories, Sub-themes and Themes	104
Appendix 9: An extract of data presentation from document review	107
Appendix 10: An extract of response from the semi-structured interviews	110

CHAPTER 1: INTRODUCTION AND PROJECT OVERVIEW

1.1 Background

Before Independence, Namibia had an apartheid-led higher education system characterized by skin color distinction of being black or white. Due to that, major reforms needed to be made to ensure that every Namibian had equal access to higher education (Hangula et. al, 2017). Additionally, after independence, Namibia launched an investigation called the Presidential Commission on Higher Education into the state of education in the country to try and bring about necessary reforms. Higher Education in Namibia is therefore considered as the pillar in nation development and thus in 1992, an Act of Parliament established the University of Namibia (UNAM) on August 31, as recommended by a Commission on Higher Education (CHE) (www.unam.edu.na). This was done following the National Development Plans (NDP 1and2), Vision 2030, and indeed informed by its motto: "Education, Service, and Development". UNAM is the largest and leading institution of higher education in Namibia (www.unam.edu.na).

To ensure proper coordination of the higher education system in Namibia, Acts of Parliament established the Namibia Qualifications Authority (NQA) and the National Council for Higher Education, partly for this purpose (Matengu, Likando, and Kamungu, 2014).

Since its establishment, UNAM's (as stated in their vision) is the beacon of excellence and innovation in teaching, research and extension services. "UNAM's mission is to provide quality higher education through teaching, research, and advisory services to its customers (Tjiremba and Haufiku, 2017). That is with the view to produce productive and competitive human resources capable of driving public and private institutions towards a knowledge-based economy, economic growth and improved quality of life", Tjiremba and Haufiku (2017) concluded.

UNAM has eight faculties and two schools from which academic programs emanates: Faculty of Agriculture and Natural Resources; Faculty of Economics and Management Science; Faculty of Education, Faculty of Humanities and Social Sciences; Faculty of Law; Faculty of Health Sciences, consisting of the School of Nursing and Public Health and the School of Medicine; and the Faculty of Science (www.unam.edu.na). The University's programs are

intended to meet national human capital requirements through quality teaching, inquiry, consultancy and public service.

However, demand for tertiary education in the country grew and UNAM's main campus could not accommodate all students who met their requirements. The latter made UNAM open 12 more campuses and 9 regional centers countrywide. UNAM has students from 43 countries and all continents. However, although the university is very young, it now supports a student population of 24,759 admitted for the 2017 academic year (Tjiremba and Haufiku, 2017). The Government of the Republic of Namibia funds the university through its budgetary allocations.

My interest to do this study was also necessitated by the fact that the Government of the Republic of Namibia decided to cut the national budget allocated to the university for the year's 2016 and 2017, (Government Budget Statement, 2017), which indicated a reduced government revenue and financial crisis the country is facing. The budget allocated changed from N\$3.41 billion in the 2016/2017 budget year as compared to N\$4.03 billion in the 2015/2016 budget year leading to an N\$620 million difference which is an 18% decrease in funding (Budget statement, 2016). The budget cuts towards university funding led to university increasing their tuition fees to make up for the gaps created which would compromise the whole notion of accessibility (Kaure, 2015). Outgoing UNAM Vice-Chancellor, Lazarus Hangula in his interview with the Windhoek Observer, indicated that the university has missed needed foreign partnership as crucial specialized programs have had to be put on hold due to budgetary constraints. This he explained included several funding contracts due to delays in starting new programs (Nhongo, 2017).

That has, however, created challenges for students as they could no longer meet their university obligations as most of them are from a previously disadvantaged group. Students approved for funding by Namibia Students Financial Assistance Fund (NSFAF) then resorted to holding demonstrations about the NSFAF loan disbursement and payment commitments to universities (Ngutjinazo, 2019). The NSFAF according to the report in the Namibian Newspaper (2019) indicated that of the 15 087 students who have met the minimum requirements for funding, only 2 925 which is less than 20% will receive funding that academic year. Moreover, a student's representative for UNAM has cautioned fellow students to look for alternative funding options and not rely on funds from the treasury (Ngutjinazo, 2019).

1.1.1 The Evolution of Higher Education System in Namibia

Higher education existed in Namibia during the apartheid system, however, before 1979, only students who were able to go further their studies to South Africa or other countries abroad accessed higher education in Namibia. Not long, enough, in 1980, the South African government established the Academy for Tertiary Education to offer classes in teacher training and secretarial courses. Furthermore, in 1985 another academy, consisting of a university component (the present University of Namibia), a Technikon, and a College for Out of School Training (COST), was established. When Namibia gained her independence on 21 March 1990, first Namibia's president, Sam Nujoma, established a special commission on higher education where local and international scholars analyzed and made recommendations concerning Namibia's higher educational needs (Namibia-Higher Education, 2004).

The General Conference of the United Nations Educational, Scientific and Cultural Organization (UNESCO) at its 27th session in Paris defined higher education as “all types of studies, training or training for research at the post-secondary level, provided by universities or other educational establishments, that are accepted as institutions of higher education by the proficient State authorities” (UNESCO, 1996, p.566). UNESCO further defined higher education system as a set of highly cutting-edge, interconnected modules or units involved in the challenge of joint-problem solving to accomplish a common goal in their the pursuit of scientific, intellectual and moral rigor. These components may be administrative, educational or a combination of both.

The three components of the Academy for Tertiary Education were later dissolved. These were transformed into two independent higher education institutions, a university, and a polytechnic. In 1992, the University Of Namibia (UNAM) was established in Windhoek, whilst in 1994 the Technikon Namibia and COST merged to become the Polytechnic of Namibia (Namibia-Higher Education, 2004).

The Government of the Republic of Namibia through the National Council of Higher Education (NCHE) established a coordination system for higher education (Matengu, Likando, and Kamungu, 2014). The latter elevated the importance of a coherent approach in higher education, intending to locate higher education institutions to address two challenges by the year 2030. The first one is that of transforming Namibia into a knowledge-based economy and secondary is that of reaching a quality of life equal to the standard of living in developed

countries (GRN, 2004). Namibia has the youngest and relatively new higher education (HE) that was realized since 1980. It consists of two public and a private higher learning institutions, namely: University of Namibia (UNAM), a polytechnic (the Polytechnic of Namibia (PoN), which transformed into a University of Science and Technology (NUST) in October 2015(Act No. 7 of 2015) and International University of Management (IUM), (NCHE, 2014).

There are however several institutions referred to as post-secondary entities, which according to the Higher Education Act No. 26 of 2003, does not constitute spontaneous qualification as higher education, but mean qualification as tertiary education. According to this distinction, as of 23 November 2012, 35 institutions (except IUM) that are accredited by the Namibia Qualifications Authority (NQA) to offer post-secondary education are not part of higher education. In Namibia, the higher education category excludes vocational schools from being considered higher education institutions (HEI), they are however part of the tertiary education system (Matengu, Likando, and Kamungu, 2014). Currently, Namibian HEIs offer education at the levels of a certificate, diploma, undergraduate degree, graduate and some postgraduate levels, each type, following different levels of capacity in skill and knowledge inculcation for their graduates (Angula & Lewis, 1997). According to Kogan and Marton (2000), the growing demand for higher education worldwide has led to an increase in the number of public institutions offering higher education. This increase, accompanied by mounting costs, different and new clientele, and the call for quality makes the central direction of higher education difficult and consequently, resulting in calls for greater coordination. Traditionally, the role of the state is to ensure that higher education programs support regional, national and international socio-economic needs of the country in which it operates have been considered as part of rights and obligations between the state and its citizens. The expectation that the state should coordinate a higher education system is not only a consequence of the increased need to legitimize state spending (Kogan and Marton, 2000) but also to promote participation, cost-effectiveness, accountability and transparency (Salmi, 2008).

1.1.2 Funding Model

A study by Marope (2005) regarding the funding of higher education in SADC, revealed that Namibia reported high inefficiencies in the utilization of available funds as well as inequitable distribution of funds among institutions. According to Mutenga (2010), there were noticeable and significant differences in the ways UNAM and the PoN were resourced. The situation led

to Cabinet in November 2013, approving the implementation of the Funding Framework for allocating the operational budget to public Higher Education Institutions (HEIs). The Funding Framework is a Government tool for estimating resource allocation to the public HEIs, on a transparent basis (NCHE, 2014). The funding framework according to the (NCHE, 2014) was mainly developed to:

- be a significant planning instrument for the whole higher education system,
- to completely allow likelihood, fairness, and competence in the higher education funding process, to question institutional budget submissions to regular assessment, and
- to monitor the application of resources by public institutions.

According to the Minister of Higher Education Dr. Itah Kandjii-Murangi during the implementation phase of the funding framework, “public institutions were happy with the funding formula despite the economic crises the country faces (New Era, 2016)”. Tyobeka and Kgabi (2016) added that the execution of the funding recipe by the NCHE would dispel all the concerns of institutions on issues of transparency, fairness, impartiality, and predictability in budgeting and funding. One of the challenges that the funding model might be faced with, is the Higher Education Management Information System (HEMIS) (Kahiurika, 2015) as institutions are using manual. There is still however no concrete indication of whether the objectives of the funding framework have been so far achieved, nor is it working well for UNAM since the implementation could not be realized in the 2014/2015 financial year as initially planned. Thus, this has been pushed to 2016/2017. The delay was due to the slow pace in data gathering from HEI’s needed for the subsidy calculation (Kahiurika, 2015).

The funding model/framework developed for Namibia’s higher education constitute three main components:

- A Funding Formula, a mechanism applied to determine operational funds and, when required, performance and competitive funds.
- An Investment Model, which addresses the need for extra facilities, given what is and what enrolment in relevant programs is expected, and
- A Tuition Fees Model, which addresses the primary issues surrounding tuition fees, This model also considers the student’s year of study, and his/her residential status. Additionally, it takes into account how such costs should be increased as other related

costs increase; and the kinds of support that should be extended to students and/or their caregivers to meet such costs (NCHE, 2014).

According to NCHE, (2014) the framework's main purpose is to ensure transparency, fair and equitable allocation of funds in an institution. It is not a done deal that institutions will receive the same funding as the funding received is compared to the Medium Term Expenditure Framework estimates.”

Notwithstanding the above, the degree of the subsidy to a public Higher Education Institution is influenced by the amount of money the institution derives from the tuition fees. In contrast, the Government introduced a Public Higher Education Institutions Tuition Fees Adjustment Policy in the 2016/17 financial year to ensure a fair share of the burden of covering operational (instructional) costs between the Government, or the taxpayer, on the one hand, and the parents and/or students on the other (Kahiurika, 2015). For oversight purposes, NCHE has established a Committee following Article 14(1) of the Higher Education Act (Act 26 of 23) to, among others, advice on the budget allocation, using the Funding Formula. However, the framework does not mean universities should relax and wait for funds disbursement only, but to rather be innovative and explore alternative funding strategies and means to meet their daily needs.

Additionally, the number of courses – and the number of associated credit units – for which the student is registered, measure the workload for each student. A specific amount of funding for each credit unit is awarded to the University for which the unit cost of each credit should be estimated (NCHE, 2014).

1.2 Problem Statement

According to Tekin et al. (2017), globalization causes socio-economic, socio-political and socio-cultural changes that have endlessly impact on universities. Universities experience challenges of not being able to operate efficiently and create a competitive advantage in the industry. This led to universities implementing radical changes in their functions, responsibility areas, structures, and processes, including their abilities for creating funds. Altbach et al., (2009) explained that the dependence of universities on public funding is reduced by deregulation, privatization, and liberalization, which are the results of the “Globalization” process.

Universities are therefore necessitated to have more entrepreneurial and competitive structures concerning the market that will enable them to generate funds for their operations. As the country and the economy are faced with financial hardships, higher education institutions are no longer allocated adequate funds from the national budget. That has resulted in institutions not being able to operate efficiently and create a competitive advantage in the industry. Higher Education Institutions are allocated funding through a funding model that uses a formula to measure the workload for each student founded on the number of courses and the number of associated credit units for which a student is registered (NCHE,2014). A specific amount of funding for each credit is then awarded to the institution based on an estimated unit cost of each credit.

Due to UNAM's national budget cut, the allocation is no longer sufficient for the institution. The institution also charged students tuition fees, but most students could not afford it as the fees are adjusted yearly. Although there is a Namibia Student Financial Assistance Fund (NSFAF) that provides study loans, it could also not meet its obligations. That is because previous beneficiaries have not honored their repayment commitments, leaving the fund in financial challenges. The study, therefore, seeks to explore if this higher education institution has the potential of becoming an entrepreneurial university through the development of multiple financial income streams.

1.3 Goals of the study

The main goal of this research is to explore the university's opportunities to become entrepreneurial through the following objectives:

- Determine the internal capabilities and opportunities for UNAM.
- Assessing how internal capabilities are applied to gain a sustainable competitive advantage that creates opportunities for UNAM.
- Recommending how UNAM can exploit entrepreneurial opportunities.

1.4 Research questions

The above objectives were achieved through the following research questions:

- What internal capabilities does the institution has which could enable the process of it becoming an entrepreneurial university?

Chapter 4 presents all data collected from document review and semi-structured interviews. Chapter 5 provides a summary of findings from the data analyzed. Recommendations that arise from the study and for further research are presented in this chapter.

1.7 Conclusion

The chapter in its background provided a background of the study including the problem being experienced and reasons justifying the decision as to why the study was undertaken. A brief overview of how higher education evolved in Namibia taking cognisance of how it is funded was also provided. The chapter further outlined a problem statement and how it came about. Besides, the study's purpose and objectives were stated, the overview of the methodology and the locality of where the study was undertaken. The next chapter provides the literature of previous studies on entrepreneurial university and

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

According to the Lambert review (Lambert, 2003), most governments propose assessments of the parts that universities are playing in the wider economy. The review focuses on third stream activities of universities general but also growing interested in the concept of the entrepreneurial university (Etzkowitz, 2003). This chapter then provides literature surrounding the major concepts of this dissertation namely; entrepreneurial university, internal capabilities, and competitive advantage. Literature about the resource-based theory into which the study is embedded is also reviewed. Also, various theoretical frameworks that are in support of entrepreneurial universities are compared to strengthen the theoretical perspective of the research.

2.2 Conceptualizing Entrepreneurial University

2.2.1 Entrepreneurial University

It is a vision of every government to have an educated nation as per the sustainable development goals (SDGs) “quality education”, one which can effectively contribute to economic development and respond to dynamic globalization effect (UNDP, 2018). Besides, it is children’s human right to be educated up to a level they so desire. Etzkowitz and Zhou (2008) support the above saying that universities are considered a crucial phenomenon in economic development in the form of knowledge creation. However, for economic development to be achieved Moed (2006) reports that universities have become foreseeable to fundamental changes and reforms in mission, structure, process, and culture. Ravinder, (2010) concludes that the role of higher education is not only limited to fostering the economic development of nations and providing opportunities for individuals but that it should extend to the promotion of cultural diversity, political democracy, and trade. Additionally, higher education institutions (HEIs) have increasingly been encouraged to take a larger role in economic development particularly through innovation (Benneworth, 2007).

The term ‘entrepreneurial university’ is not new, having been introduced by Burton Clarke (Williams and Kitaev, 2005; Jamenson and O’Donnell, 2015) to define a particular mind-

set to be found within the attributes of such an institution. In particular, the philosophy, growth, knowledge society, globalization, and financial severity were found and classified as main drivers of entrepreneurialism among higher education institutions in the countries covered by the Exceptional, Unconventional Research Enabling Knowledge Acceleration (EUREKA) study (Williams and Kitaev, 2005). Nevertheless, Jamenson and O'Donnell, (2015) explained that a shared theme of entrepreneurial organizations is the creation of value through improvement, in which value can be identified as economic, societal, cultural, and/or technological.

According to the OECD Guiding Framework for Entrepreneurial Universities, (2012: 2) entrepreneurship is a concept for which more than one hundred definitions are currently in use. The definitions purposefully sought to expand the concept away from its genesis as solely a business/management idea towards a concept applicable to any organization and any area of endeavor. Additionally, the framework continues that there is no single definition of the Entrepreneurial University, but relatively there are helpful approaches, resourceful, innovative and yet realistic, which distinguish the entrepreneurial style. Researchers such as Clark (2001) defines "entrepreneurial university as the university, which can survive and adjust in highly complex and undefined conditions of the environment in which it operates." However, according to Etzkowitz et al., (2000) many scientists believe universities should remain in their fundamental roles of producing students and publishing research as an entrepreneurial paradigm will be a threat to the traditional integrity of the university. Peterka, 2008 also added that an extreme focus on income leads to the loss of a university's role as an independent critic of society. The question arising is whether universities will have adequate resources to keep the tradition of producing students and publishing research only and which is also what this study is intended to determine.

Additional definitions were those of Etzkowitz and Leydesdorff (1999) as universities which have been often encouraged by the policies of the government and of which the faculties' growing interest in harvesting funds from the capitalization of knowledge made themselves closer to firms. Clark (1998) describes it as "to actively explore and innovate on how to do a good cause on its own". "Entrepreneurial universities are also defined as an institution that creates an environment, within which the development of entrepreneurial mindsets and behaviors are embedded, encouraged, supported, incentivized and rewarded" (Hannon, 2013: 12). Even though the entrepreneurial

university concept is gaining thrust worldwide, there is still no clear and acceptable definition. There is however a useful working definition by Gibb (2013):

“Entrepreneurial higher education institutions are designed to empower staff and students to demonstrate enterprise, innovation and creativity in research, teaching, and pursuit and use of knowledge across boundaries. They contribute effectively to the enhancement of learning in a societal environment characterized by high levels of uncertainty and complexity and they are dedicated to creating public value via a process of open engagement, mutual learning, discovery and exchange with all stakeholders in society – local, national and international.”

This definition above is useful working because it greatly emphasizes how people are empowered in their use of innovation, creativity, and enterprise when responding to learning and social engagement. That means the entrepreneurial university is dependent on individual and innovation.

2.2.2 The emerging of entrepreneurial universities

The world has become highly competitive for which, van Ginkel (2002) recommends that universities must fight for students, research and financing, dedicate more interest in the improvement of relations with external stakeholders. However, that can only be possible if they completely change their previous methods of management, financing, internal structure and external relations, and methods of performing activities (van Ginkel 2002). Over recent years, the paradigm of the entrepreneurial university has started to emerge, leading to universities changing their strategies, structures, and own individual culture.

According to Trequattrini et al., (2012), universities compete with each other to attract funds and students; consequently, they have to change their structures, curricula and job opportunities to be able to address the market demand. Universities have to consider a third mission which, Trequattrini et al., (2012) defined as that of supporting the innovation process, economic regional growth and the construction of strong relationships between other actors within the regional system, such as governments and companies. “Universities are becoming entrepreneurial to address the needs of its environment, and contribute to regional and national economic development (Gibb, 2012), but also to improve its financial situation and the position of its employees”. Etzkowitz et al., (2000) contributed to the debate that institutions were unable to recruit qualified personnel due to inadequate state funding allocated to them.

Therefore, to bridge that gap, Yokohama (2006) added that entrepreneurial behaviors within an institution are only induced and advance once there is limited financial support from the state. This shows that African universities, in particular, may not be an exception to the financial stringency being experienced elsewhere in the world.

Liu (2012, p. 48) added that the market demands, which universities need to cope with increase day-by-day, compared to the funding share from the state's allocation. The above became evidence that universities need to start doing “useful things” by getting sufficient resources to support their development. Trequattrini, Lombard, Lardo, and Benedetta (2012) added that due to high universities' competition on students and funding, universities had to consequently change their structures, curricula and job opportunities. This new way of thinking and acting by universities has not only opened their doors to society but also diversified their sources of income, making them more independent from governments (De Zilwa, 2005). Odabaşı, (2006) also gave an assurance that universities have been changing in the direction of providing an increase in regional, social and economic welfare through interacting with the industry, which is done without obstructing their traditional function of education and research.

Williams and Kitaev (2005) highlighted four key drivers of the entrepreneurial university concept in Europe. The first driver is the ideological shift that has some implications on university entrepreneurship in a knowledge society, particularly during the convergence of European higher education (i.e. Bologna–Bergen–Lisbon strategies). Secondly, expansion may be accompanied by diversification wherein universities operate as commercial entities targeting to maintain and intensify their position in the market. The third driver explains that knowledge has economic value and there is a growing interest from governments to exploit opportunities and focus on how universities could play an important role in economic development. Fourth, globalization has been identified as another driver of entrepreneurialism due to the ambition of most countries to have competitive universities and meet the standards of leading universities in Western Europe. Among the four drivers, financial stringency has greatly affected most European universities because of budget cuts.

A very good example of an entrepreneurial university is that of Stanford University in Europe (Blenker et al. 2006). Blenker et al. (2006) state that all happened after World War II when Stanford University found itself in a difficult financial situation. The then rector

Frederick Terman started collaborating at a higher level with the business community. However, Blenker et al. (2006) continued that there was not much to be realized, as the business community was willing to pay only as much as it could get back, which meant that there was no money for fundamental research and similar activities. What was interesting, Huffman and Quigley (2002) stated was that Stanford University's success came because facilities and equipment such as industrial park on university-owned land to facilitate business co-location and enhance knowledge sharing and diffusion which firms could access were established and that knowledge is transferred across the industry (Gibb et al., 2013).

2.2.3 The theory underpinning the study

The study is impacted by the resource-based theory (RBT). RBT focuses on making a distinction between resources, capabilities, and competencies (Grant, 1991). There are however many other theoretical frameworks developed to analyze entrepreneurial universities globally (Guerrero & Urbano, 2012). Apart from that, several theoretical perspectives specifically on capabilities such as technological capabilities (Lall, 1992), absorptive capacity (Cohen and Levinthal, 1990), and dynamic capabilities (Teece et al., 1997; Eisenhardt and Martin, 2000) have been developed. Notwithstanding the above, the resource-based view has of late emerged as another approach to understanding industrial organizations and their competitive strategies.

According to this view, a firm is comparable to a broad set of resources that it owns (Das and Teng, 2000). Resource-based theory (RBT) has become an acceptable theory to describe the importance of resources and capabilities in generating high performance. Previous studies suggest a positive direct association between resources and/or capabilities and performance (Rashidirad, Soltani and Salimian, 2015, p.509). The resource-based theory (RBT) of competitive advantage argues that a firm's internal resources can be a source of sustained competitive advantage (SCA) for the firm, especially the firm's human resources (Wernerfelt, 1984).

According to Davis (2017 p.4), RBT is an "inside-out" approach to competitive strategy formulation as it first assesses internal capabilities and then sees how best to apply those to the challenges and opportunities outside. Foss (2008) tries to demonstrate the linkage of RBT to entrepreneurship, questioning whether entrepreneurially driven resource abundance is sufficient to garner competitive advantage. However, competitive dynamics research examines

the moves and countermoves that rivals make to gain resources (KetchenHulte and Slater, 2007).

Sirmon et al. (2010) contribute to the RBT literature by focusing on what they term resource orchestration, which explicitly addresses the role of managers' actions in effectively structuring, bundling, and leveraging firm resources. Also, the RBV holds that sustained competitive advantage rests on organization resources that are valuable, rare, inimitable and non-substitutable (VRIN) in an organizational setting that has the policies and procedures to exploit the resources (Barney & Clark, 2007).

Particularly, Barney and Clark (2007) explain that human capital theory is an aspect of the resource-based view that focuses attention on the knowledge and skills which individuals, both entrepreneurs, and employees contribute to competitive advantage. To strengthen the above sentence, Alvarez and Basinets (2001) argue that entrepreneurial opportunities emerge when certain individuals have insights into the value of these resources that others do not. These resources and capabilities can be viewed as a unique combination of tangible and intangible assets that allow a firm to gain a competitive advantage in the market place. Alvarez and Barney (2007) suggest that if an entrepreneur has all the resources needed to take advantage of an opportunity, then there is little need for organizing, just coordinating and executing.

Das (2000) proposes that firms use the suggestion made by a traditional research strategy of trying to find a balance (strategic fit) between internal characteristics (strengths and weaknesses) and external environment (opportunities and threats).

Early work on resource-based theory (RBT) acknowledges that entrepreneurship is an intricate part of the resource-based framework (Alvarez and Busenitz, 2001). They continued explaining that the boundaries of RBT need to be extended through entrepreneurial recognition and the process of combining and organizing resources as a resource. Linking RBT to entrepreneurial universities, make universities to be seen as often encouraged by the policies of the government and of which the faculties' growing interest in harvesting funds from the capitalization of knowledge made themselves closer to firms (Etzkowitz, 2003). Universities are institutions that are increasingly involved with external partners through business activities (Zhang, Li, and Meng, 2016).

According to Peteraf and Barney (2003) indicates that the RBT also refers to the RBV which is characterized by tracing the possibility to create and appropriate more value than the competition to the resource endowments of firms, and the character of these resources. Barney (1991: 102) explain that

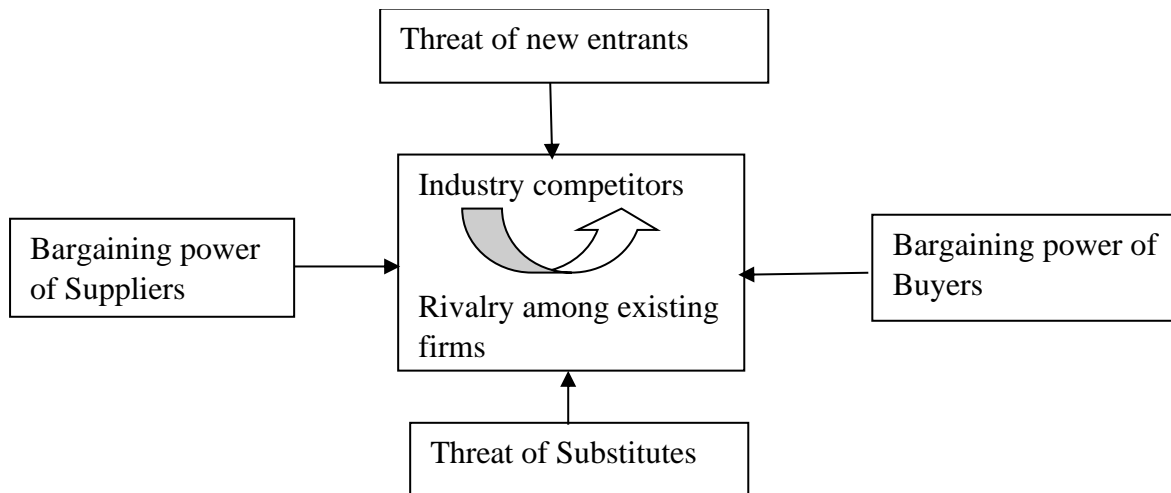
“A firm is said to have a competitive advantage when it is implementing a value-creating strategy not simultaneously being implemented by any current or potential competitors. A firm is said to have a sustained competitive advantage when it is implementing a value-creating strategy not simultaneously being implemented by any current or potential competitors and when these other firms are unable to duplicate the benefits of this strategy”.

One area that remains under-explored in the literature is the resource-based view of strategic alliances, even though such alliances are rapidly increasing in importance in today’s competitive landscape (Das and Teng, 2000). Additionally, despite its broad theoretical appeal and strong influence on managerial education and practice, the empirical track record of the key tenets of the RBV has so far been somewhat modest (Priem & Butler 2001a, b). Madsen and Hoopes (2008) support the latter arguing that the RBV lacks a cumulative body of work showing how firms differ in their resource bases.

In survey articles on the empirical support for the RBV, Armstrong, and Shimizu (2007) and Newbert (2007) found only modest support for the key tenets of the RBV that connect resource characteristics to sustained profitability. However, (Das and Teng, 2000) further explains that existing studies of alliances from a resource-based perspective have been, at best, limited in scope and divergent in their approaches. They then proposed a theory that attempts to synthesize the various fragmented findings in the literature, which has been criticized for paying exclusive attention to cost minimization and neglecting value-creation in strategic alliances.

Foss & Knudsen (2003) adds that “value” in terms of being able to take advantage of an opportunity or counteract a threat in the environment (i.e., the SWOT framework), and hints that “environmental analysis” (e.g., Porter’s 5-forces framework) may help understand the measure of value. Porter (1985) develops a competitive strategy comprised of five forces aimed at changing the rules of competition in the firm’s favor.

Figure 1: Five Competitive Forces that Determine Industry Profitability



Porter (1985)

The figure above illustrates the competitive forces that determine whether an institution will be sustainable or not. Despite the internal capabilities of an institution, some of the forces indicated are external factors, which too cannot be ignored. In the case of this study, Porter (1985) indicates that the institution should be cognisant of the five competitive forces in developing a competitive strategy considering that it is not the only one in the industry. The study is exploring if an institution has opportunities for being entrepreneurial, which will enable it to expand its revenue streams and gain a competitive advantage. Therefore, in its pursuit of that, consideration on how to craft a strategy encompassing all the factors as outlined in the diagram.

2.2.4 The relation between entrepreneurship and RBT

Entrepreneurial universities are important in ensuring the continuous flow of resources to maintain operations and develop institutional activities. Taking the entrepreneurial path becomes a viable alternative, particularly when governments start to revisit their priorities and introduce plans to make universities more self-sufficient (Reyes, 2016).

Spring (1991) explains that there is a difference between resources and capabilities. Resources are inputs into the production process, meaning they are the basic units of analysis. In this case, individual resources of the firm comprise items such as capital equipment, skills of individual employees, patents, brand names, finance, and so on. However, a capability

(the main source of competitive advantage) is the capacity for a team of resources to perform some task or activity.

However, Alvarez and Busenitz (2001) explained that entrepreneurship and RBT adopt precisely the same unit of analysis that of the resource, which is heterogeneous. They further expanded that entrepreneurial opportunities exist when different agents have insight into the value of resources that other agents do not and the agents with the insight act upon these unexploited opportunities. Guenther and Wagner (2008) elaborated that universities can also establish associations with industry sectors by setting up university spin-offs, generating research contracts, providing consultancy services to generate additional revenues to aid their day-to-day operations. The transformation according to Doutriaux (1991) and Birley (2002) should consider the university culture (such as values, norms, attitudes, principles, etc.) as being central to the development of entrepreneurial activity within the universities

One then wonders about how universities who have already successfully implemented their transformation to entrepreneurial university did it. This is when Alvarez and Busenitz (2001) came in with the governance issue, emphasizing that hierarchical governance is suitable to realize the economic value associated with an entrepreneurial opportunity. They continued that the economic value depended on the use of socially complex, path-dependent or tacit resources and capabilities. However, an understanding of how entrepreneurial actions, the creation and combining of resources that create new heterogeneous resources is required. The latter enables RBT to be informed by suggesting alternative uses of resources that have not been previously discovered leading to heterogeneous firm resources (Alvarez and Busenitz, 2001).

A firm's success and survival depend on recognizing the importance of innovation which, is achieved when a firm develops its technological capabilities (Lall, 1992, Bell and Pavitt, 1995). However, Zawislak et al. (2013) adds that innovation should not be left out and that it can be recognized as implanted in different capabilities such as the ability to understand, adjust and alter a given technology into specific managerial, operational and transactional routines that can lead a firm to achieve maximized profits. Furthermore, the innovation being contemplated by an institution should be in the long term ability to create sustainable competitive advantage (SCA). Shrivastava (1995) explains that although the pay-offs from sustainable innovation may not immediately translate into monetary benefits but are often intangible and related to long-term objectives (e.g. reputation building), it must be a well thought of plan from the onset. Additions to the debate from Amit and Schoemaker (1993); Grant (1996) and Sirmon et al.,

(2007) indicate that the capability-based view of the firm complements traditional industry analysis in that internal and external factors have to be considered to understand the sources of competitive advantage.

Resources and capabilities of universities should not be overlooked on their journey to becoming entrepreneurial. Hanny et al. (2011) identify seven key strategies for universities that are becoming entrepreneurial to be: having a flexible structure, having an entrepreneurial culture, continuous interaction with their environment, creating a shared vision, providential strategy, paying attention to human resources (staff), and management support. Helfat and Peteraf (2003: 997) notes, 'it is difficult to fully explain how firms use resources and capabilities to create a competitive advantage.' Furthermore, several studies argue that capabilities cannot be investigated without considering their context (Atuahene-Gima and Haiyang, 2004) the 'when, where and how' knowledge resources and capabilities translate into a competitive advantage (Priem and Butler, 2001).

Additionally, the boundaries of RBT were extended by introducing two entrepreneurial concepts: 1) *entrepreneurial recognition*, which is defined as the recognition of opportunities and opportunity-seeking behavior as a resource and 2) *the process of combining and organizing resources as a resource* (Alvarez and Busenit, 2001). Entrepreneurial universities should focus on resources as a unit of the analysis organized around for conditions of RBT, which are: resource heterogeneity, ex-post limits to competition, imperfect factor mobility and ex-ante, limits to competition to generate long-term advantage until they are imitated (Peteraf, 1993).

According to Grant (1991), the basic direction for a firm's strategy and considered resources and capabilities provide a primary source of profit for the firm. Grant continues to explain that a firm's ability to become profitable more than its cost of capital depends on the attractiveness of the industry in which it is located and its establishment on a competitive advantage over its rivalries.

Studies conducted in Asia covering Chinese universities have established that internal factors such as research, technology transfer and entrepreneurial capabilities are important during the transition to the entrepreneurial university model (Zhou and Peng's, 2008). In his study, Hu (2009) discusses that the entrepreneurial culture at Taiwanese universities affects the number of academic collaborations, granted patents, technology licensing revenues and incubators. Interestingly enough, the Taiwanese government's policy framework has paved the way for municipalities to support high-tech entrepreneurship and

encourage firms to financially support public universities to nurture university-industry partnerships. The above was supported by Tether (2002) stating that demands for funding have encouraged academics into greater partnership with industry, which provides better resources than the business has on its own.

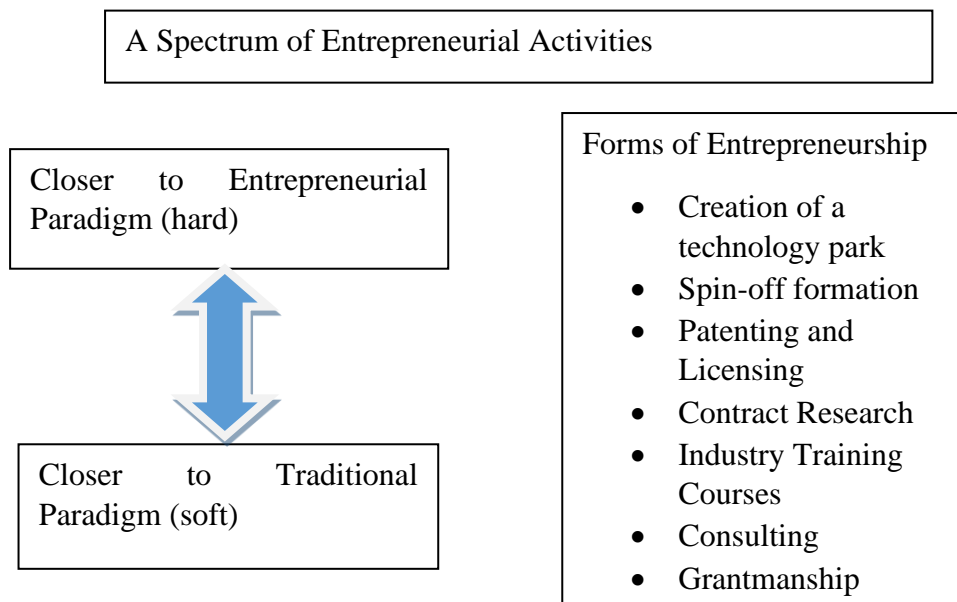
Etzkowitz (2013) suggests that there are three major stages that universities go through in terms of being classified as entrepreneurial. Stage one involves a university setting objectives to consider themselves as more independent entities than bureaucratic organizations relying on the government for help. This initial stage means that the university changes its strategic view to consider alternative funding sources and business activities. In stage two, universities are expected to utilize their intellectual property for commercial reasons. Stage three involves the university linking into their community more to bridge the gap between academia and practice, which helps to build a sense of rapport between the university and the broader community. Universities that act entrepreneurially can transform the businesses and lives of people in the community. To support and amplify the above, Professor Deresh Ramjugernath, pro-vice-chancellor of the University of KwaZulu-Natal in South Africa, made a keynote address at the African Technology Network's Eighth Annual International Conference 2015 on "Entrepreneurship Education for Economic Renewal". Professor Deresh Ramjugernath outlined that, - good leadership and governance, capacity incentives, entrepreneurship in teaching and learning, a culture of entrepreneurship, stakeholder partnerships, and internationalization are six key elements of entrepreneurial universities that must be taken into consideration when planning to transform. The paragraph below was highly emphasized in his keynote address to caution heads of institutions and those at the forefront of transformation:

"There should be appropriate funding and resources for entrepreneurship, said Ramjugernath, but managers should not – as is often the case – believe that innovation and entrepreneurship will solve university problems by generating third stream income" (MacGregor, 2015)".

Blenker et al. (2006) conclude that the shift towards entrepreneurial university does not necessarily mean university becomes less focused on research, but that research and educational activities are seen as investment from which the university expects to generate profit, primarily through projects with the business community.

The third stream activities (TSA) that Etzkowitz (2003) refers to include contract research, consultancy contracts and facilities, patenting and licensing, spin-offs, and start-ups. However, Philpott et al. (2011) explain that the activities within the entrepreneurial university can vary from a wide spectrum of “soft” to “hard” initiatives, as shown in Figure 2 below. He further explains that soft initiatives are those such as producing graduates, consulting and industry training, while hard initiatives are those such as creating of technology parks, patenting and licensing. Figure 2 clearly illustrates that hard initiatives are those closer to the entrepreneurial paradigm while soft initiatives are those closer to the traditional paradigm as the core of the university.

Figure 2: Entrepreneurial university spectrum of activities.



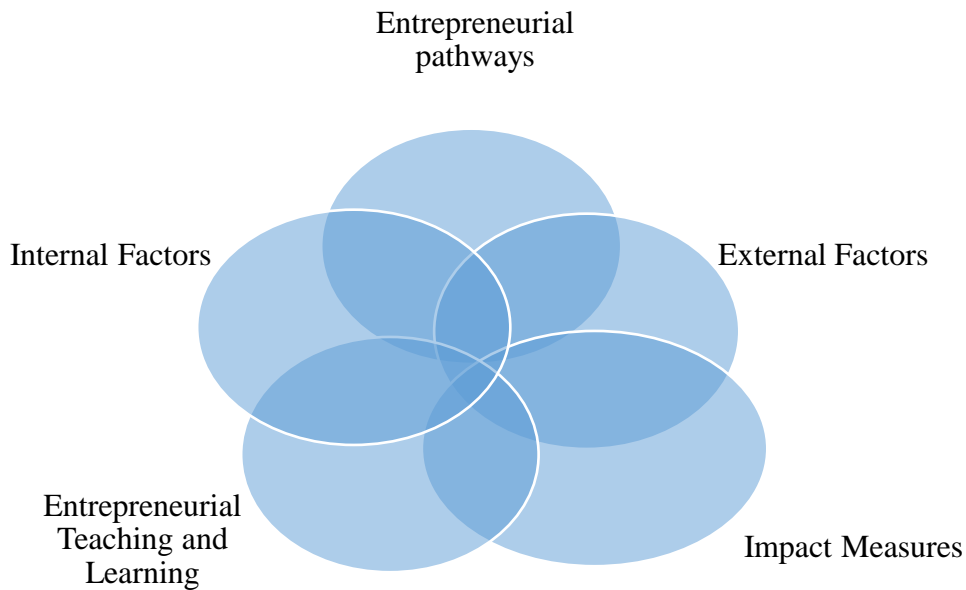
Philpott et al. (2011)

Phan & Siegel, (2006) and Rothaermel et al., (2007) adds that the positive outcomes of those entrepreneurial activities are not only improving regional or national economic performance but also a source of financial advantage and advance to the enterprising universities, making them less dependent on government funding for their operations. Powell (2012) also suggest that universities need to start engaging with SMEs to help drive innovation and create sustainable growth. Universities can also establish facilities and equipment for businesses, which they can provide for a fee, in turn, receiving payment, and in the end encouraging entrepreneurial behavior with the facilities whilst also generating an income (Mian, 1996).

Regardless of all the good concepts and themes of the entrepreneurial university, some challenges are unavoidable. Jamenson and O'Donnell, (2015) indicate that the trial is to reconceptualize the HEI as an academic enterprise, one that is responsive, viable, adaptable and reactive to the changing needs of our stakeholders and society alike. They further explained that the adoption of an academic entrepreneurial mind-set might be useful as an organizing principle, both organisationally and conceptually. However, instilling the spirit and application of enterprise into the institutional culture of a public HEI is a major challenge, not least of which is surviving with legacy administrative and management systems. Another significant issue to consider is that there is no single model of transformation that universities are expected to apply, but it will purely depend on the university itself, its resources and the environment in which it operates (Clark, 2004). Birley (2002), however, also stressed that there are many possible university management and governance-related barriers such as unclear structure, increased complexity and inefficient allocation of resources contradicting how this new entrepreneurially focused university paradigm will work.

Furthermore, Tuunainen (2005) asserts that developing an entrepreneurial university is not as simple as it may appear from a comprehensive perspective. Without strong and effective leadership, the transformation towards an entrepreneurial university may not be materialized (Yusof & Sapuan, 2008). Additionally, the departmental level may experience complexities according to Clark (1998) and that tension may develop among academics when trying to put the entrepreneurial paradigm in operation. Tuunainen (2005) also found other major internal factors inhibiting the entrepreneurial paradigm from being operational to include limited time due to classes or administrative work, limited financial resources, lack of infrastructure (Knuuttila, 2009), delay in fund management and lack of skilled personnel. External factors such as increasing investment costs, inadequate government funds, difficulty in private sector collaboration, lack of expert research and development personnel, lack of supplementary services to support research and development are also found to play a role (Yusof & Sapuan, 2008).

Figure 2: Entrepreneurial University - Key Strategic Challenges



Klofsten et. al (2019)

The diagram above is an extension of the challenges faced by universities when transforming into the entrepreneurial paradigm. It illustrates other factors viewed to inhibit the success of an entrepreneurial university. Some of the factors are considered internal, which is within the university as earlier outlined in the paragraph above and external, which is outside the university and its control such as stakeholders, partnerships and alliances. Additionally, the diagrams indicate that some challenges derive from teaching and learning such as moving from practice-based orientation to research-based. According to Klofsten et. al (2019), universities are also challenged by entrepreneurial pathways such as resource constraints, fears of a threat to the traditional academic value and lack of training to improve skills and competencies. The last key strategic challenge is the impact measures of an entrepreneurial university that includes revenue generation and low performance of academic faculty entrepreneurship.

2.2.5 Theoretical frameworks

Previous studies by (Clark, 1998; Sporn, 2001; Etzkowitz, 2004) suggests various theoretical models that help unpack the concept of entrepreneurial universities. The three authors made

comparisons between the recognized and casual factors that could be associated and considered in the transformation of entrepreneurial universities.

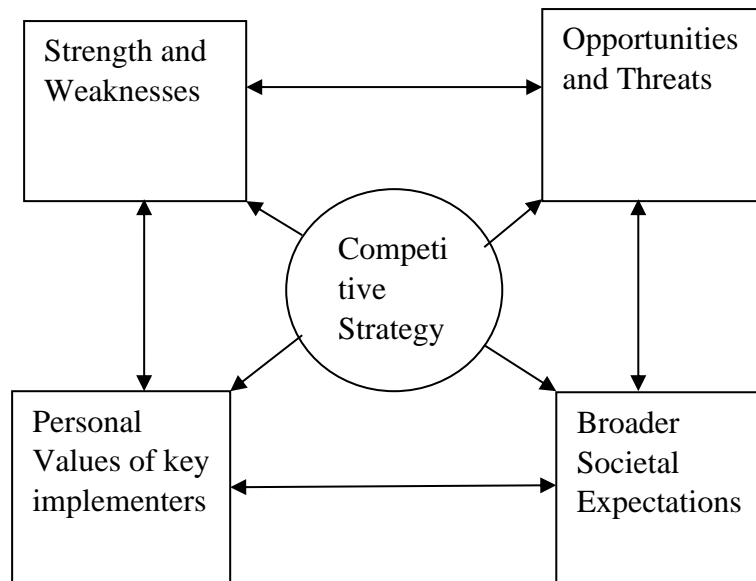
Clark (1998) suggested a model in which examined five European universities and analyzed various issues that affected the transformation of universities into being entrepreneurial. He identified pathways associated with the transformation, which were divided into formal and informal factors. Formal factors included strengthening the institutional core, an expanded developmental edge, and a diversified funding base; while the informal factors focused on an integrated entrepreneurial culture and an enthused academic heartland.

Interestingly, Sporn's (2001)'s model only studied the adaptation of higher education to the ever-changing environment and made a connection between the university structure and environmental forces through management, governance, and leadership. Quite astonishing, the factors that Sporn considered are of significant importance and value to an institution. She highlighted an institution's missions and goals, the structure, the management, governance, and leadership as the formal factors, the organizational culture, and the environment as the informal factors. There is no institution established without the above factors as outlined by Sporn (2001).

Etzkowitz (2004) refers to his model as the "Entrepreneurial University model" which consisted of five inter-related propositions derived from analyzing the entrepreneurial academic development in the USA, Europe, and Latin America. In this model, capitalization of knowledge, interdependence with the industry and government, independence with other institutional spheres, hybrid organizational forms were classified as the formal factors and renovation as an informal factor.

Furthermore, most researchers were more concerned with issues of strategy implementation and analysis of the organizational processes through which strategies emerge not considering the role of the firms' resources as the foundation for the firm strategy (Porter, 1990). He further expanded the latter by illustrating it on the diagram. He emphasized that formulating a competitive strategy requires four factors that determine the limits of what a company can accomplish.

Figure 3: Context in which a strategy is formulated



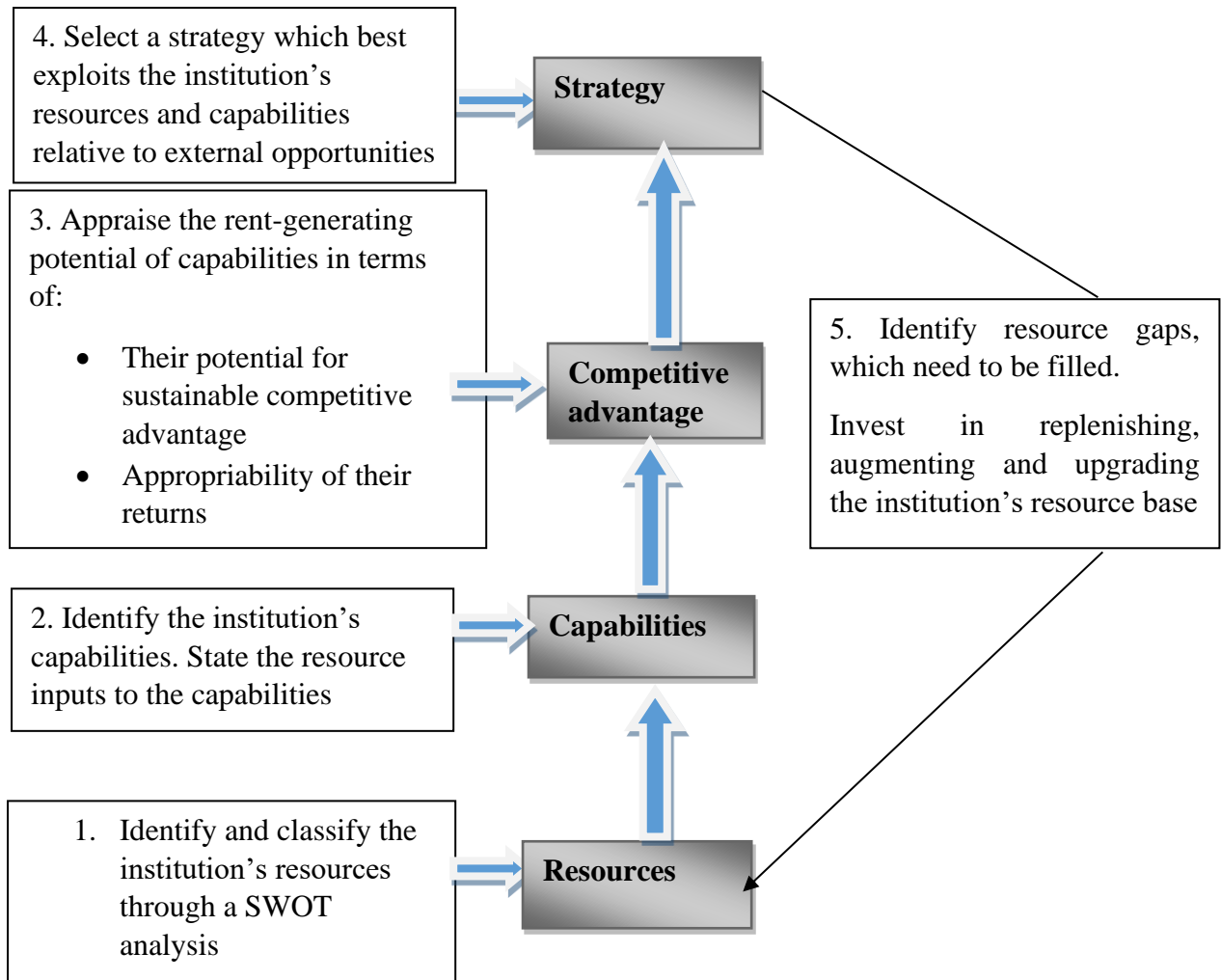
Porter (1980)

Figure 4 above shows that there are factors that need consideration when formulating a competitive strategy for an institution. Therefore, for a strategy to be competitive, it should include a proper analysis of the environment in which the institution operates. It can be an internal or external environment, in this case, the strengths and weaknesses; opportunities and threats. It is expanded further also to include the expectations of the society it is serving and the value of those involved in implementing that strategy. Therefore, it is to say that a strategy should not be crafted without considering other factors.

Grant (1991) develops the model of a resource-based approach to strategy analysis. The model shows five stages that an institution should go through to begin and complete the journey of realizing their potentiality towards money generation and stand out of competition in the industry. Step 2 and 3 of the model directly speak to objectives 1 and 2 of this study and would then be in support of the results of the study. Grant (1991) highlighted that an institution should have a strategy, which is defined as the match an organization makes between its internal resources and skills, and the opportunities and risks created by its external environment, resulting from its competitive advantage, capabilities and available resources. Grant (1991) further emphasized that key development on strategy investigation focused upon the link between strategy and the external environment, meaning that institutions should analyze the external environment in determining strategies to be developed to deal with those external

environments. However, Grant (1991) continues clarifying that harmonizing the exploitation of existing resources with the development of resources and capabilities for competitive advantage in the future is a subtle task. Porter (1990) added that sustaining advantage in the face of competition and evolving customer requirements also requires that firms constantly develop their resource bases. The diagram below depicts the model.

Figure 4: Resource-Based Approach to Strategy Analysis Model



Grant (1991)

Although there has been a wealth of research conducted to investigate the roles, activities, and functions of the entrepreneurial university, little focus has been placed on entrepreneurship departments where the research, teaching and knowledge exchange about entrepreneurship takes place (Phung, Lamine, Jack and Hamilton, 2018). Furthermore, Smilor et al, (1990) elaborate that the area of university culture as an important element in the success of transforming into entrepreneurial university remains underdeveloped

because a number of the studies had followed other tactics such as academic capitalism, commercialization of knowledge and triple Helix without taking into account the environmental factors.

2.3 Conclusion

The chapter looked at existing related knowledge regarding the entrepreneurial university concept, its definition and what it could mean for an institution. A major highlight in this chapter is that universities should move towards reducing their dependency on state funding and divert their vision towards innovation and creating third income streams. Also, the theory that informs the study, as well as the relationship between the theory and the concept of entrepreneurship, was presented. It was highly emphasized that entrepreneurship cannot take place in the absence of resources of any kind. Additionally, for Sustainable Competitive Advantage to occur, universities should identify those internal capabilities as sources, especially human resources.

The chapter also went further into providing details on how the concept of entrepreneurial universities emerged. It was obvious as previous researchers indicated a better way to explain it using Stanford University as an example when difficult financial situation was faced by the university. The review of literature contributed to a much better understanding of the nature and meaning of the research problem. The chapter further reviewed theoretical frameworks/models developed by various authors to which the findings of the study can be associated.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter discusses how the researcher went about collecting data to provide answers to the research objectives and achieve the goals of the research as stated in chapter one. The research paradigm into which the study is embedded and methodology adopted by this study, the research instruments/techniques, sampling method used, data collection and analysis were presented. The chapter also highlights the validity, reliability and ethical issues surrounding the study.

3.2 Research design

A case study research method was used because the researcher wanted to understand that particular problem of budget cuts and what could be done to avert the situation and reverse the implications it may causes. The researcher would also like to describe the issue in-depth and in more detail so that the results cannot be generalized to other cases. Clough and Nutbrown, (2007) confirm that case study results are particular to the specific case and context and can therefore not be generalized, because it becomes difficult to replicate in different settings. Furthermore, the researcher only focused on a specific real-life context and in a particular geographical area. According to Creswell (2007, p. 73) case study method involves an exploration of a bounded system, a single or multiple cases, over some time through detailed, in-depth data collection from multiple sources. Stake (1995) observes that a case study research is concerned with the complexity and particular nature of the case in question. Case studies become mostly useful where one needs to comprehend a particular group of people, a problem or a situation in great depth to bring out the issue of context and its history under investigation (Patton, 1990). The findings of this study cannot be generalized to other cases because their context may differ, however, they were used to suggest and recommend further research.

3.3 Research Paradigm

The study is fitting in the paradigm of interpretivism, as an interpretive, the researcher interprets the fundamentals of the study, thereby incorporating human interest into the study (Myers, 2008). This study follows an inductive approach. Saunders et al. (2012) define inductive approach as when the investigator searches a topic and develop a theoretical explanation as the data are collected and analyzed. A deductive approach allows senses to emerge from data as it is collected to detect patterns and relationships to build a theory (Saunders et al., 2012). Greener (2008) explains that the inductive approach starts by looking at the focus of research such as organization, a business problem or an economic issue and thorough investigation by various research methods aimed at generating theory from research. According to Reeves and Hedberg (2003, p. 32), the "interpretivism" paradigm stresses the need to put analysis in context and more concerned with understanding the world as it is from the subjective experiences of individuals.

However, according to Neuman (2000) that understanding and interpretation of the meanings should be in human behavior rather than to generalize and predict causes and effects. Interpretivism use meaning (versus measurement) oriented methodologies, such as interviewing or participant observation, that rely on a subjective relationship between the researcher and the subjects. Interpretivism avoids rigid structural frameworks such as in positivist research and adopts more personal and flexible research structures (Carson et al., 2001) which are receptive to capturing meanings in human interaction (Black, 2006) and make sense of what is perceived as reality (Carson et al., 2001). Besides, interpretivism believes the researcher and his informants are interdependent and mutually interactive (Hudson and Ozanne, 1988). The researcher remains open to new knowledge throughout the study and lets it develop with the help of informants which (Neuman, 2000) explains leads to an interpretive researcher being able to understand motives, meanings, reasons and other subjective experiences which are time and context-bound.

3.4 Research Methods

The study used semi-structured interviews and documents review to collect both primary and secondary data.

3.5 Population

Banerjee and Chaudhury (2010) define the population as a whole group about which some information is essential to be established. The population for this study was the 14 Centres in the university. However, not all 14 centers could be used for this study because it will make it difficult to analyze the data. Ritchie and Lewis (2011) confirm the above, saying the information that qualitative studies collect is rich in detail and it will be impossible to conduct and analyze hundreds of interviews.

3.6 Sampling method and sample size

The researcher used a non-probability technique to select a sample. Ritchie and Lewis (2011) define a non-probability sample as when the units are deliberately selected to reflect particular features of or groups within the sampled population. Purposive sampling was used to select the head and deputy head of each centre because they are more knowledgeable and spearhead all research and entrepreneurship activities in their respective centres. The researcher used purposive sampling which is defined as when units are chosen because they have particular features or characteristics, which will enable detailed exploration and understanding of the central themes and puzzles the researcher wishes to study (Patton, 2002) to select the sample. Purposive sampling was used as it allows participants to be chosen because they are likely to be knowledgeable and informative about the phenomena under investigation (Leedy and Ormrod, 2005).

The researcher only selected 4 centres to represent the population. This is because the Centres are responsible for coordinating research and entrepreneurship-related activities. Two staff from each of the three Centres and one from the other Centre represented the academia and administrative support staff. The study collected data from four (Centre for Quality Assurance & Management (CEQUAM), Multidisciplinary Research Centre (MRC), the UNAM Foundation Centre and the University Central Consultancy Bureau (UCCB) out of 14 centers at UNAM. Diversity was given high priority when the sample was selected. The latter was supported by Ritchie and Lewies (2011) saying that it is important to confirm that the sample is as unlike as possible within the confinements of the defined population. They further explained that diversity maximizes the probability of identifying all factors linked to the

phenomenon and that interdependency between variables is investigated so that slighter significant variables are detached.

3.7 Data Collection Instruments

The data collection methods used included the review of internal and documents in the public domain. The documents reviewed were the annual reports for a period of four (4) years from 2013 -2016 and UNAM's Strategic Plan. The study also collected primary data from the semi-structured face- to -face interview. These two data collection methods made it easier for the researcher to compare data and avoid data error. The methods are discussed in more detail below.

3.7.1 Documents Reviewed

Document review is a form of qualitative research in which documents are understood by the researcher to give voice and significance around an assessment topic (Bowen, 2009). According to Hopkins (1993), document review is important because it provides information and understanding of what is happening in the university. Furthermore, document review is an efficient and effective way of gathering data because documents are manageable and practical resources. It is also cost-effective and time-efficient to obtain and review documents than conducting your research or experiment (Bowen, 2009). It is for these reasons that the researcher decided to review UNAM's annual reports and the Strategic Plan to provide answers as to what internal capabilities in terms of organizational capabilities such as teaching materials, human resources, funds and infrastructures that the university possesses. Document review allows the researcher to interpret documents to give voice and meaning around an assessment topic (Bowen, 2009). O'Leary (2014) warned that it is important for researchers to thoroughly evaluate and investigate the subjectivity of documents and understand their data to preserve the credibility of their research. The UNAM's annual reports the researcher reviewed for different years were coded as follows:

- Annual report 01 - 2013
- Annual report 02 - 2014
- Annual report 03 - 2015
- Annual report 04 - 2016

3.7.2 Semi-structured interview

The study also conducted semi-structured face- to- face interviews to provide answers to how internal capabilities in terms of academic personnel is applied to garner competitive advantage and how it can be used to exploit entrepreneurial opportunities (market capabilities) for UNAM such as consultancy work and research. The study used semi-structured interviews because according to Popoola (2011) it enables the researcher to explain confusing and ambiguous questions in detail. It also allows the researcher to ask additional questions including those that have not been anticipated at the beginning of the interview and to clarify or restate questions that respondents are not clear about (David & Sutton, 2004, p. 87). The emphasis from Gray (2004, p. 217) that this type of interview gives the researcher opportunities to probe for views and opinions of the interviewee to explore new paths that were not initially considered also supported my selection. The study kept complete records of interviews and copies of annual reports in an accessible manner to ensure the quality of the semi-structured interview as suggested by Bryman and Bell (2014, p.70).

3.8 Data Collection Procedure

The researcher accessed the annual reports indicated in section 3.7.1 of this chapter from the university website as they are in the public space. Since the UNAM's Strategic Plan is not yet uploaded onto the university website, the researcher engaged the Quality Assurance and Management Centre at the university to inquire about its existence and therefore receiving it in hard copy upon presentation of UNAM's permission letter.

About semi-structured interviews, the researcher upon receiving the permission letter to collect data engaged the different centers where participants were identified as per the sampling method for the study. The researcher contacted selected participants through a telephonic conversation to secure a date and time suitable for an interview.

3.9 Data Analysis

Gays, Mills, and Airasian (2016) define data analysis as the process of making sense and finding importance in the data, deducing what has been seen and what has been said. The qualitative data collected were analyzed using thematic analysis, as it generates themes related to the case (Gale et al. 2013). Bowen (2009) added that the emerging themes are categorized

for further analysis, making it a useful practice for grounded theory. Further analysis was done by reading and re-reading of data, as well as coding and categorizing them.

The external validity was considered through “thick descriptions” which Bryman and Bell (2014, P. 45) argue provides others with a database for making judgments on transferability of findings to other contexts. Ponterotto (2006) defines “thick description” as when the researcher both describe and interpret observed social action and/or conduct within a particular setting. The context can be within a smaller unit such as a work environment or a larger unit such as a community. Bogdan & Biklen (2003) added that it accurately describes observed social actions and assigns purpose and intentionality to these actions, by way of the researcher’s understanding and clear description of the context under which the social actions took place. Furthermore, thick description captures the thoughts and feelings of participants, as well as the often complex web of relationships among them as Schwandt (2001), explains and lead to thick interpretation, which in turns leads to thick meaning of the research findings for the researchers and participants themselves, and for the report’s intended readership (Liebow’s, 2003).

3.9.1 Triangulation

The researcher used documents to review and semi-structured interviews to collect data. These multiple methods of data collection helped the researcher to triangulate and expand on each source of data collection (Annual reports, the Strategic Plan review and semi-structured interviews) trading off the potential implications of any single source. Triangulation increases confidence in the findings through the confirmation of a proposition using two or more independent measures (Heale and Forbes, 2013, p. 58) and, at the same time provides a confluence of evidence that breeds credibility (Bowen, 2009). Data triangulation is important during the research process because it is a way to validate the findings across various data sources and it aims to lessen the impact of potential biases that can exist in a single study (Bowen, 2009, p. 28). The researcher read and re-read the data to identify commonality in responses, which could increase the credibility in data collected. The researcher validated data from document review against those from semi-structured interviews to deal with potential biases.

3.10 Credibility, Transferability and Trustworthiness

Validity and reliability are components of research that qualitative researchers should be mindful of (Patton, 2001). Therefore, to ensure credibility, transferability, and trustworthiness,

the researcher used two methods of data collection, semi-structured interview, and document review.

3.11 Ethical Consideration

Ethical issues are nowadays more central to discussions about research than ever before because of the greater concern among representatives of universities, research funding bodies, and professional associations to exhibit good ethical credentials (Van den Hoonaard 2001). Discussions about ethical principles in social research, and more specifically transgressions of them, tend to revolve around certain issues that recur which Diener and Crandall (1978) broke down into four areas:

- whether there is harm to participants;
- whether there is a lack of informed consent;
- whether there is an invasion of privacy and
- whether deception is involved.

Bryman (2012) echoed the same sentiments as above by saying nowadays researchers are required to go through an ethical clearance process for the social sciences.

The researcher obtained ethical approval from Rhodes University's Ethics Committee as per the Rhodes University's requirements. The ethical approval obtained enabled the researcher to apply for and obtain gatekeeper permission from UNAM's Ethics Committee to use their institution in the study (see attached, appendix 2). The researcher explained the purpose of the study to participants, who at the same time completed a consent form to take part in the study. Giles (2007) supports the latter stating that where modest risk or harm is anticipated, informed consent must be obtained. The informed consent gives respondents the opportunity to be fully informed of the nature of the research and the implications of their participation at the outset (Grinnell and Unrau, 2008). The researcher assured participants of complete confidentiality with the information provided and that their identities are not to be revealed in the study.

3.12 Conclusion

This chapter provided details on the research design and methodologies used to inform the whole research process. The design and methodologies were used to collect data applicable to provide answers to the research objectives. Justifications for selecting particular settings, approaches and methods were also provided. Information on how the researcher intends to analyze the data collected was also outlined. The chapter further provided information with regards to validity, reliability, and triangulation of the methods used and whether the results of this study will be generalized or not. Further details on what the ethical issues were and how they were handled were also provided.

CHAPTER 4: PRESENT FINDINGS

4.1 Introduction

This chapter is divided into two sections: Section A, presenting the findings from the documents reviewed during data collection and the semi-structured interviews. To begin, the chapter provides a review of raw data obtained from; a) the review of annual reports of the university for four years, b) the university strategic plan and c) the university quality assurance management policy. This data responds to the objective of determining the internal capabilities and opportunities of the university. The research reviewed the annual reports based on funds availability, relationships entered into with other entities, human resources, infrastructure development, and technology. The same section also presents the raw data from the semi-structured interview with the university personnel. These data provide answers to objectives 2 and 3 of this study as already outlined in the introduction section. Section B presents the analysis of the data in an interpretive manner.

SECTION A: PRESENTATION OF FINDINGS

4.2 Findings from Documents Reviewed

4.2.1 Annual reports

The researcher reviewed the annual reports based on the internal capabilities in terms of the following concepts: technology and innovation, relational, physical, building internal capacity and funds availability and investment human capacity as internal capabilities. The researcher found comprehensive information regarding the concepts above in the annual reports indicating that these internal capabilities, however, differ from one year to another. This was because of the amount of capital contribution from the state and, what they could collect from students in tuition and accommodation fees.

4.2.1.1 Infrastructure

a) Annual Report 01- 2013

In this particular year under review, the university has one farm located at Neudamm, Ogongo and Otjiwarongo respectively managed by the Faculty of Agriculture and Natural Resources. According to the Annual report (2013), the Ogongo farm produces horticultural products while

Neudamm produces farm-animal products. Both products are sold to staff and students at a subsidized price. The Neudamm farm is located on 10 187 hectares of arid rangeland rearing beef and dairy cattle, goats, sheep, a few pigs and a thousand egg-laying chickens from South Africa. The produces especially dairy products are sold to students and the staff of the university. The farm sells 800 liters of milk per week at a price of N\$7, 50 per liter to caterers at the university's main campus, which amounts to N\$24,000 per month and sells about 4000 liters of milk daily at the same price directly to both students and staff, making N\$900,000 per month. The Ogongo campus is located on a 4,350 hectares farm of which 1000 ha serves as a game park, approximately 800 kilometers from Windhoek, Namibia's capital city. The value and the revenue generated, as well as what is produced on the farm is not mentioned in the annual plan. The Otjiwarongo farm is yet to be developed by the university. The Faculty of Agriculture received laboratory equipment donated by the Chinese Government. In the same vein, the German Government through the GIZ also donated laboratory equipment and machine for the Geo lab. The annual report has, however, not indicated how much the donations are worth in terms of value.

b) Annual Report 02 - 2014

Various structural changes in terms of infrastructure have taken place within the period under review at the university. The university has launched a fund that saw another campus established in Keetmanshoop, south of Namibia in 2014. The campus in the southern town of Keetmanshoop is another milestone achieved by the university is taking its brand to the regions being the 12th. In the same year, the university through a Public-Private Partnership (PPP) established an accommodation facility at the Main Campus. Since the number of university intakes increased due to the enrolment of international students that were recorded in the period under review (Annual Plan, 2014). The (PPP) was an arrangement between Hanganeni Investments (a local company) and UNAM. The university also launched its press, which is a publishing house for homegrown and allopatric universal knowledge. The UNAM Press publishes works on topics related to Namibia and the Southern African region, reflecting the strengths of the University in these areas: Literature, language and culture; education and democracy; statutory and customary law; public policy; social and political history; autobiographies; and indigenous knowledge (Annual report, 2014). The books published in the press are distributed on the university through its bookstore and internationally by African Books Collective. However, there is no indication of the monetary value yield in the annual

plan. Moreover, to increase and strengthen its infrastructure, the university completed another phase of construction of the School of Medicine.

Also, as part of its infrastructure, the university opened a satellite site for the training of medical students in the North. This site provides students with clinical education and training at all hospitals in the northern region (Oshakati State Hospital, Onandjokwe Lutheran Hospital, and the Ongwediva Medipark Hospital). Still in the north, a wing named after India (the Indian wing) of the Eng. Jose Eduardo Dos Santos Campus was also completed however, work is still progressing for the rest of the project. Back to the main campus, the university has also managed to complete the construction of the School of Military Science.

c) Annual Report 03 - 2015

During this period, the Department of Geography, History and Environmental Science received equipment to the tune of N\$563,296.71 from the Turkey International Cooperation and Coordination Agency (TIKA).

d) Annual Report 04 - 2016

Through collaboration, the university received satellite data equipment from the Monitoring for Environment and Security in Africa (MESA) to be used for research and education in the Social Science Department (Annual report, 2016). The value of the equipment is not mentioned in the annual report. MESA is an African Union (AU) and SADC program that monitors floods, droughts, and wildfires. In the same vein, the Neudamm Agricultural Campus received a donation of agricultural equipment to produce animal feed pellets from the Turkish Agency for Cooperation and Coordination (TIKA). In both instances, the value, capacity, and team capabilities are not mentioned in the annual report.

4.2.1.2.1 Centre for Innovation and Development

According to the Annual report (2016), the university has established a Centre for Innovation and Development (CID). Established under the Office of the Pro-Vice-Chancellor for Research, Innovation, and Development, the Centre aims to drive innovation and stimulate development start-ups by taking the advantage of value chain under product development.

The Centre focuses on the following priority areas:

- National Self-Sustainability and Agro-Processing Programme
- Environment, Energy and Natural Resources Programme

- Society, Well-being and Health Programme
- Engineering and ICT
- Indigenous Knowledge Systems Programme
- Education
- Natural Science & Technology

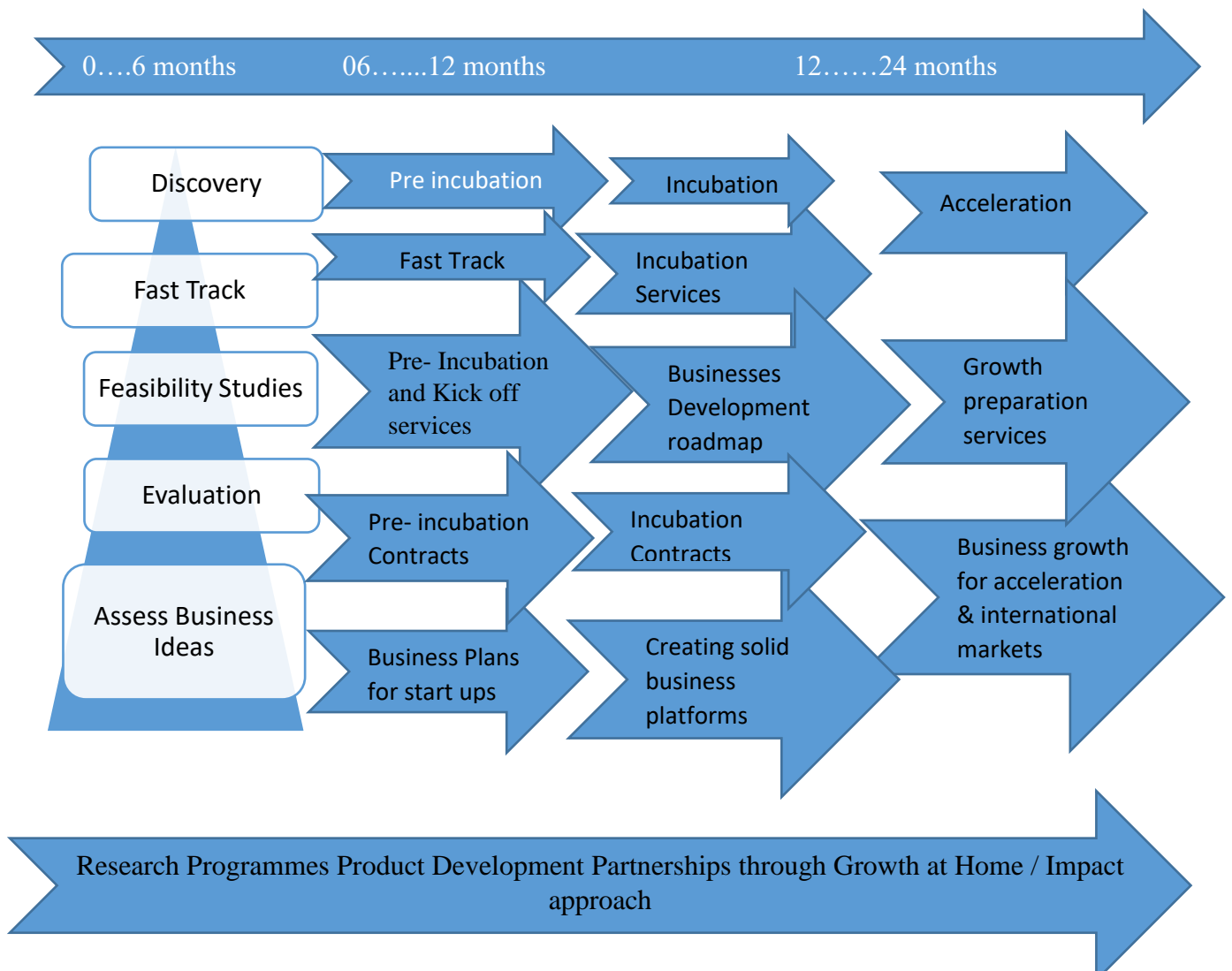
Table 1: Findings under each of the priority areas

Area	Output/ Outcome	Value
Agro Programme	Processing of meat, milk, yogurt, and cheese at the Neudamn Campus	N\$924,000 per month
Natural Resource Programme	None	-
Social Being Programme	None	-
Engineering & ICT Programme	None	-
Indigenous Knowledge Programme	UNAM press that publishes homegrown and allopatric universal knowledge	Not indicated
Education Programme	None	-
Science & Technology Programme	None	-

This means that all research output should be innovated in any of the priority areas outlined above. The results should not only be on paper but that the implementation is highly emphasized. However, there is no indication in any of the documents reviewed of the output and correlating value of the research done in all priority areas excluding Agro and Indigenous Knowledge.

Now for research outputs that considered as an innovation, there is a process to follow to realize those outputs and translate them into feasible business opportunities. The figure below illustrates the process flow adapted by the CID on research programs leading to product development.

Figure 5: Process Flow



As shown in the diagram, the process has different timelines that start with business idea identification and generation by prospective entrepreneurs. When a business idea is identified, a business plan for a start-up is then drawn up. The university will then create solid business platforms where the business idea is finally presented. The next stage is where the business idea is evaluated against some criteria, which when passed it leads to pre-incubation contracts considered and eventually entered into. Both the assessment of the idea and its evaluation leads to business growth for acceleration and international markets. Once the idea passes the evaluation, a feasibility study is conducted to determine the viability of the idea leading to the pre-incubation and service kick-off. A business development roadmap is then drawn up extending into the growth preparation services. The idea is then fast-tracked into the full incubation where it is nurtured and potential funders. The discovery part is when the business is now feasibly tried and that its existence is accelerated.

4.2.1.2 Capacity Building and External Agreement

a) Annual Report 01 - 2013

During the period under review in terms of relationship, UNAM signed 43 new international agreements in human resource development initiatives of which, the interests were:

- a) Finland (University of Eastern Finland) in which 8 staff members were enrolled,
- b) USA (the University of Washington, University of California San Francisco),
- c) South Africa (Stellenbosch University) and
- d) Kenya (Jomo Kenyatta University of Agriculture and Technology) and
- e) Several universities in Germany.

Among the agreements signed is a local agreement with the Namibian Police for its 22 senior officers in the force to be trained on an Executive Diploma in Police Management course under the Namibia Business School. The agreement is worth N\$4.6 million dollars made possible by the Finnish Government.

UNAM concluded negotiations with the China University of Geosciences Beijing (CUGB). The collaboration led to the establishment of a Confucius Institute at the university housing Chinese language courses and cultural programs.

b) Annual Report 02 - 2014

According to this annual report, UNAM has increased its partnership with international universities such as:

- a) the Research Institute for Innovation and Sustainability (RIIS) in South Africa,
- b) the National Business Technology Centre (NTBC) in Zambia, and
- c) Eduardo Mondlane University (UEM) in Mozambique.
- d) the Universidad de la Ciencias Informatics (UCI) of Cuba.

This led to UNAM becoming a gateway for SADC researchers and innovators as it enables them to showcase their research whilst tapping into key innovation centers around the world.

c) Annual Report 03 - 2015

UNAM signed a Memorandum of Understanding with the Russia National University of Science and Technology, to support UNAM in their study of solar energy and material science whilst providing postgraduate study opportunities as well. This will enable UNAM to conduct

consultancy and carry out feasibility studies for solar energy for the private sector and government.

d) Annual Report 04 - 2016

On the local front, the university signed a Memorandum of Understanding with the Namibia Ports Authority, making the way for partnership and comprehensive research of the ecosystem and ecology of the Walvis Bay Lagoon. The university had more than 210 active international partners collaborating across all disciplines in this period enabling the university to raise a total of N\$4,364,098 during the year.

4.2.1.3 Technology and Innovation

a) Annual Report 01 - 2013

The university also installed a state-of-the-art video conference facility in Kenya where most of the lecturers are well vested in the field of Agriculture to reduce the cost of flying in lectures from Kenya except for practical lessons.

b) Annual Report 02 - 2014

This year, the UNAM library successfully upgraded its library management system from an old system called the Millennium system to a more robust system known as Sierra. This new system is an open services platform with powerful functionalities that provide integrated resources management.

c) Annual Report 03 - 2015

In this period under review, there was no technological aspect handled by the university and if there.

d) Annual Report 04 - 2016

The university has invested in wireless internet connection at all its campuses nationwide. The move enables students to have access to a wide range of information that is helpful in their study and worldwide examples of how to solve certain problems from their courses.

4.2.1.4 Building Internal Capacity

Skills and expertise are important components of any institution's workforce. The study found that UNAM has in the years under review developed quite many staff members from its staff development program. Most of the qualifications obtained under the staff development

program are a Master’s degree and Doctorates. That is achieved only once the staff is provided with opportunities to improve and develop themselves and their careers. The university provides quality education and imparts universal knowledge as a result of staff development and growth in comparison to other institutions. The table below shows how many staff members were developed under the University Staff Development Program over the years under review:

Table 2: Number of Staff Members Developed

	2013	2014	2015	2016
Bachelor’s Degree	5	68	65	0
Masters	15	81	89	0
PHDs	273	104	129	0
Total	293	297	331	0

Source: Researcher’s design

The table above clearly shows how the number of staff members developed has changed over the years, except for 2016, as the annual report for 2016 did not contain any information regarding staff development. There has been an increase even in the different qualifications they were developed. A significant change is noticeable in the Bachelor’s Degree between 2013 and 2014 and the Master for the same year. However, the data indicated a reverse in the number of staff members developed for PHDs between 2013 and 2014.

4.2.1.5 Funds availability

The annual reports show different income streams for the university. The largest portion was from state funding referred to as subsidies and the smallest contribution was from meal fees. The university also received income from capital grants, hostel and tuition fees. It was also noticeable that the university’s funding especially subsidies from the state has fluctuated over the four years.

Table 3: Revenue and Expenditure Statement for the four years

REVENUE	AR – 01	AR–02	AR– 03	AR– 04
Subsidies	570 487	774 535	1,108 720	904 968
Tuition Fees	220 197	269 116	319 374	409 968
Hostel Fees	23 610	27 071	30 751	34 622

Meal Fees	23 367	17 540	18 882	22 586
Capital Grant	24 776	95 000	48 344	45 806
Other income	15 700	30 683	24 695	30 473
EXPENDITURE				
Personnel and related costs	654 005	790 311	914 864	1052 370
Retirement benefits obligation	39 123	55 407	60 381	72 158
Administrative costs	214 962	309 204	380 377	375 028
Depreciation, amortisation and impairments	45 400	28 824	117 485	74 693
Finance costs	18 000	895 000	3 243	2053
Fair value adjustments	0	29 000	(751)	(15)
Surplus/Deficit for the year	(75 371)	(65 630)	72 432	(154 869)

Source: Researcher's design

Table 2 above shows that it was only for three (3) years out of four (4) that the university has been faced with a budget deficit. Only one year the university had a budget surplus, which could have been brought about by an increase in subsidies and tuition fees.

4.2.1.6 Investment in human capital

The review shows that human capital is divided into three categories: Faculties and Centres Academic Staff, Centres Support and Administrative Staff and Central Administrative Staff. The number of staff has been growing due to an increased number of student intakes. The table below shows the number of staff over the years under review:

The human capital at the university has been increasing annually. UNAM has also appointed one of its staff members in Geology to chair the highly influential International Union of Geological Sciences - Commission on Geoscience for Environmental Management (IUGS-GEM). The commission considered the most powerful body in the world, is mainly responsible for approving policies that bring about regulations, standards, and norms in the geological

sphere. Another milestone is that of another university staff heading the German Section academic elected as President of the Association for German Studies in Southern Africa, which puts UNAM on the map and the country at large.

The study shows that human resources are one of the most and critical internal capabilities of the university. The table below shows the movement of staff in terms of recruitment over the years under review:

Table 4: Number of staff recruited in the university over the years

	2013	2014	2015	2016
Faculties & Centres	831	825	893	948
Academic Staff				
Faculties and Centres	370	411	440	804
Support and Administrative Staff				
Central Administrative Staff	237	279	285	-?
Total	1438	1515	1618	1752

Source: Researcher's design

Every year, the number of staff recruited increased by about more than 1000 staff as shown in the table above. This in itself creates a competitive gain in terms of human capital for the university.

4.2.2 UNAM Strategic Plan 2019-2024

In the new era and under the leadership and guidance of the new UNAM Vice-Chancellor, a new Strategic Plan covering six years starting from 2019 was developed. The Strategic Plan aims to ensure that all efforts of UNAM are aligned towards the common purpose of eliminating inefficiencies and increasing performance. The plan outlines the following five key Strategic Themes:

a) Institutional sustainability

Is when the university decreases its dependency on Government subsidies through its sustainable financial position, areas of operational excellence and good governance. This is done by generating surplus income and prioritization of financial and strategic planning of the

university. This theme will be measured through the commercialization of intellectual property and assets, improved administrative management and improved financial management by introducing cost-saving measures among others.

b) Translational research, innovation and enterprise Development

This is when the university translates research and innovation into enterprises to increase the benefits of the Fourth Industrial Revolution and address the challenges of the 21st Century. This is measured through increased funding for research by the increasing partnership and cooperation for grants, commercialization of the research outcomes such as patents and copyrights development and improved research and innovation productive capacity through innovative ideas developed and incubation programs.

c) Education and Graduate Employability

This has to do with the quality of education provided with employment opportunities for the university's graduates. The theme will be measured through the relationships established with the business, industry and key stakeholders, which, leads to program and research relevancy.

d) Community Engagement, Environmental Sustainability, and Social Relevance

This is education and creating public awareness on what the university offers and engaging the community in projects of social benefits to them through research and learning. Reaching out to the public, industry, alumni, and stakeholders strengthen relationships and development. This can be measured through a collaborative partnership with communities through research, the introduction of scientific solutions and vulnerabilities reduction towards issues such as malaria, greenhouse gas emission, and climate change.

e) Institutional Planning and Internationalisation

Has to do with the multi and intercultural skills of the university to be able to interact globally. Merging of competencies, resources and innovative abilities into a well-recognized brand to improve the university global ranking. This is measured through international investment opportunities the university secures and strengthens university brand and corporate image.

In this Strategic Plan, UNAM has revised its mission statement and vision concerning the fourth Industrial revolution and Namibia's Vision 2030. The revision was driven by the old mission statement and vision did not fully incorporate the entrepreneurial aspects.

Table 5: UNAM's Mission Statement and Vision

Old Mission and Vision		New Mission and Vision	
Mission Statement	“to provide quality higher education through teaching, research, and advisory services to our customers with the view to produce productive and competitive human resources capable of driving public and private institutions towards a knowledge-based economy, economic growth and improved quality of life”		“to contribute to the achievement of national and international development goals through the pursuit of translational research, quality training, and innovation”.
Vision	“to be a beacon of excellence and innovation in teaching, research and extension services”.		“to be a sustainable international hub of excellence in higher education, training, research and innovation by 2030” (UNAM Strategic Plan, 2019-2024).

Source: Annual report (2012)

4.3 Finding from Interviews

The researcher interviewed six personnel of the university. The personnel is from the Centre for Quality Assurance and Management (CEQUAM), University Central Consultancy Bureau (UCCB), the Multi Research Centre (MRC) and the UNAM Foundation. As stated in the ethics section of Chapter three that to protect the participants’ identities, their details will not be revealed, so participants were coded. The participants are coded as P- Participant and the number next to it, thus being P01, P02, P03, P04, P05, and P06. The personal profiles of the participants follow below:

Figure 6: Biographical Data (N=6)

Code	Gender	Centre	Role	Years of Experience	Qualifications
P01	Male	CEQUAM	Director	5	MBA
P02	Male	CEQUAM	Coordinator	10	PHD
P03	Male	UCCB	HOD	9	LLB & Education
P04	Male	MRC	Deputy Director	6	PhD
P05	Male	UCCB	Coordinating Director	19	Master of Business Leadership
P06	Male	UNAM Foundation	Lecturer	9	PhD

Source: Researcher's design

The figure above shows that four (4) participants have working experience that ranges between 6-10 years at the university. Only one (1) participant has the longest working experience at the university ranging between 15-20 years while another one has been there for only between 1-5 years. Two participants hold Master Degrees in Business Administration and Leadership respectively, while three participants hold Ph.D.'s in a different field. Additionally, one participant holds a degree in LLB and Education. It is worth noting that all participants are part of the university management committee. The interview process took between 15 – 20 minutes as it differed from one participant to another.

4.3.1 Mission Statement and Vision reflecting entrepreneurial intent

Question: Does the university's mission statement include an entrepreneurial vision for the future and how should it be incorporated?

Participant	Answer
P01	Yes, the university have a new mission statement specific on entrepreneurial activities. The old one is not.
P02	The University developed a new Strategic Plan for 2019 – 2024 where the focus is on research, innovation and development and that it is in the same Strategic Plan for 2019-2024 where the new mission statement and vision are stated.

- P03 The new mission statement and vision were necessitated by the new direction and vision of the current Vice-Chancellor that of research and innovation.
- P04 No, it does not. There is a new mission statement after the new Vice-Chancellor focusing more on research and innovation.
- P05 No, there is a revised mission recently after the new leadership focusing on research, hub, and innovation
- P06 The current mission statement and vision does not include an entrepreneurial vision, however, as part of the transformation that the university is going through, a new mission statement and vision was developed in line with the 21st Century and 4IR. This is an initiative of the new Vice-Chancellor”.

4.3.2 Internal Capabilities

Question: Name the internal capabilities that your institution has which could enable the process of the institution becoming entrepreneurial university:

Table 6: List of Internal Capabilities

Participants	Answers
P01	Human resources, assets in terms of land and finances
P02	Human resource capacity and Inceptor (Holding company)
P03	Staff compliment, Positioning (12 campuses & centers) and properties such as land, infrastructure
P04	Human resource, Assets (land & infrastructure) and financing (subsidy)
P05	Human capital, Infrastructure, and assets such as land
P06	Human resources, student pool, and Published books

4.3.3 Sustainable Competitive Advantage

This question was asked to determine how the internal capabilities listed above could be utilized to create a competitive advantage for the institution.

Question: How could these internal capabilities be effectively applied to create a sustainable competitive advantage for the university, participants had this to say:

Table 7: How internal capabilities can be effectively applied to create a sustainable competitive advantage

Participant	Answers
P01	<p>In terms of human resources, the university needs to revisit its structure so that it becomes more relevant and responsive to current needs. The university has plenty of lands available on its various campuses throughout the country that could be developed into good use such as property rentals for private businesses. With regards to medicine, the university should establish a teaching hospital on the School of Medicine campus where our own produced medical doctors and nurses can practice and eventually be employed to assist the Government in creating jobs and internship opportunities.</p> <p>Look, we also have the Neudamm Agricultural Campus 38km outside Windhoek providing training to our students in crops and animal rearing as well as in veterinary studies. Under this campus, the university owns two farms. As we speak, the campus process meat, makes yogurt and produce milk but on a small scale and currently sold to the university staff. The university should also utilize the available funding although not enough to fund various researches however, ensuring that research outcome is implemented into viable businesses with tangible products or services”.</p>
P02	<p>Identification of key priority areas for the university to focus on and avoid being everywhere. The university should move away from being too traditional and redirect their efforts to activities framed to help it thrive such as more research and encourage implementation of those research outcomes.</p>
P03	<p>The university should move away from the current mix of direction and identify certain areas to focus on. Research conducted should be monitored and that their outcomes are innovated so that they can be commercialized. Additionally, <i>“For example, there is an aquifer at the university’s Sam Nuuyoma Marine and Coastal Research Centre (SANUMARC) at Henties Bay where water can be sourced, bottled,</i></p>

	<i>branded and then sold in different shops and campuses throughout the country”.</i>
P04	Human resources based on their expertise create opportunities to impart outstanding knowledge and skills in line with market demands. He added that their expertise would enable them to be part and parcel of developing strategies and execution processes of the university. In terms of infrastructure, the university should among its infrastructure identify those that are still relevant and align them to its needs so that they can accommodate envisaged entrepreneurial activities.
P05	The university’s asset base such as land could be developed through the Public-Private Partnership (PPP), a good example is the Emona accommodation facilities at the main campus in Windhoek developed by the university and private businesses. The accommodation facilities are under the management of the private entity for six years to recover their capital invested and only then it can be handed over to the university. The university can also solicit skills from its staff and encourage them to present or disclose any commercial opportunity. Once the staff and the university agree, the staff can then be incentivized.
P06	The student pool can be used as experiments by the university and private sector in local research that would inform innovation. He continued that, since the human resource is so diverse in terms of nationality and tribes, more ideas about cultural norms and values are shared and integrated. Best practices on indigenous knowledge are also passed on to each other in the university. Of great importance is to tap into the knowledge of academics through research and to create values that instill an institutional culture that is the pride of its work and achievements so far. The university should also educate its community whether the staff, students or nearby surroundings on what it expects from them and how it can contribute to their wellbeing.

4.3.4 External Opportunities to Exploit

Question: How can these internal capabilities influence external opportunities for the university to exploit, participants, had this to say:

Table 8: How internal capabilities influence to exploit external opportunities

P01	The university research findings should be presented to both the national and international market to attract potential investors willing to enter into a partnership with the university. In the same vein, the university is also given the capabilities to secure funding from various financial institutions to, for example, develop their asset base and commercialize them.
P02	This leads to collaboration on research with the industry that can lead to the research outcome easily to be implemented. Translation of the asset base into income-generating enterprises such as the two farms. The university should patent and have copyrights over its innovations to protect and challenge its use by any third party.
P03	They can be used for innovation and manufacturing of products. Leveraging of the university brand to bring in investors and leads to networking capabilities increased locally and internationally.
P04	Human capital can be used to write proposals and collaborate with the industry for funding purposes. Use finances to increase investment in infrastructure such as PPP for the increase in production of Neudamn Farm.
P05	An innovation center has been established to coordinate all innovation and implement viable research outcomes.
P06	There is a mismatch between the sectors and the academia that is purely caused by irresponsible miscommunication. This miscommunication then leads to the drop in confidence of either group, which affects their purpose.

4.3.5 Benefits of being an Entrepreneurial University

Question: What benefits would your university derive from becoming an entrepreneurial university?

P01 indicates that there will be self- reliance in terms of funds. The university will increase its capacity building enabling it to attract suitable personnel.

P02 states that the university will become sustainable in terms of reducing its reliance on Government subsidy by 95%. The university will then be engaged in extensive research that will be innovated into tangible products for commercial purposes.

P03 explains that the university will gain extra resources by increasing its income streams. There will be improved revenue generation due to a shortfall of close to 40% in Government funding that will be minimized.

P04 states the university will increase its money generation activities such as grant research and improve its organizational structure. Imparting of skills & knowledge in different sectors through collaboration and internships provision for Vocational Educational Graduates.

P05 states there will be less dependency on the state for funding. The university will be able to engage in extensive research especially by sending staff to international universities. Additionally, qualified and competent personnel will be appointed and more income will be generated to improve academic programs.

P06 indicates that there will be self- reliance in terms of required finances for operation and ensured the sustainability of the university. The university will also be able to attract suitable and competent personnel leading to improved teaching and learning. *“There will be cost-cutting across the board and increased revenue for the university as investors are attracted to invest in various projects. The credibility of the university brand will increase due to pride from its internal and external community. Likewise, more research output will be produced as there are enough resources in terms of funding and this may improve the university’s international rankings”.*

4.3.6 SWOT Analysis

What could your institution’s strengths, weaknesses, opportunities, and threats are, participants stated as follow in the table below:

Table 9: SWOT Analysis for the university

Participants	Strengths	Weaknesses	Opportunities	Threats
P01	Human capital and asset base	Organizational structure and culture	National and international markets, Collaboration and cooperation with other universities, Cross border	Competition Resources in terms of finances Technology in terms of bandwidth

			teaching and learning (exchange program)	
P02	Policy framework in place and human capital	The slow pace of implementation and constrained finances	Collaboration and internships	Small market in terms of the country's population and competition
P03	Staff compliment, university brand and positioning in the regions	Focus on academic-only	Empowerment of the university-owned company	Prevailing economic situation, procurement bureaucracy, and competition
P04	Empower human resources and solve technical problems to reduce costs	None	Access to national and international institutions through collaborations	Competition by other universities
P05	Establish overseas centers such as CODEC in SADC Campus empowerment in the regions (decentralization)	Reactive	Desalination at Henties Bay,	Business failure of the Inceptus company Financial risks
P06	Product innovation,	Lack of resources mobilization	Partnerships and Co-operations Collaborations with international universities	Competition is increasing, substitutes in academic programs

Source: Researcher's design

4.3.7 Entrepreneurial Culture

Question: To become an entrepreneurial university, an integrated entrepreneurial culture need to be cultivated at the institution. What could be part of this culture and how can it be reinforced?

P01 mentions that the entrepreneurship program should be integrated into the university curriculum by revisiting the organizational structure and developing support systems.

P02 said,

“I think part of this culture should be to sensitize the staff and students through activities that create a mind shift to avoid resistance to change. There is also a need to strengthen the urgency to have the process-driven. The culture should advocate stakeholders’ engagement and inclusivity so that they own the process and that various structures should be put in place to support the implementation”.

P03 said,

“The Vice-Chancellor introduced what is called an academic assembly as a platform to engage the university staff on strategic issues that affect the university and its sustainability such as the topic we are discussing now”. The Vice-Chancellor also came up with an open line encouraging staff to always air their view and opinions freely to his office without any fear of victimization and prejudice.

P04 indicates that setting goals and incentives for those contributing towards innovation through research and to hold constant dialogues within faculties to get buy-in.

P05 says creating awareness among the institution’s staff and students alike so that there can be buy-in into the concept. This would eventually reduce resistance towards change by some university staff.

P06 concluded saying-developing policies to encourage good ethics that instill a culture of innovation should be part of this culture.

4.3.8 Public Responses on budget cut to the university

Question: Now that HEI in the country faces a reduced budget allocation from Government, what public responses have yielded positive entrepreneurial activities for the institution?

P01 states that not that he is aware of however, the university must be proactive to stimulate mechanisms to avert the situation.

P02 mentions the university management made a call to all staff to work hard to bring in initiatives and projects to supplement the government subsidy. He added that the university plans to introduce the “Grant Writing Skills” for staff who apply for research grants based on the number of research approved for grants.

P03 indicates;

“I am not in a better position to give a good answer as the university foundation drives all financial aspects of the university and deals with donor funding. They will be in a better position to provide clarity on that, however, I know the alumni concentration would have been of assistance if there was proper coordination”.

P04 reveals that there was indeed work towards the financial stability where the university staff sourced funding from the private sector especially at the MRC through research papers that could garner support such as the Malaria project in conjunction with the United State of America.

P05 states,

“I am not at all aware of any local responses but there was donor funding from the German Government that funded the school of Engineering with an amount around N\$60m. I am also aware that the School of Medicine received although not in monetary terms, equipment for health sciences. The University Foundation Centre and the Founding Father of the Republic of Namibia, His Excellency Dr. Sem Shafiishuna Nuuyoma, organized a fundraising event for the university in Swakopmund where an amount of money was raised. I do not know how much it was at this point”.

P06 said I am not aware of any responses from the public.

4.3.9 Public and Private Sector Buy-in

Question: To what extent do you think the public and private sector are ready to give a buy-in for the university to become an entrepreneurial university? Justify your answer.

P01 pointed out that, the public and private sector will give a buy-in, as there will now be good finance planning at the university. It is also due to economic woes that affect the implementation of most partnerships and co-operations between the university and the sector.

P02 highlighted largely however more education awareness should be done to ensure that there is value to be derived.

P03 stated largely because the public and private sector can now have trust in the university which have capabilities and standing on its own and there would be increased mutual beneficial relationship.

P04 indicated that most of them will do on the basis it meets their interest. It is also because the university will now have an aligned agenda towards the needs of the industry and close the gap that existed.

P05 pointed out that the sectors will very much have a buy-in as the University Foundation Centre suggests UNAM name all infrastructure in the

P06 stated largely because they have an interest in the university's activities and graduates to accommodate on the job market.

4.3.10 Participants' Contribution

Question: How could you potentially contribute towards the actualisation of their university becoming an entrepreneurial university as a staff member within the institution?

P01 indicated to develop programs responsive to the 4IR, ensure quality assurance mechanisms are implemented in an integrative manner and theory is applied effectively as well as incorporate work-integrated learning into various university programs.

P02 explained that being part of the university projects together with the UCCB, collective work will continue and that initiation of some projects at CEQUAM that are entrepreneurial oriented.

P03 said taking courses in innovation and system thinking as a unit and adding value to the university projects through the project management aspect.

P04 highlighted that being a management member, he is involved in planning and decision making in terms of policy that guides them towards becoming entrepreneurial. Also by ensuring that execution and evaluation are being achieved and accounted for. Contribution in terms of research and mainstream entrepreneurial aspects in all research projects.

P05 stated that soliciting money for UNAM to reach the objectives of the institution and looking for external opportunities to be exploited by the university in terms of research.

P06 indicated that as an entrepreneurship lecturer, I am in a better position to advise management through our meetings of how better we can implement entrepreneurial opportunities for the university.

4.3.11 Entrepreneurial opportunities exploitation

Question: What do you recommend your institution should do to exploit entrepreneurial opportunities? Could you identify any further entrepreneurial opportunities that your institution could potentially capitalize on?

P01 specifically recommends the university should improve its training facilities and equipment to be on par with the 4IR. He also recommends that UNAM put its capacity to good use such as land and various infrastructure on its campuses around the country. UNAM should also ensure that research reports are translated into innovation and business ideas.

P02 recommends that the university should utilize its asset base and commercialize its infrastructure for revenue generation. UNAM should also scale up its production at various farms within its two campuses (Ogongo and Neudamm) and find a spot for their products in the market.

P03 recommends that the university use their two farms at the Neudamm and Ogongo campus respectively to produce milk, meat, and yogurt on a large scale, have it branded, packaged and appear on the shelves of several local shops in the country. In the same vein, he recommends that the university start a mineral water bottling from the aquifer at SANUMARC in Henties Bay for commercial purposes.

P04 recommends that the university do a situational analysis to implement the ideas, identify existing policies, laws, and see if they are still relevant and conducive. He further recommends that UNAM engage stakeholders, partners and all groups involved and having an interest in their operations. He also highlighted gender mainstreaming about not only the numbers but the overall impact.

P05 recommends that the university should conduct studies regularly and be proactive in its decision-making. UNAM should also put money aside to research poverty, teenage pregnancy, and gender-based violence as the highlights of everyday news.

P06 recommends that extensive research is essential to create a culture and theme around students. He also recommends for the university to have a culture of community engagement, create rooms for improvement, and find its purpose.

SECTION B: ANALYSIS OF PRESENTATION

The study used thematic analysis as explained in chapter 3 to analyze the data collected from both document reviews and interviews. Similar answers from participants were coded with the same color, where after categorized to create sub-themes and eventually themes. The discussion of results in the following chapter is done based on the themes generated from the semi-structured interview and supported by literature and theoretical frameworks in chapter 2 of this study. The section first analyzed data from the document review.

4.4. Analysis of presentation of document review

Table 10: Themes emanating from document review

Codes	Sub-themes	Themes
Campus establishment Expansion of existing campuses Equipment boosting Donation of satellite data equipment	Infrastructure development Teaching and learning resources	Creation of a conducive environment
Commercialization Process flow for incubation	Innovation and product development	Research outputs should be translated into innovation for commercialization
Collaborations Memorandum of Understanding	Agreements entered into with national and international organization	Impact of collaboration and partnership in a university
System upgrade Video conference Wireless internet connection	Technological advancement at the university	Technology know-how simplify work
Staff development	Enhanced skills and expertise	An institution is viewed in terms of its human capital's skills and expertise

Subsidies Capital grants Meal fees Hostel and tuition fees	Income streams for the university	Revenue generation is the fundamental part of an organization
Appointments Election	Increased recruitment	Investment in human capital on the increase

4.5 Analysis of Presentation from the semi-structured interview

Table 11: Themes emanating from the semi-structured interview

Codes	Sub-themes	Themes
The concept of the 21 st century and 4IR Transformation of the university into the TSA Strategic Plan developed for 2022-2024 focusing on research and innovation	Entrepreneurial vision and mission	Research and innovation are on the priority list of entrepreneurial mission
Positioning its presence throughout the country Properties in its custody such as land and infrastructure Student pool in terms of the number of students admitted per year	Internal Capabilities	Internal capabilities enable entrepreneurial mission and vision to be realized
Identification of priority areas to focus on Revisiting of the structure so that it becomes relevant and respond to current needs	How an institution stand out in the industry	Sustainable Competitive Advantage as dependent on internal capabilities
Develop asset base		

Collaborate on research with the industry Present research findings to national and international markets to attract investors Leverage the university brand	Positioning in the external environment	The exploitation of external opportunities is of critical importance in the transformation
Self-reliance in terms of funds Increase of income stream Increase in the credibility of the university brand	Reaping of great rewards	Benefits of entrepreneurial activities to the university
Increase in competition Product innovation The regulatory framework in place	Analyze the business environment	Scanning of the business environment
Revisit organizational culture Develop support systems Staff sensitization mechanisms Develop policies to encourage good ethics	Entrepreneurial culture enhanced	Integrated entrepreneurial culture as an integral part of the transformation
Donor funding Fundraising event	The public response towards university needs	Assistance necessary to bridge the gap in budget allocation
Implementation of partnerships and cooperation Aligned agenda towards the needs of the industry Interests in university activities	Stakeholder engagement	Importance of buy-in from the public and private sector
Develop programs responsive to the 4IR Initiate projects that are entrepreneurial oriented Planning and decision-making in terms of policies	Individual contribution making an impact	Contribution of staff in transforming the university is valuable

Mainstreaming entrepreneurial aspects in all research projects		
Training opportunities Utilize all asset base and commercialize Conduct studies regularly and be pro-active in decision making Stakeholders engagement	Commercialization of activities	Ways to exploit entrepreneurial opportunities

4.4 Conclusion

The Chapter presented raw data from the documents review and semi-structured interview. The chapter further provided an analysis of the data through a thematic analysis where similar answers were coded with the same color. The data were categorized into sub-themes and then combined into themes. The discussion of the analysed data based on the themes generated follows in the next chapter.

CHAPTER 5: DISCUSSION OF FINDINGS

5.1 Introduction

This chapter discusses the findings of document review and semi-structured interviews based on the themes that emanated. To substantiate the findings, literature and theoretical frameworks supported the themes.

5.2 DISCUSSION OF FINDINGS FROM DOCUMENT REVIEW

5.2.1 Creation of a conducive environment

The study found that there has been infrastructure development in the university including among other expansion of existing campuses and establishing new ones. This was to increase the university capacity as the number of enrolments has been on the increase. In terms of establishing new campuses, it is to ensure the university's presence all around the country providing access to education in the regions. The findings of the study further revealed that the university through a PPP established an accommodation facility at the main campus. This was necessitated by the need for student accommodation and long distances traveled to campus from areas considered not conducive enough for students to study. In support of the findings, Tjiremba and Haufiku (2017) indicate that additional accommodation was necessary, however, the university did not have adequate finances and hence the PPP arrangement.

The study also established that the university received donations of equipment and materials to aid teaching and learning. The equipment ranges from laboratory to satellite data. As technology is forever changing, the university needed to be on par with the latest development and continue imparting knowledge and skills relevant to response to current trends. UNAM made quite significant progress in its infrastructure developed not only in terms of buildings but also in terms of equipment required for research and classroom teaching and learning.

5.2.2 Research outputs should be translated into innovation for commercialization

The finding of the study revealed that the university has taken a great step in handling research outputs and outcomes. Instead of these outputs and outcomes put aside to gather dust, the university established a Centre for Innovation and Development (CID) to drive innovation and stimulate development start-up using research outputs and outcomes. This means that all research outputs should be innovated in any of the priority areas as outlined in chapter 4. This will enable the university to implement some if not all research outputs. This finding is in line

with what Huffman and Quigley (2002) states that Stanford University's success came because facilities and equipment such as industrial park on university-owned land to facilitate business co-location and enhance knowledge sharing and diffusion, which firms could access, were established and that knowledge is transferred across the industry according to Gibb et al., (2013).

The findings further established that the university has proposed a commercialization process to guide the promotion of an innovation culture and fulfill its vision and mandate as indicated in the Annual report (2016). This will enable the university to champion the transformation of research and innovation into economically viable knowledge and services.

Another finding shown by the study is the formation of a university commercial holding company called Inceptus. This company was established to serve as a trading body for the commercialization of the university's intellectual property, assets and business ventures (New Era, 2018). It is believed that the entity will significantly contribute to the financial sustainability of the university and reduce further dependence on the state. The above findings correlate with a suggestion made by Powell (2012) that universities need to start engaging with SMEs to help drive innovation and create sustainable growth.

5.2.3 Impact of collaboration and partnership in a university

In terms of collaboration and partnerships, the findings of the study indicate that the university has established quite several collaborations in a variety of fields with various institutions national and international. The annual report (2013) supported the above stating that collaborations and partnerships allow universities to exchange students and research among each other, organize joint conferences and enable staff to move between them.

In some of these collaborations, Memorandum of Understanding signed saw particular programs nationally and internationally being funded, while the university staff sent for training to other universities abroad.

The findings above are supported by an explanation by Blenker et al. (2006) that when Stanford University found itself in a difficult financial situation, the then Rector Frederick Terman started collaborating at a higher level with the business community to source money for fundamental research and similar activities.

Therefore, collaborating and partnering with international organizations allows the university to explore international best practices enabling them to be on par with international standards.

This became evident after Europe-Africa Quality Connect conducted an external audit of the entire university as reports reveal. The international collaboration, in particular, allows the university to organize conferences jointly with international universities, partake in students' exchange programs as well as research.

5.2.4 Technology capacity simplify work

The findings of the study indicate that the university is not at all left behind in terms of technological advancement. It was established that the university installed a state of the art video conference facility in another country (Kenya) to enable lecturers well vested in Agriculture to teach without traveling to Namibia. The move is believed to reduce the cost incurred by the university to fly lecturers into Namibia for practical lessons.

The study also found that to increase the quality of the university's information management system, the university library upgraded its library management system, an upgrade from an old system called the Millennium system to a more robust system known as Sierra. Also, the university was found to have invested and installed wireless internet connection at all its campuses nationwide. Students are now empowered to take ownership of their learning through advanced search engines for relevant information about their studies. The findings agree to what Lall (1992) and Bell and Pavitt (1995) states to encourage universities to invest in technology as technological capabilities through which innovation is achieved makes an institution successful and its survival recognized. Zawislaket.al (2013) expands the above by saying that innovation being contemplated by an institution should be in the long term ability to create sustainable competitive advantage.

5.2.5 An institution is viewed in terms of its human capital's skills and expertise

The findings of the study show that UNAM has developed quite many staff members from its staff development program. The Masters's degrees and Doctorates topped the list of programs undertaken throughout the staff development. It is beneficial and a good initiative for the university to provide its staff with opportunities to improve and develop themselves and their careers. This finding is in line with what Barney and Clarke (2007) explain that human capital focuses attention on the knowledge and skills, which individuals contribute to competitive advantage. To share the same sentiments, Alvarez and Basinets (2001) argue that entrepreneurial opportunities emerge when certain individuals have insights into the value of these resources that others do not.

5.2.6 Revenue generation is the fundamental part of an organization

In terms of revenue generation for the university, the results indicate that on top of the Government subsidy, the university generates revenue from other sources such as tuition, hostel, and meal fees. It was also established that there is a capital grant to the university and other income. However, the other income is not broken down into what it is comprised and from which sources.

The findings further revealed that the university has experienced a deficit during the three out of four years reviewed. The deficit was about the amount of subsidy from the state and the expenditure of the university. Although the subsidy has increased over the four years, the expenditure of which the largest is personnel and related costs kept increasing far beyond the available revenue. On top of the above, the study found that the university is also funded through other initiatives such as the financial commitment from De Beers Group made to specifically fund the Southern Campus.

The university is really in need of funds if it is to remain in business and achieve its vision as earlier narrated on in previous sections. The findings shown in the table are enough reasons for UNAM to become entrepreneurial because according to Blenker et al. (2006), they were the same reasons that Stanford University became an entrepreneurial university. The latter was necessitated by the difficult financial situation that the university found itself in.

5.2.7 Investment in human capital on the increase

Concerning investment in human capital, the study shows that the number of people employed has increased due to an increase in the number of students' intake. In addition to that, the university has also appointed some of its staff to serve in other bodies such as the International Union of Geological Sciences- Commission on Geoscience for Environmental Management and Association for German Studies in Southern Africa respectively. However, human capital in terms of skills and expertise does not work independently but needs other resources at their disposal to make a meaningful contribution out of their efforts such as infrastructure in terms of classrooms, offices and capital equipment as Spring (1991) emphasizes. Hence, the presence of several campuses and centers, teaching and learning materials at the university such as books, computers, and others.

5.2.8 UNAM Strategic Plan 2019-2024

The results of the study, in conclusion, revealed that the university developed a new strategic plan for the next six years. It is in the strategic plan where a new mission statement and vision for the university incorporating entrepreneurial aspects are crafted.

However, due to the rapid changes in the global Higher Education setting in response to the Fourth Industrial Revolution (4IR) and the National Basic Education reform, UNAM is preparing for a fourth major curriculum transformation (Draft Curriculum Transformation Framework, 2019). The 4th Industrial Revolution, according to Schwab (2016) is a digital revolution characterized by a combination of technologies that is distorting the lines between the physical, digital, and organic domains. It is on this basis that UNAM developed a new mission statement and vision in response to the 4IR by developing a cohesive digital learning and teaching strategy that would support and develop the 21-century digital-oriented skills and knowledge (Draft Curriculum Transformation Framework, 2019).

5.3 DISCUSSION OF FINDINGS FROM SEMI-STRUCTURED INTERVIEW

5.3.1 Research and innovation on the priority list of entrepreneurial mission

The findings of this study show that participants have an understanding and are well informed of the mission statement and vision of the university. Participants are also aware of an entrepreneurial mission and vision that the university is undertaking. It could be concluded that there is a proper engagement of the staff and effective communication of what the university intends to do. These findings on the new mission statement and vision are in line with what Moed (2006) reports in his study that to achieve economic development universities have become foreseeable to fundamental changes and reforms in mission, structure, process, and culture.

P06 had this to say:

“The current mission statement and vision does not include an entrepreneurial vision, however, as part of the transformation that the university is going through, a new mission statement and vision was developed in line with the 21st Century and 4IR. This is an initiative of the new Vice-Chancellor”.

This finding is in line with what Zawislak et. al (2013) indicates that innovation should not be left out and that it can be recognized as implanted in different capabilities such as the ability to understand, adjust and alter a given technology into specific managerial, operational and transactional routines that can lead s firm to achieve maximized profits.

It can be argued that participants did not only indicate the non-inclusion of entrepreneurial activities in the old mission and vision and its inclusion in the new one but went as further as explaining how or what informed the development of the new mission statement and vision.

P02 revealed that *the university developed a new Strategic Plan for 2019 – 2024 where the focus is on research, innovation, and development, while;*

P03 further stated that *the new mission statement and vision were necessitated by the new direction and vision of the current Vice-Chancellor that of research and innovation.* The finding is linking to what Alvarez and Busenitz (2001) indicate that the success of the transformation to entrepreneurial university comes with the governance issue, emphasizing that hierarchical governance is suitable to realize the economic value associated with an entrepreneurial opportunity.

5.3.2 Internal capabilities enable entrepreneurial mission and vision to be realized

Responding to the question of internal capabilities, participants, however, had different views and understand internal capabilities. With different views, they, however, had something in common that of mentioning human resources and assets such as land as the top of the list of internal capabilities. Infrastructure and finances came in second. However, different views indicated positioning of the university in terms of its presence throughout the country, the student pool and the knowledge of its academia as internal capabilities.

5.3.3 Sustainable Competitive Advantage as dependent on internal capabilities

In terms of how internal capabilities can be used to gain competitive advantage, the study revealed that participants understood what SCA means and how it can be achieved using internal capabilities. One of the standing out the answer was that of P01 as shown below;

“In terms of human resources, the university needs to revisit its structure so that it becomes more relevant and responsive to current needs. The university has plenty of lands available on its various campuses throughout the country that could be developed into good use such as property rentals for private businesses. Wernerfelt (1984) supports the above by saying that, the firms’ human resources are one of its internal resources that can be a source of sustained competitive advantage.

P01 continued to say, *“Look! We also have the Neudamm Agricultural Campus 38km outside Windhoek providing training to our students in crops and animal rearing as well as in*

veterinary studies. Under this campus, the university owns two farms. As we speak, the campus process meat, make yogurt and produce milk but on a small scale and currently sold to the university staff and students. The university should also utilize the available funding although not enough to fund various researches however, ensuring that research outcome is implemented into viable businesses with tangible products or services". This is the strategy that Barney (1991) in the literature indicates that to have a sustained competitive advantage, an institution should implement a value-creating strategy not being implemented by any current or potential competitors.

Apart from the above findings in terms of human resources and assets, the study also revealed the existence of an aquifer at the Sam Nuuyoma Marine and Coastal Research Centre (SANUMARC) at Henties Bay. This according to P03 creates an opportunity for the university to source, bottle, and brand and then sell to different supermarkets and campuses throughout the country. This is one area of revenue generation for the university which other universities are unable to imitate because of the unavailability of the resources to them to tap.

The study further revealed other options to be considered when there is less fund available to develop infrastructure. This is what P05 explained, *"the university's asset base such as land could be developed through the Public-Private Partnership (PPP), and a good example is the Emona accommodation facilities at the main campus in Windhoek developed by the university and private businesses. The accommodation facilities are under the management of the private entity for six years to recover their capital invested and only then it can be handed over to the university"*. Additional accommodation was necessary according to Tjiremba and Haufiku (2017), however, the university could not do that alone due to financial difficulties and hence the PPP route. This according to the annual reports, led to improved relations with the corporate sector as supported by literature through Etzkowitz, (2003) who stated that universities are encouraged by government policies to harvest funds from the private sector.

On the contrary, some participants had other ideas apart from assets development and human resources on how the internal capabilities could be applied to create a sustainable competitive advantage. The indication in literature by Helfat and Peteraf (2003: 997) that it is difficult to fully explain how firms use resources and capabilities to create a competitive advantage is linked to the findings of the study that revealed that UNAM is not focused and need to identify key priority areas to concentrate on and move forward. This is because the university is still in the traditional realm and needs to redirect their efforts to activities framed to help it thrive such

as more research and encourage implementation of those research outcomes as per P02's answer.

5.3.4 Exploitation of external opportunities is of critical importance in the transformation

From the responses provided, it is clear that the university should do more with research findings and outcomes as one way to influence external opportunities for the exploitation by the university. The study shows that if research outcomes are presented to both the national and international markets, it would attract potential investors willing to enter into partnerships and collaborations with the university. Participants stressed the issue of collaboration on research as it can lead to research outcomes easily implementable. The latter was supported by a study Hu's (2009) conducted that states when Taiwanese universities became entrepreneurial; their culture affected many academic collaborations, granted patents, technology licensing revenue and incubators.

The university can also use its asset base as guarantees to develop them and commercialize their outputs for revenue generation. A study by Gibb et al., (2013) supports the findings by revealing that an entrepreneurial institution becomes successful when its facilities and equipment such as industrial park on university-owned land to facilitate business co-location and enhance knowledge sharing and diffusion, which firms could access, are established and that knowledge is transferred across the industry. The above was the case with Stanford University when it found itself in a difficult financial situation as Huffman and Quigley (2002) state. He further explained that the human resource capacity can engage in further researcher on a strategic niche market that can be transformed into a viable business. He concluded that a performance-based management system should be put in place to ensure research findings implementation.

5.3.5 Benefits of entrepreneurial activities to the university

The findings of the study revealed that self – reliance is one of the benefits highly sought after by the participants. Participants believe that once the university becomes entrepreneurial, there will be an increase in revenue generation thereby reducing Government budget allocation cut not to have major implications on the university's operations. Self-reliance will also create opportunities for stakeholders to increase their trust in the university and enable them to collaborate more and increase their partnerships. The findings correlate with the reasons of becoming entrepreneurial university given by Gibb (2012) that, university become entrepreneurial to address the needs of its environment, and contribute to regional and national

economic development as well as to improve its financial situation and the position of its employees. Etzkowitz et al., (2000) supports the latter by indicating that institutions were unable to recruit qualified personnel due to inadequate state funding allocated to them. Notwithstanding the above, the study found the credibility of the university brand to increase from the pride of its internal and external community.

It will, however, be a long road towards the realization of this, since more work needs to be done such as the restructuring of the organization, development of the entrepreneurial culture and re-focusing attention to research and asset base development as indicated earlier.

5.3.6 Scanning of the business environment

In terms of the university's strengths, weaknesses, opportunities and threats, the results of the study revealed that human capital and asset base topped the list of strengths. This is because as indicated in discussions preceding this one, the same strength also was the internal capabilities identified for the university. The study showed that participants were more concerned with the organizational structure and culture, slow pace of implementation and constrained finances as weaknesses. Moreover, the study revealed that competition from other universities in terms of affordable fees and varied academic progress as a threat. More universities are being established in Namibia threatening the existence and survival of the old and only pioneer institutions the country has had since Independence. These universities start as colleges and institutes and then grow large due to expansion and increased enrolment. Another threat the study found is the current prevailing economic situation. This is what made it difficult for the university to receive its full funding from the Government due to less revenue collection. It led to negative implications on the university's operations, making it almost impossible to cope with its daily needs and requirements.

Apart from the weaknesses and threats mentioned above, the results of the study also revealed that the university has quite some opportunities to explore and exploit so that it gains competitive advantages against competitors. One opportunity that participants emphasized is the collaboration and co-operation with other universities in the region and internationally. This is believed to be one way of benchmarking and learning best practices from others so that the university is on par with international trends. The above findings are in line with what DAS (2000) proposes, that institutions should find a balance between their internal characteristics (strengths and weaknesses) and their external environment (opportunities and threats). This was also supported by literature when Foss and Knudsen (2003) states that talks about creating

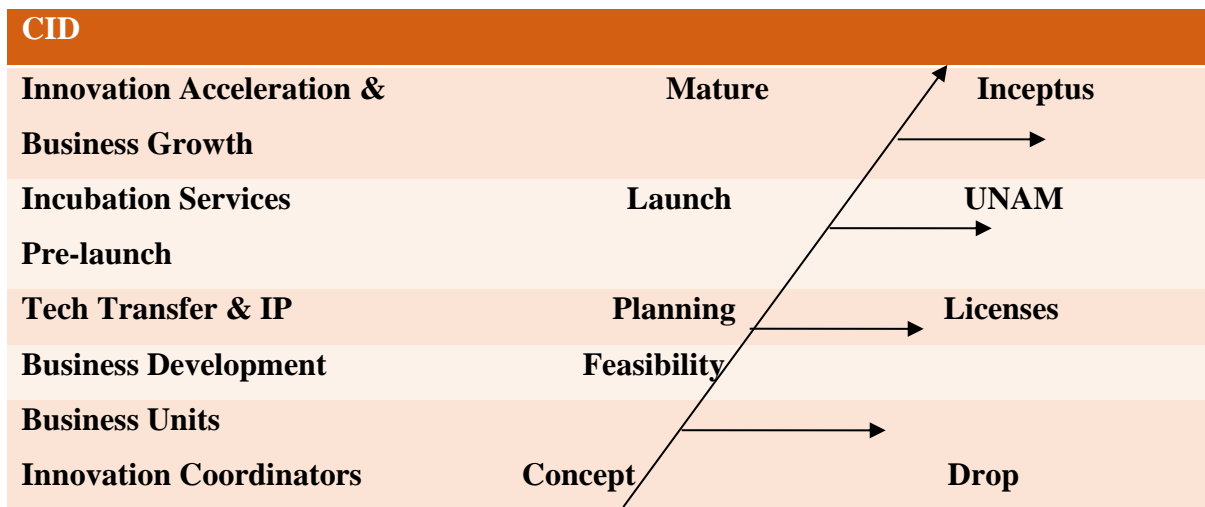
value in terms of taking advantage of an opportunity or counteract a threat in the environment may help understand the measure of value in itself.

5.3.7 Integrated entrepreneurial culture as an integral part of the transformation

The findings of this study revealed that participants had different views in terms of the integrated entrepreneurial culture. P02 explained in detail by saying “*I think part of this culture should be to sensitize the staff and students through activities that create a mind shift to avoid resistance to change. There is also a need to strengthen the urgency to have the process-driven. The culture should advocate stakeholders’ engagement and inclusivity so that they own the process and that various structures should be put in place to support the implementation*”. Literature supports the above findings when van Ginkel (2002) said that, when the paradigm of entrepreneurial university started to emerge, universities were led to changing their strategies, structures, and own individual culture.

It further revealed that participants understood the concept and knew exactly what needs to be done to assist in the transformation process. One of the catalysts of becoming an entrepreneurial university is to cultivate an entrepreneurial culture which Hanny et al. (2011) identify in his study as one of the seven key strategies for universities that are becoming entrepreneurial. The other six key strategies are having a flexible structure, continuous interaction with the environment, creating a shared vision, providential strategy and lastly paying attention to human resources (staff) and management support. On this basis, the University has proposed a commercialization process as guidance in the promotion of an innovation culture for the University to fulfill its vision and mandate (Annual Report, 2016). This will enable the University to champion the transformation of research and innovation outputs into economically viable knowledge and services. Following below is the commercialisation process towards the promotion of an innovation culture at the University:

Figure 7: UNAM Commercialisation Process



Annual Report (2016)

The Commercialisation process shows exactly what will happen to innovation in the form of a business idea up until its maturity and ready to hit the market. One can see that UNAM takes over the innovation at the launch in their incubation Services and then to accelerate the innovation and grow it, it is passed on to the Inceptus to implement. Inceptus is a UNAM commercial owned holding company established to serve as a trading body for the commercialization of UNAM intellectual property, assets and business ventures (New Era, 2018). This entity should significantly contribute to the financial sustainability of UNAM and reduce dependence on the state.

5.3.8 Assistance necessary to bridge the gap in budget allocation

The responses from the participants indicated that there is not much assistance that has been recorded from the public when the university budget was cut. Some participants interviewed also did not have information on whether and how the public responded if any. However, some forms of donor funding were received as P05 states below:

“I am not at all aware of any local responses but there was donor funding from the German Government that funded the school of Engineering with an amount around N\$60m. I am also aware that the School of Medicine received although not in monetary terms, equipment for health sciences. The University Foundation and the Founding Father of the Republic of Namibia, His Excellency Dr. Sem Shafiishuna Nuuyoma, organized a fundraising event for the university in Swakopmund where an amount of money was raised. I do not know how much it was at this point”.

The donor funding from the German Government of N\$60m was an immense assistance towards the university. It has bridged the gap in finances for the university to be able to pursue its activities at the school of Engineering. This type of assistance is usually made possible by Government-to-Government cooperation in the form of a Memorandum of Understanding where the recipient usually indicates areas in which they require assistance.

Assistance can be provided in whatever form possible and it does not necessarily have to be in monetary terms. The provision of equipment for the health sciences is another appreciable gesture that could have not to be attained within the state budget cuts the university found itself.

5.3.9 Importance of buy-in from the public and private sector

The study revealed that there will be a buy-in from the public and private sectors. This is because the university will now be in a better position to align its agenda towards the needs of the industry and that will increase the relationship between the university and the industry. The sector is ready to support institutions that are driven towards responding to current trends especially that of the 21st century and 4IR. This finding is in line with Guenther and Wagner (2008) who states that universities can establish associations with industry sectors by setting up university spin-offs, generating research contracts and providing consultancy services to generate additional revenue to aid their day-to-day operations. The consultancy services at the university fall under the UCCB which is mandated to engage academic and administrative staff of the university as well as individual private consultants with relevant skills, in consultancy work to support the implementation of projects so that revenue can be generated (Annual report, 2013). This will be in terms of skilled and competent graduates to be absorbed by the industry. The university foundation has also proposed to name the university infrastructure to certain CEOs or companies' names to develop a mutually beneficial relationship.

5.3.10 Contribution of staff in transforming the university is valuable

The findings of the study indicate that participants are ready to contribute towards the transformation of the university to become entrepreneurial. It is good that participants are well aware of their position and in what way they can contribute as this is one way to change resistance and increase support towards the initiative. That was indicated by P04 that:

“being a management member, he is well-positioned to be part and parcel of the university planning process in terms of policy development, ensure that execution and evaluation of projects are being achieved and accounted for. He concluded that the additional contribution

will be to mainstream the entrepreneurial aspect in all research projects to make it easy to innovate". That shows exactly the type of positivity and mind-set needed for change to occur at an institutional level.

5.3.11 Ways to exploit entrepreneurial opportunities

The study revealed that since the university owns two farms at its Neudamn campus, participants recommended that the farms are utilized to produce on a large scale, brand its products, do packaging and market it to different shops instead of the current practice of selling only to the university staff and students. This will generate revenue from the sale of all products and contribute to the university's self-reliance. The study also showed that participants recommended that the university start a mineral water bottling from the aquifer at SANUMARC in Henties Bay. These are all entrepreneurial activities which once exploited would make a meaningful contribution to the university's sustainability. This in itself will be great opportunities for the university as literature also indicated that university transformation and expansion may be accompanied by diversification when they operate as commercial entities targeting to maintain and intensify their position in the market (Williams and Kitaev, 2005).

5.4 Conclusion

The chapter discussed the findings from documents reviewed and semi-structured interviews. The findings were discussed based on the themes that emanated from the data analysis in chapter 4. Lastly, the discussions were supported by literature as highlighted in chapter 2.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents a concluding summary of the study based on the three research objectives the study aims to achieve, the conclusion and key research contributions. Furthermore, the chapter provides recommendations of the study and recommendations for further research. Lastly, the chapter then provides a conclusion.

6.2 Summary of the study

The study aimed to explore whether UNAM has opportunities for being an entrepreneurial university. The study attempted to provide answers to the objectives stated below to achieve the main goal of the study.

- determining the internal capabilities and opportunities for UNAM
- assessing how internal capabilities are applied to gain a sustainable competitive advantage by creating opportunities for UNAM.
- recommending how UNAM can use internal capabilities to exploit entrepreneurial opportunities.

The study was embedded in the interpretivists paradigm and followed an inductive approach. The study had a population of 14 Centres at UNAM where a sample of 4 Centres was purposively selected to represent the population because they were responsible for research and entrepreneurship activities. Documents review and semi-structured interviews were used to collect secondary and primary data respectively, which helped in the triangulation to avoid data error. These methods also allowed the researcher to ensure credibility, transferability, trustworthiness and external validity. To adhere to all ethical regulations and procedures, the researcher obtained the ethics approval from the Rhodes Ethics Committee which, was then used to obtain Gatekeeper permission from UNAM.

Therefore, the summary of the study is on the basis and following those objectives. Each objective is then discussed separately what the study has established to achieve it.

- On determining the internal capabilities and opportunities for UNAM.

The study found that the annual reports had quite comprehensive information regarding the internal capabilities and provided in detail what has happened to each of the internal capabilities under each outlined aspect. Participants interviewed also knew and understood what the internal capabilities and opportunities were for the university. However, it was noticed that their focus was merely on human capital and asset base in terms of land. This excluded others such as capital equipment. There was not much content in the annual reports concerning technology neither did any of the participants interviewed make reference to it.

The study, however, found that human resources are a critical component of the university in terms of knowledge and skills required for performance. This was evident from the number of university staff developed within four years.

The study also shows that the university increased its income stream and reduced its over-reliance on Government for funding by collaborating and partnering with international, private organizations and governments such as GIZ, Finnish Government. Thus enabled the university to acquire resources, improve the quality of education and increases the number of research outputs conducted by the university staff as funds are available from other sources.

- On assessing how internal capabilities are applied to gain a sustainable competitive advantage by creating opportunities for UNAM.

The study found that there is sufficient planning and strategizing for UNAM to embark on to gain a sustainable competitive advantage. The study also found that UNAM is on par with the widespread call for research and innovation and that it embraces the issues of the 21st century and 4IR. This is about the utilization of its human capital by tapping into their knowledge and expertise through extensive research.

Inceptus as a holding company does business on UNAM's behalf can help commercialize research that has been innovated through the Centre for Innovation and Development and once viable then handed to Inceptus to develop. UNAM is well resourced in terms of land at most of its campuses, which can be developed, into income-earning activities, and business development through UNAM's two farms. This includes its Neudamm campus where meat, milk, and yogurt produced on a small scale and upscaling production for agribusiness processing. Products can be packaged, marketed and sold in local shops to diversify UNAM's sources of funding.

The study also found that the SANUMARC in Henties Bay has an untapped aquifer and the university is planning to source the water from the aquifer, bottle it, the label it and then find its way on the shelves of local shops.

On the organizational itself, the study found UNAM staff not having cohesion and pride in their work and that there is a need for restructuring so that the structure is responsive to current needs and demands.

- On recommending how UNAM can use internal capabilities to exploit entrepreneurial opportunities.

The study found that UNAM can present its research outcomes to international organizations and universities to attract investors and partners for collaborations. The study also found that UNAM needs to engage all stakeholders and make them part of their planning and strategizing so that they become part and parcel of the whole process and transformation.

6.3 Key contributions

The study has contributed new insights and knowledge to the already existing body of knowledge regarding entrepreneurial university.

Implications to management

The study enhanced the understanding of the management of the institution further on the concept so that they can apply it in policy formulation that will see the implementation of entrepreneurial activities in the institution. Management should, however, collectively work with stakeholders to ensure that the transformation yields long-awaited results to the university in collaboration with the industry. Issues pertinent to the university and the industry that could affect the long built relationship should be identified as early as possible and that corrective measures should be taken to solve them.

6.4 Limitations

The study only used UNAM, which is the oldest and largest university in the country. Also, only the main campus and four Centres were involved in this study. The research results would have been enhanced and strengthened if all campuses could have been part of this study. This is attributed to a lack of finances and a large sparsely geographical location that made it impossible to travel long distances to those campuses.

The study could no longer record the information provided by participants during the semi-structured interview. This is because the cost of procuring a recorder was very high and because of the financial challenge, it could no longer be used. This may have caused some gaps in information gathering and capturing which could have made a great contribution.

Another limitation was the non-consideration of leadership and governance issues in establishing whether the university can transform into an entrepreneurial university or not. The study only focused on internal capabilities in terms of technological, relational, physical, skills & expertise, funds availability and human capacity.

6.5 Recommendations

The following are some of the recommendations that UNAM should consider and prioritize:

1. Increase investment in assets and resource utilization

The study found that UNAM owns two farms the existing aquifer at SANUMARC in Henties Bay. The two farms are producing on a small scale at Neudamm, however, the water bottling from the aquifer has not yet started. The study found that UNAM has an un-utilized land at Otjiwarongo and Ogongo The study also found that UNAM through a PPP constructed an accommodation facility at the main campus in Windhoek. The study recommends that UNAM strategize and put up a feasible and viable business case to private investors so that through PPP it can develop those lands into more productive projects and decentralize its production and operation so that people from those regions can own them. The study also found that there is a lack of implementation of projects at the university, which inhibits its progress in terms of having access to finances when it is needed.

The study then recommends that UNAM speed up its processes to equip the Centre for Innovation and Development and fully utilize (Inceptus) its holding company in taking up these projects and scale up production. This will ensure that research outcomes are innovated and tangible products are produced.

2. Embark on public sensitization and stakeholder engagement

The study found that there is a mismatch between the sector and academia. This is because the public and private sectors seem not aware of what the university can offer and what opportunities it can exploit. This was purely caused by the miscommunication of both parties. The study then recommends that the university should develop platforms such as business

forums and awareness campaigns to put their message across in terms of their capabilities to the public and the sector. The university should further be inclusive in bringing the sectors on board so that they are consulted and own whatever process the university embark upon.

3. Contribution of academics through research

The study found that most of the university's academics are involved in research and at times secure research projects from the public or private sectors on their own. However, the income generated from these research projects is not shared between the university and the academics. The study, therefore, recommends that the university develop a policy that requires academics to secure research projects from the industry through an agreement between them (academics) and the university. The agreement should state how the income generated from such research projects is to be shared between the academics and the university. In support of this recommendation, Etkowitz (2004) in his model "Entrepreneurial University" refers to it as capitalization of knowledge classified as a formal factor.

6.6 Recommendations for further research

The study recommends that further research on the same topic be undertaken where participants are drawn from all campuses so that there could be a diverse pool of information. The study further recommends that future research in leadership and governance be considered to determine their impacts on university transformation and how they will assist universities in implementing successful strategies.

5.7 Conclusion

The chapter provided a summary of the research and research findings because of the research objectives from which the recommendations for research were derived. The contributions the research made to theory and implications to management were also presented. The chapter further highlighted the limitations which informed the recommendations for further research.

Notwithstanding that limitations, the research concludes that UNAM has opportunities of being entrepreneurial from the invaluable information gathered through document review and semi-structured interviews. This event is because the research has underscored the issues of extensive research, and the commercialization of the research outcome/output through a university-owned holding company. Also, the scaling up of production at the two university-owned farms, and the exploitation of the aquifer by bottling its water for commercial purposes

will make another stride in the university as an institution of higher learning. Another highlight is collaborations between the university and external organizations to strengthen capacity, secure funding for research and explore best practices in the industry.

REFERENCES

- Altbach, P.G., Reisberg, L and Rumbley, L.E.2009. Financing Higher Education. In Trends in Global Higher Education: Tracking an Academic Revolution. UNESCO 2009 World Conference on Higher Education, Paris.
- Alvarez, A. S., and Busenitz, W. L. 2001. The Entrepreneurship of Resource-Based Theory. *Journal of Management*, 27 pp. 755- 775
- Alvarez, S. A., and Barney, J. B. 2007. Discovery and creation: Alternative theories of entrepreneurial action. *Strategic entrepreneurship journal*, 1 (1-2), pp. 11-26.
- Angula, N., and Lewis, S. G. 1997. Promoting democratic processes in education decision making reflections from Namibia's first 5 years. *International Journal of Educational Development* 17(3), pp.222-249.
- Armstrong, C.E. and Shimizu, K. 2007. "A Review of Approaches to Empirical Research on the Resource-Based View of the Firm". *Journal of Management*, 33 (6), pp. 959-986.
- Atuahene-Gima, K. and Haiyang, L. 2004. Strategic decision comprehensiveness and new product development outcomes in new technology ventures. *Academy of Management Journal*, 47 (4), pp. 583–597.
- Banerjee, A and Chaudhury, S. 2010. Statistics without tears: Populations and samples. *Industrial Psychiatry Journal*, 19 (1) pp. 60–65.
- Barnes, T., Pashby, I., and Gibbons, A. 2002. "Effective university-industry interaction: a multi-case evaluation of collaborative R&D projects", *European Management Journal*, 20 (3), pp. 272-285.
- Barney, J. 1991. Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17 (1), pp. 99-120
- Barney, J. B., and Clark, D. N. 2007. *Resource-based theory: Creating and sustaining a competitive advantage*. New York: Oxford University Press.

Bell, M. and Pavitt, K. 1995. The development of technological capabilities. Trade, Technology and International Competitiveness. Economic Development Institute: Washington, D. C, World Bank.

Benneworth, P., and Charles, D. 2005. University spin-off policies and economic development in less successful regions. Learning from two decades of policy practice. *European Planning Studies*, 13 (4), pp. 537-557

Blenker P., Dreisler P., and Kjeldsen J. 2006. Entrepreneurship Education – the New Challenge Facing the Universities: A framework or understanding and development of entrepreneurial university communities. Department of Management, Aarhus School of Business, Denmark.

Bogdan, R. C., and Biklen, S. K. 2003. *Qualitative research for education: An introduction to theories and methods (4th ed.)*. Boston: Allyn & Bacon.

Bowen, G. A. 2009. Document analysis as a qualitative research method. *Qualitative Research Journal*, 9 (2) pp. 27- 40

Bowen, G. A. 2009. “Document analysis as a qualitative research method”, *Qualitative Research Journal*, 9 (2), pp. 27-40.

Bryman, A. 2012. *Social Research Methods (4th Edition)*. New York. Oxford University Press.

Bryman, A. and Bell, E. 2014. *Research Methodology: Business and Management Context (Adapted edition)*. Southern Africa: Oxford University Press.

Carson, D., Gilmore, A., Perry, C., and Gronhaug, K. 2001. *Qualitative Marketing Research*. London: Sage.

Churchill, W. 2014. Strategic Planning. *Scandinavian Journal of Public Health*, 42(14), pp. 106–112

Clark, B., 2001. The entrepreneurial university: New foundations for collegiality, autonomy, and achievement. *Higher Education Management*, 13(2).

Cohen, W.M. and Levinthal, D.A., 1990. Absorptive capacity: A new perspective on learning and innovation. *Administrative science quarterly*, pp.128-152.

Creswell, J. W. 2007. *Qualitative inquiry and research design: choosing among five approaches*. London: SAGE.

Das, T. K. 2000. A Resource-Based Theory of Strategic Alliances. *Journal of Management*, 26, (1), pp. 31–61

David, M. & Sutton C.D. 2004. *Social Research the Basics*. London: SAGE Publications.

Davis, J. D. 2017. "How HR can create a competitive advantage for the firm: Applying the principles of resource-based theory", *Human Resource Management International Digest*, 25 (2), pp.4-6.

Davis, P. J., 2017. "How HR can create a competitive advantage for the firm: Applying the principles of resource-based theory", *Human Resource Management International Digest*, 25 (2) pp.4-6

De Zilwa, D. 2005. "Using entrepreneurial activities as a means of survival: investigating the processes used by Australian universities to diversify their revenue streams", *Higher Education*, 50 (3), pp. 387-411

De Zilwa, D., 2005. Using entrepreneurial activities as a means of survival: Investigating the processes used by Australian universities to diversify their revenue streams. *Higher Education*, 50(3), pp.387-411.

Diener, E., and Crandall, R. 1978. *Ethics in Social and Behavioral Research*. Chicago: University of Chicago Press.

Doutriaux, J., and Barker, M. 1991. University and Industry in Canada: A Changing Relationship. *Industry and Higher Education Journal*, 10 (2), pp. 88-102

Etzkowitz, H. 2003. Research groups as 'quasi-firms': the invention of the entrepreneurial university. *Research Policy*, 32 (1) pp. 109-121

Etzkowitz, H. 2013. "Anatomy of the entrepreneurial university", *Social Science Information*, 52(3) pp. 486-511

Etzkowitz, H. and Zhou, C. 2008. "Introduction to the special issue – building the entrepreneurial university: a global perspective", *Science and Public Policy*, 8 (4), pp. 627-635.

Foss, N. J. 2008. "Entrepreneurship, subjectivism and the resource-based view: toward a new synthesis", *Strategic Entrepreneurship Journal*, 2 (1) pp. 73-94

Foss, N.J. and Knudsen, T. 2003. "The resource-based tangle: towards a sustainable explanation of competitive advantage," *Managerial and Decision Economics*, 24(4), pp. 291-307

Gale, N. K., Heath, G., Cameron, E., Rashid, S., and Redwood, S. 2013. *Using the framework method for the analysis of qualitative data in multi-disciplinary health research*. BMC Medical Research Methodology

Gibb, A. 2012. Exploring the synergistic potential in entrepreneurial university development: towards the building of a strategic framework, *Annals of Innovation and Entrepreneurship*, 3

Gibb, A.A. (2013), "Developing the Entrepreneurial University of the Future. Key Challenges, Opportunities and Responses", OECD, Paris.

Ginkel van H. 2002. What does Globalisation mean for Higher Education, Conference on Globalisation: What Issues are at Stake for Universities? Université Laval, Quebec City, Canada, September

Grant, R.M., 1996. Toward a knowledge-based theory of the firm. *Strategic management journal*, 17(S2), pp.109-122.

Gray, D. E. 2004. *Doing Research in the Real World*. London: SAGE Publications.

Green, S. 2008. *Business Research Method*. Dr. Sue Greener and Ventus Publishing ApS

Grinnell, Jr. R. M. and Unrau, Y. A. 2008. *Social work research and evaluation: Foundations of evidence-based practice*. New York: Oxford University Press

Guenther, J. and Wagner, K. 2008. Getting out of the ivory tower – new perspectives on the entrepreneurial university, *European Journal of International Management*, 2 (4), pp. 207 - 310

- Guerrero, M., and Urbano, D. 2012. The Development of an Entrepreneurial University. *Journal of Technology Transfer*, 37(1), pp.43-74.
- Hangula L., Matengu K.K., Likando G., Shanyanana R.N. 2018. Higher Education Systems and Institutions, Namibia. In: Teixeira P., Shin J. (eds) *Encyclopedia of International Higher Education Systems and Institutions*. Springer, Dordrecht
- Hannon, D. P. 2013. Why is the Entrepreneurial University Important? *Journal of Innovation Management*, 1 (2), PP. 10- 17
- Hanny, N., Felix, T., Margaret, J. and Nelson, O. 2011. “Entrepreneurship: its relationship with market orientation and learning orientation”, *Industrial Marketing Management*, 40 (6), pp. 336-345
- Heale, R. and Forbes, D. 2013. Understanding triangulation in research. Evidence-Based Nursing, *BMJ Journal*, 16 (4) pp: 16-98
- Helfat, C.E. and Peteraf, M.A. 2003. The dynamic resource-based view: capabilities life cycles. *Strategic Management Journal*, 24, pp. 997–1010.
- Hoopes, D.G. and Madsen T. L. 2008. “A capability-based view of competitive heterogeneity”. *Industrial and Corporate Change*, April: 1-34.
- Hu, M.C.2009. “Developing entrepreneurial universities in Taiwan the effects of research funding sources”, *Science Technology and Society*, 14 (1), pp. 35-57.
- Hudson, L., and Ozanne, J. 1988. Alternative Ways of Seeking Knowledge in Consumer Research. *Journal of Consumer Research*, 14(4), pp. 508–521.
- Huffman, D., Quigley, J. The role of the university in attracting high tech entrepreneurship: A Silicon Valley tale. *Ann Reg Sci* 36, 403–419 (2002).
- Iikela, S. 2017. Unam blocks indebted students. *The Namibian Newspaper* [Online], 28 September. Available at: <<https://www.namibian.com.na>> [Accessed 17 May 2018].
- Jameson, J. and O’Donnell, P. 2015. The Entrepreneurial University: a Unifying Theme for TU4Dublin.” Stream 1: Enterprise and Engagement. Available at: <<http://arrow.dit.ie/st1/6>> [Accessed 16 October 2018]

Kahiurika, N. 2015. New Funding Measures for Tertiary Institution. The Namibian Newspaper [Online], 02 February. Available at: <<https://www.namibian.com.na>> [Accessed 29 May 2018]

Ketchen, D.J. Jr., Hult, G.T.M. and Slater, S.F. 2007. "Toward a greater understanding of market orientation and the resource-based view", *Strategic Management Journal*, 28 (9) pp. 961-964

Kogan, M., and Marton, S. 2000. The State and Higher Education. In Kogan, M., Bauer, M., Bleiklie, I., and Henkel, M. ed. 2006. *Transforming Higher Education: A Comparative Study*. Springer, Netherlands. pp. 89–108.

Lall, S., 1992. Technological capabilities and industrialization. *World Development*, 20 (2), 165-186.

Lambert, R., 2003. Lambert review of business-university collaboration. The University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship.

Leedy, P.D., and Ormrod, J.E. 2005. *Practical research. Planning and design*. (8th ed.). Pearson Education: Upper Saddle River, New Jersey: Pearson Education Upper Saddle River.

Liebow, E. 2003. *Tally's corner: A study of Negro streetcorner men*. Lanham, MD: Rowman and Littlefield.

Liu, Y. 2012. Does entrepreneurial university exist in China? A case from Huazhong University of Science and Technology", *Journal of Knowledge-based Innovation in China*, 4 (2) pp.88-103

Lord, H. L. 2002. Annual Reports: A Literature Review. *Journal of Technical Writing and Communication*, 32 (4) pp: 84

Marope, M. T. 2005. Namibia: Human Capital and Knowledge Development for Economic Growth with Equity. Africa Region Human Development Working Paper 84. Washington DC: World Bank.

Matengu, K., Likando, G., and Kangumu, B. 2014. Governance and Coordination of the Higher Education System in Namibia: Challenges and Prospects. *Journal of (FIRE) Forum for Internat*

McGregor, K. 2015. Six key elements of an entrepreneurial university. University World News: The Global Window on Higher Education [Online], 31 March. Available at: <<https://www.universityworldnews.com>> [Accessed 3 April 2019]

Ministry of Finance, 2016. National Budget Statement. 2015-2016, Windhoek Namibia

Ministry of Finance, 2017. National Budget Statement. 2016-2017, Windhoek Namibia

Moed, F. 2006. Bibliometric rankings of world universities: Centre for Science and Technology [pdf] The Netherlands: Leiden University. Available at <<https://pdfs.semanticscholar.org>> [Accessed 14 July 2019].

Mutenga, K. 2010. In Pursuit of Access with Equity in the Higher Education System in Namibia. Windhoek: Ministry of Education. *International Research in Education*, 1 (2) pp. 83-97

Myers, M. D. 2008. "Qualitative Research in Business & Management" SAGE Publications

NCHE (National Council for Higher Education), 2009. *Funding Formula for Public Higher Education Institutions to be introduced in the Next Medium Term Expenditure Framework 2014*. Windhoek, Namibia.

Neuman, L. W. 2000. *Social Research Methods: Qualitative and Quantitative Approaches (4th Ed.)*, USA: Allyn and Bacon.

Newbert, S. L. 2007. "Empirical research on the resource-based view of the firm: An assessment and suggestions for future research". *Strategic Management Journal*, 28, pp. 121-147.

Ngutjinazo, O. 2019. NSFAP dumps 12 000 students. The Namibian Newspaper [Online], 22 May. Available at: <<https://www.namibian.com.na>>[Accessed 01 June 2019]

Nhongo, K. 2017. Unam loses out on foreign partnerships. Windhoek Observer [Online] 08 December. Available at:<<https://www.observer.com.na>> [Accessed 05 April 2019]

O'Leary, Z. 2014. *The essential guide to doing your research project (2nd Ed.)*. Thousand Oaks, CA: SAGE Publications, Inc.

OECD. 2012. European Commission Guiding Framework for Entrepreneurial Universities. Available at: <<http://www.oecd.org>> [Accessed 07 October 2018]

Patton, M. Q. 2002. *Qualitative Research and Evaluation Methods* (3e). Thousand Oaks, CA: Sage.

Peteraf, M. 1993. The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, 13pp. 363–380.

Peteraf, M.A. and Barney, J.B., 2003. Unraveling the resource-based tangle. *Managerial and decision economics*, 24(4), pp.309-323.

Peterka, S.O. and Salihovic, V., 2008. What is an entrepreneurial university and why we need it. Peterka. URL: <http://www.cepor.hr/App>.

Ponterotto, J. G. 2006. Brief Note on the Origins, Evolution, and Meaning of the Qualitative Research Concept Thick Description. *The Qualitative Report*, 11(3) pp. 538-549.

Popoola, O. S, and Fagbola, O, O. 2011. The innovation capability of managers in large-scale manufacturing companies. *SA Journal of Information Management*, 16 (1) pp. 4-9

Porter, M. E. 1985. *Competitive Advantage*. Creating and Sustaining Superior Performance. Free Press: New York, pp. 557

Priem, R. L., and Butler, J. E. 2001. “Tautology in the resource-based view and the implications of externally determined resource value: Further comments”. *The Academy of Management Review*, 26, pp. 57-66

Priem, R.L., and Butler, J.E. 2001. Is the resource-based ‘view’ a useful perspective for strategic management research? *Academy of Management Review*, 26(1), pp. 22–40.

Pugh, R., Lamine, W., Jack, S. and Hamilton, E. 2018. The entrepreneurial university and the region: what role for entrepreneurship departments? *European Planning Studies*, 26 (9) pp: 1835-1855

Rashidirad, M., Soltani, E., and Salimian, H.2015. ‘Reductionist’ and ‘Holistic’ Views of Resource-Based Theory: A Review of the Literature, *Strategic Change* 24 pp. 509–525

Ravinder, R. 2010. Emerging Trends of Higher Education in Developing Countries. Namibia's University of Science and Technology Windhoek, Namibia <Available at www.nust.na> [Accessed 4 October 2018]

Reyes, C. N. 2016. "Framing the entrepreneurial university: the case of the National University of Singapore", *Journal of Entrepreneurship in Emerging Economies*, 8 (2) pp.134-161

Ritchie, J. and Lewis J. 2011. *Qualitative Research Practice (4th Ed): A Guide for Social Science Students and Researchers*. Thousand Oaks, CA: Sage

Salmi, J. 2008. The Growing Accountability Agenda: Progress or Mixed blessing? Paper-Based on an article in *International Higher Education*. Washington, DC: The World Bank.

Schwab, K. 2016. *The Fourth Industrial Revolution: what it means, how to respond*. World Economic Forum. Available at: <<https://www.weforum.org/agenda>> [Accessed 5 September 2019].

Schwandt, T. A. 2001. *Dictionary of qualitative inquiry (2nd Ed.)*. Thousand Oaks, CA: Sage.

Sharp, L., McDonald, A., Sim, P., Knamiller, C., Christine Sefton, C., and Wong, S. 2011. Positivism, post-positivism, and domestic water demand: interrelating science across the paradigmatic divide, 36 (4) pp. 501-515

Shivute, M. 2014. Funding Formula for Public Higher Education Institutions to be Introduced in the Next Medium Term Expenditure Framework (2015/16 – 2017/18). Available at: <http://www.nche.org.na/medstat4.php> [Accessed 4 October 2018]

Shrivastava, P. 1995. Environmental technologies and competitive advantage, *Strategic Management Journal*, 16 (1), pp. 183-200

Sirmon, D.G., Hitt, M.A., Arregle, J.L. and Campbell, J.T., 2010. The dynamic interplay of capability strengths and weaknesses: investigating the bases of temporary competitive advantage. *Strategic Management Journal*, 31(13), pp.1386-1409.

Tekin, M., Geçkil, T. and Koyuncuoğlu, Ö., 2017. Entrepreneurial universities index: a scale development study. measurement, 7(2).

Tjiremba, E., and Haufiku, J. 2017. Annual Plan. 2017. University of Namibia, Windhoek

Trequattrini, R., Lombardi, R., Alessandra Lardo, A., and Cuzzo, B. 2018. The Impact of Entrepreneurial Universities on Regional Growth: a Local Intellectual Capital Perspective. *Journal of the Knowledge Economy*, 9 (1) pp. 199–211

Tyobeka, E. and Kgabi, N. 2016. Contextualizing a Funding Framework for Higher Education Institutions in Namibia. *Journal for New Generation Sciences*, 14 (2) pp. 60-75

UNESCO. 1996. World Guide to Higher Education: a comparative survey of systems, degrees, and qualifications (3rd Ed.). Paris: UNESCO Publishing.

Van den Hoonaard, W. 2001. ‘Is Research Ethics Review a Moral Panic?’ *Canadian Review of Sociology and Anthropology*, 38, pp. 19 –36.

Wernerfelt, B. 1984. A resource-based view of the firm. *Strategic Management Journal*, 5 (2) pp. 795-815

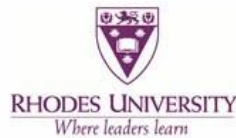
Williams, G. and Kitaev, I. 2005. “Overview of national policy contexts for entrepreneurialism in higher education institutions”, *Higher Education Management and Policy*, 17 (3), p. 125.

Zawislak, P.A., Zen, A.C., Fracasso, E.M., Reichert, F.M. and Pufal, N.A., 2013. Types of innovation in low-technology firms of emerging markets: an empirical study in the Brazilian Industry. *RAI Revista de Administração e Inovação*, 10(1), pp.212-231.

Zhang, J., Li, H., and Meng, L. 2016. Entrepreneurial universities: emerging models in the new social and economic landscape. *Small Business Economics*, 47 (3) pp. 551–563

Zheng, Y., Liu, J., and George, G. 2010. The dynamic impact of innovative capability and inter-firm network on firm evaluation: A longitudinal study of biotechnology firms. *Journal of Business Venturing*, 25(6), pp. 593-609.

Appendix 1: Rhodes Ethics Approval Letter



Human Ethics subcommittee
Rhodes University Ethical Standards Committee
PO Box 94, Grahamstown, 6140, South Africa
t: +27 (0) 46 603 8055
f: +27 (0) 46 603 8822
e: ethics-committee@ru.ac.za
www.ru.ac.za/research/research/ethics
NHREC Registration no. REC-241114-045

13 September 2019
Victoria Shiimi
Review Reference: 2019-0239-516
Email: g17s8822@campus.ru.ac.za

Dear Victoria Shiimi

Re: AN EXPLORATORY STUDY ON UNAM'S OPPORTUNITIES OF BEING AN ENTREPRENEURIAL UNIVERSITY

Principal Investigator: Ms. Tshidi Mohapelo

Collaborators: Ms. Victoria Shiimi

This letter confirms that the above research proposal has been reviewed and **APPROVED** by the Rhodes University Ethical Standards Committee (RUESC) – Human Ethics (HE) sub-committee.

Approval has been granted for 1 year. An annual progress report will be required to renew approval for an additional period. You will receive an email notifying when the annual report is due.

Please ensure that the ethical standards committee is notified should any substantive change(s) be made, for whatever reason, during the research process. This includes changes in investigators. Please also ensure that a brief report is submitted to the ethics committee on the completion of the research. The purpose of this report is to indicate whether the research was conducted successfully, if any aspects could not be completed, or if any problems arose that the ethical standards committee should be aware of. If a thesis or dissertation arising from this research is submitted to the library's electronic theses and dissertations (ETD) repository, please notify the committee of the date of submission and/or any reference or cataloging number allocated. Sincerely

Prof Joanna Dames

Chair: Human Ethics sub-committee, RUESC- HE

Center FOR RESEARCH AND PUBLICATIONS

Office of the Pro-Vice-Chancellor: Research Innovation and Development

UNIVERSITY OF NAMIBIA, Private Bag, 13301 Windhoek, Namibia

340 Mandume Ndemufayo Avenue, Pioneers Park, Office D090 +264-61-20646248] research@unam.na Fax+264-61-206 4624

09 September 2019

Dear Ms. Victoria Shiimi,

PERMISSION TO CONDUCT RESEARCH ACTIVITIES AT THE UNIVERSITY OF NAMIBIA (UNAM)

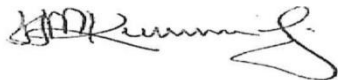
Your application to research UNAM entitled: "**An exploratory study on one of the Higher Education Institution's opportunities of being an entrepreneurial university**" was considered based on ethical evaluation from your institution. Hence, permission is hereby granted with the following conditions:

1. During your research activities at UNAM, you will observe the required procedures, norms, and ethical conduct following the relevant Research Policies and Guidelines. If unsure, please consult the Centre for Research and Publications at UNAM for guidance. Any deviations and amendments to the original documents submitted (i.e. research proposal, interview guide, consent forms, etc.) must be submitted again for approval before the research activities can commence.
2. The results of the findings will be shared with the PVC: Research, Innovation and Development, and the Centre for Research and Publications, before they are disseminated or published in the public domain.
3. Upon completion, a copy of the Research Report must be lodged with the UNAM Library for our records.
4. Proper, full acknowledgments of the University of Namibia and all participants /respondents shall be done in the Research Report and any subsequent publications arising from this research.

If you are agreeable to the above conditions, please sign and date a copy of this letter and return it to the Centre for Research and Publications (Email: research@unam.na). If you have any queries, do not hesitate to contact the Centre for Research and Publications.

Wishing you all the best with your research.

Yours sincerely



Dr. Hileni M. Kapenda

I accept and agree to all the conditions.

VICTORIA SHIMI



09 September

Full Name and Surname

Signature

Date

Appendix 3: Institutional Participation Letter



RHODES UNIVERSITY

Grahamstown •6140 •South Africa

DEPARTMENT OF RHODES BUSINESS SCHOOL

Tel: [+27] 046 603 8617

Fax: [+27] 046 603 8613

E-mail: n.craig@ru.ac.za

29 August 2019

Centre for Research and Publication

University of Namibia

Private Bag 13301

Windhoek, Namibia

Dear

Re: Invitation to research your institution

Victoria Shiimi under the supervision of Tshidi Mohapeloa is a Rhodes Business School postgraduate student doing a Master of Business Administration Degree at Rhodes University researching UNAM's opportunities for being an entrepreneurial university. This research aims to explore whether UNAM has the potential of becoming an entrepreneurial university and how the institution supplements funding through entrepreneurial activities to find a sustainable solution to overcome resource deficit. The participation and cooperation of your institution are important so that the results of the research are accurately portrayed.

The research will be undertaken through semi-structured face-to-face interviews and document analysis with a head and deputy head from the four centers (Centre for Quality Assurance & Management, Multidisciplinary Research Centre, Unam Foundation Centre, and the University Central Consultancy Bureau) that coordinate research and entrepreneurship activities at the university. The data to be collected from this research will be raw and qualitative. The identity of your institution and the employees who voluntarily consent to participate will be treated

with complete confidentiality. The collection of this data will require from each participant about 7 minutes to complete.

We look to you for guidance in identifying participants at your institute that would be suitable to interview (at a time and date that suits them).

Attached for your information is a copy of the participant's Informed Consent Form. If you have questions or wish to verify the research, please feel free to contact us.

If you would like your institution to participate in this research, please complete and return the attached form.

Thank you for your time and I hope that you will find our request favorable.

Yours sincerely,

Victoria Shiimi
Research Student

Tshidi Mohapelo
Supervisor

Appendix 4: Institution Consent Form

An Exploratory Study on UNAM’s opportunities of being an entrepreneurial university.

Institution Consent Form

Participation Consent	
I consent for you to approach employees (P01, P02, P03, P04, P05, and P06) to participate in the “An exploratory study on UNAM’s opportunities of being an entrepreneurial university”.	
I acknowledge and understand:	
<ul style="list-style-type: none"> • The role of the institution is voluntary. • I may decide to withdraw the institution’s participation at any time without penalty. • Employees.....[Specify which employees e.g. “in HR”] will be invited to participate and that permission will be sought from them too. • Only employees who consent will participate in the project. • All information obtained will be treated in strictest confidence. • The employees’ names will not be used and individual employees will not be identifiable in any written reports about the study. • The institution will not be identifiable in any written reports about the study. • Participants may withdraw from the study at any time without penalty. • A report of the findings will be made available to the institution. • I may seek further information on the project from VICTORIA SHIIMI on +264 811492241. 	

Full Name:	
Position:	
Signature:	
Date:	

Please return to:	Please contact me (VICTORIA SHIIMI) at: +264 811492241 to come pick it up.
--------------------------	---

Appendix 5: Individual Participation Letter



RHODES UNIVERSITY

Grahamstown •6140 •South Africa

DEPARTMENT OF RHODES BUSINESS SCHOOL

Tel: [+27] 046 603 8617

Fax: [+27] 046 603 8613

E-mail: n.craig@ru.ac.za

29 August 2019

University of Namibia

Private Bag 13301

Windhoek, Namibia

Participant P01, P02, P03, P04, P05, and P06

Re: Invitation to participate in a research study

You are invited to participate in a research study entitled an exploratory study on UNAM's opportunities of being an entrepreneurial university. This research aims to determine to explore whether UNAM has the potential of becoming an entrepreneurial university and how the institution supplements funding through entrepreneurial activities to find a sustainable solution to overcome resource deficit. Your participation and cooperation are important so that the results of the research are accurately portrayed.

The research will be undertaken through semi-structured face-to-face interview with a head and deputy head of departments/divisions that coordinate research and entrepreneurship activities as well as lecturers in the Economics and Management Department at the university and document analysis, and the data to be collected from this research will be raw and qualitative. Your identity and that of your institution will be treated with complete confidentiality. The collection of this data will require about 10 minutes of your time to complete.

We will provide you with all the necessary information to assist you to understand the study and explain what would be expected of you (the participant). These guidelines would include the risks, benefits, and your rights as a study subject. Furthermore, you must be aware that this study has been approved by a Research Ethics Committee of the university.

Participation in this research is completely voluntary and this letter of invitation does not obligate you to take part in this research study. To participate, you will be required to provide written consent that will include your signature, date, and initials to verify that you understand and agree to the conditions. Please note that you have the right to withdraw at any given time during the study without penalty.

Thank you for your time and I hope that you will find our request favorable.

Yours sincerely,

VICTORIA SHIIMI

Research Student

DR TSHIDI MOHAPELOA

Supervisor

Appendix 6: Informed Consent Form



RHODES UNIVERSITY

Grahamstown • 6140 • South Africa

INFORMED CONSENT FORM

Department of Rhodes Business School

Research Project Title:	An exploratory study on UNAM's opportunities of being an entrepreneurial university
Principal Investigator(s):	Victoria Shiimi

Participation Information

- I understand the purpose of the research study and my involvement in it
- I understand the risks of participating in this research study
- I understand the benefits of participating in this research study
- I understand that I may withdraw from the research study at any stage without any penalty
- I understand that participation in this study is done voluntarily
- I understand that while information gained during the study may be published, I will not be identified and my results will remain confidential
- I understand that I will receive no payment for participating in this study

Information Explanation

The above information was explained to me by Victoria Shiimi

The above information was explained to me in English Afrikaans isiXhosa isiZulu
Other:

and I am in command of this language

OR, it was comprehensibly translated to me by N/A

Voluntary Consent

I, (P01, P02, P03, P04, P05, and P06), hereby voluntarily consent to participate in the above-mentioned research.

Signature:	OR , right-hand thumbprint <div style="border: 1px solid black; width: 150px; height: 30px; margin: 10px auto;"></div> Witness signature:	Date: / /
------------	---	-------------------

Investigator Declaration

I, **Victoria Shiimi**, declare that I have explained all the participant information to the participant and have truthfully answered all questions ask me by the participant.

Signature:	Date: 29 August 2019
------------	----------------------

Translator Declaration

I, N/A, declare that I translated a factually correct version of:

1. all the contents of this document
2. all questions posed by the participant
3. all answers given by the investigator

Also, I declare that all information acquired by me regarding this research will be kept confidential.

Signature N/A	Date: / / N/A
------------------	--------------------------

Semi-Structured Interview Schedule

The main purpose of this research is to explore whether the UNAM has opportunities for being an entrepreneurial university. This platform creates an opportunity for you to be heard (opinions only) and there is no right or wrong answer. Your contribution is highly valued as it will help the study to unpack the potential on the new transformation. You are hereby assured that your identities will not be revealed as your responses are coded.

Participant's Profile

Interview Code:

Time Taken (min):

Current Position at UNAM:

Years working at UNAM:

Highest Professional Qualifications:

1. All Higher Education Institutions (HEI) have mission statements or values that hold them together. Does your institution's mission statement include an entrepreneurial vision for the future? If yes, explain what it says and if no, explain how it should be incorporated.
2. Internal capabilities refer to a set of resources (difficult to imitate) that an organization has for it to perform. Name the internal capabilities that your institution has which could enable the process of the institution becoming an entrepreneurial university.
3. How can these internal capabilities be effectively applied to create a sustainable competitive advantage for UNAM?
4. How can these internal capabilities influence external opportunities (e.g. attract investors) for the university to exploit?
5. What benefits would UNAM derive from becoming an entrepreneurial university?

6. Let us do a SWOT analysis for UNAM. What could your institution's strengths and weaknesses, opportunities, and threats be once transformed into an entrepreneurial university?
7. To become an entrepreneurial university, an integrated entrepreneurial culture need to be cultivated at the institution. What could be part of this culture and how can it be reinforced?
8. Now that HEI in the country faces a reduced budget allocation from Government, what public responses have yielded positive entrepreneurial activities for the institution?
9. To what extent do you think the public and private sector are ready to give a buy-in for one of the HEI to become an entrepreneurial university? Justify your answer.
10. How could you potentially contribute towards the actualization of your HEI as an entrepreneurial university as a staff member within the institution?
11. What do you recommend your HEI should do to exploit entrepreneurial opportunities? Could you identify any further entrepreneurial opportunities that your institution could potentially capitalize on?

Appendix 8: Formation of Categories, Sub-themes, and Themes

Sub-codes	Codes	Sub-themes	Themes
	Campus establishment Expansion of existing campuses Equipment boosting Donation of satellite data equipment	Infrastructure development Teaching and learning resources	Creation of a conducive environment
	Commercialization Process flow for incubation	Innovation and product development	Research outputs should be translated into innovation for commercialization
	Collaborations Memorandum of Understanding	Agreements entered into with national and international organization	Impact of collaboration and partnership in a university
	System upgrade Video conference Wireless internet connection	Technological advancement at the university	Technology know-how simplify work
	Staff development	Enhanced skills and expertise	An institution is viewed in terms of its human capital's skills and expertise
	Subsidies Capital grants Meal fees Hostel and tuition fees	Income streams for the university	Revenue generation is the fundamental part of an organization
	Appointments Election	Increased recruitment	Investment in human capital on the increase

Sub-codes	Codes	Sub-themes	Themes
	<p>The concept of the 21st century and 4IR</p> <p>Transformation of the university into the TSA</p> <p>Strategic Plan developed for 2022-2024 focusing on research and innovation</p>	Entrepreneurial vision and mission	Research and innovation are on the priority list of entrepreneurial mission
	<p>Positioning its presence throughout the country</p> <p>Properties in its custody such as land and infrastructure</p> <p>Student pool in terms of the number of students admitted per year</p>	Internal Capabilities	Internal capabilities enable entrepreneurial mission and vision to be realized
	<p>Identification of priority areas to focus on</p> <p>Revisiting of the structure so that it becomes relevant and respond to current needs</p>	How an institution stand out in the industry	Sustainable Competitive Advantage as dependent on internal capabilities
	<p>Develop asset base</p> <p>Collaborate on research with the industry</p> <p>Present research findings to national and international markets to attract investors</p> <p>Leverage the university brand</p>	Positioning in the external environment	The exploitation of external opportunities is of critical importance in the transformation
	Self-reliance in terms of funds		

	Increase of income stream Increase in the credibility of the university brand	Reaping of great rewards	Benefits of entrepreneurial activities to the university
	Increase in competition Product innovation The regulatory framework in place	Analyze the business environment	Scanning of the business environment
	Revisit organizational culture Develop support systems Staff sensitization mechanisms Develop policies to encourage good ethics	Entrepreneurial culture enhanced	Integrated entrepreneurial culture as an integral part of the transformation
	Donor funding Fundraising event	The public response towards university needs	Assistance necessary to bridge the gap in budget allocation
	Implementation of partnerships and cooperation Aligned agenda towards the needs of the industry Interests in university activities	Stakeholder engagement	Importance of buy-in from the public and private sector
	Develop programs responsive to the 4IR Initiate projects that are entrepreneurial oriented Planning and decision-making in terms of policies	Individual contribution making an impact	Contribution of staff in transforming the university is valuable

	Mainstreaming entrepreneurial aspects in all research projects		
	Training opportunities Utilize all asset base and commercialize Conduct studies regularly and be pro-active in decision making Stakeholders engagement	Commercialization of activities	Ways to exploit entrepreneurial opportunities

Appendix 9: An extract of data presentation from document review

4.2.1.1 Infrastructure

a) Annual Report 01- 2013

In this particular year under review, the university has one farm located at Neudamm, Ogongo and Otjiwarongo respectively managed by the Faculty of Agriculture and Natural Resources. According to the Annual report (2013), the Ogongo farm produces horticultural products while Neudamm produces farm-animal products. Both products are sold to staff and students at a subsidized price. The Neudamm farm is located on 10 187 hectares of arid rangeland rearing beef and dairy cattle, goats, sheep, a few pigs and a thousand egg-laying chickens from South Africa. The produces especially dairy products are sold to students and the staff of the university. The farm sells 800 liters of milk per week at a price of N\$7, 50 per liter to caterers at the university's main campus, which amounts to N\$24,000 per month and sells about 4000 liters of milk daily at the same price directly to both students and staff, making N\$900,000 per month. The Ogongo campus is located on a 4,350 hectares farm of which 1000 ha serves as a game park, approximately 800 kilometers from Windhoek, Namibia's capital city. The value and the revenue generated, as well as what is produced on the farm is not mentioned in the annual plan. The Otjiwarongo farm is yet to be developed by the university. The Faculty of Agriculture received laboratory equipment donated by the Chinese Government. In the same vein, the German Government through the GIZ also donated laboratory equipment and machine for the Geo lab. The annual report has, however, not indicated how much the donations are worth in terms of value.

b) Annual Report 02 - 2014

Various structural changes in terms of infrastructure have taken place within the period under review at the university. The university has launched a fund that saw another campus established in Keetmanshoop, south of Namibia in 2014. The campus in the southern town of Keetmanshoop is another milestone achieved by the university in taking its brand to the regions being the 12th. In the same year, the university through a Public-Private Partnership (PPP) established an accommodation facility at the Main Campus. Since the number of university intakes increased due to the enrolment of international students that were recorded in the period under review (Annual Plan, 2014). The (PPP) was an arrangement between Hanganeni Investments (a local company) and UNAM. The university also launched its press, which is a publishing house for homegrown and allopatric universal knowledge. The UNAM Press publishes works on topics related to Namibia and the Southern African region, reflecting the strengths of the University in these areas: Literature, language and culture; education and democracy; statutory and customary law; public policy; social and political history; autobiographies; and indigenous knowledge (Annual report, 2014). The books published in the press are distributed on the university through its bookstore and internationally by African Books Collective. However, there is no indication of the monetary value yield in the annual plan. Moreover, to increase and strengthen its infrastructure, the university completed another phase of construction of the School of Medicine.

Also, as part of its infrastructure, the university opened a satellite site for the training of medical students in the North. This site provides students with clinical education and training at all hospitals in the northern region (Oshakati State Hospital, Onandjokwe Lutheran Hospital, and the Ongwediva Medipark Hospital). Still in the north, a wing named after India (the Indian wing) of the Eng. Jose Eduardo Dos Santos Campus was also completed however, work is still progressing for the rest of the project. Back to the main campus, the university has also managed to complete the construction of the School of Military Science.

c) Annual Report 03 - 2015

During this period, the Department of Geography, History and Environmental Science received equipment to the tune of N\$563,296.71 from the Turkey International Cooperation and Coordination Agency (TIKA).

d) Annual Report 04 - 2016

Through collaboration, the university received satellite data equipment from the Monitoring for Environment and Security in Africa (MESA) to be used for research and education in the Social Science Department (Annual report, 2016). The value of the equipment is not

mentioned in the annual report. MESA is an African Union (AU) and SADC program that monitors floods, droughts, and wildfires. In the same vein, the Neudamm Agricultural Campus **received a donation of agricultural equipment** to produce animal feed pellets from the Turkish Agency for Cooperation and Coordination (TIKA). In both instances, the value, capacity, and team capabilities are not mentioned in the annual report.

Appendix 10: An extract of response from the semi-structured interviews

Semi-Structured Interview Response

The main purpose of this research is to explore whether one of the UNAM in Namibia has the potential of becoming an entrepreneurial university. This platform creates an opportunity for you to be heard (opinions only) and there is no right or wrong answer. Your contribution is highly valued, as it will help the study to unpack the potential on the new transformation. You are hereby assured that your identities will not be revealed as your responses are coded.

Participant’s Profile

Interview Code: Time Taken (min):

Current Position at UNA:

Years working at UNAM:

Highest Professional Qualifications:

P01, 02, 03, 04, 05 & 06 = Participant 01 or 02 as an example

Navy gold: entrepreneurial mission and vision statements
Light pink: internal capabilities
Red: how an institution stand out in the industry
Skyblue: positioning in the external environment
Green: reaping of great rewards
Brown: analyze the business environment
Light blue: entrepreneurial culture enhanced
Blue: public response towards university needs
Green: stakeholder engagement
Greyish: individual contribution making an impact
Light gold: commercialization of activities

1. All Higher Education Institutions (HEI) have mission statements or values that hold them together. Does your institution’s mission statement include an entrepreneurial vision for the future? If yes, explain what it says and if no, explain how it should be incorporated.

P01 Yes, the university has a new mission statement specific to entrepreneurial activities. The old one is not.

P02 The University developed a new Strategic Plan for 2019 – 2024 where the focus is on research, innovation, and development and that it is in the same Strategic Plan for 2019-2024 where the new mission statement and vision are stated.

P03 The new mission statement and vision were necessitated by the new direction and vision of the current Vice-Chancellor that of research and innovation.

P04 No, it does not. There is a new mission statement after the new Vice-Chancellor focusing more on research and innovation.

P05 No, there is a revised mission recently after the new leadership focusing on research hub and innovation

P06 The current mission statement and vision does not include an entrepreneurial vision, however, as part of the transformation that the university is going through, a new mission statement and vision was developed in line with the 21st Century and 4IR. This is an initiative of the new Vice-Chancellor”.

- Internal capabilities refer to a set of resources (difficult to imitate) that an organization has for it to perform. Name the internal capabilities that your institution has which could enable the process of the institution becoming an entrepreneurial university.

Participants	Answers
P01	Human resources, assets in terms of land and finances
P02	Human resource capacity and Inceptor (Holding company)
P03	Staff compliment, Positioning (12 campuses & centers) and properties such as land, infrastructure
P04	Human resource, Assets (land & infrastructure) and financing (subsidy)
P05	Human capital, Infrastructure, and assets such as land
P06	Human resources, student pool, and Published books

- How can these internal capabilities be effectively applied to create a sustainable competitive advantage for UNAM?

Participant	Answers
P01	In terms of human resources, the university needs to revisit its structure so that it becomes more relevant and responsive to current needs. The university has plenty of lands available on its various campuses throughout the country that could be developed into good use such as property rentals for private businesses. With regards to medicine, the university should establish a teaching hospital on the School of Medicine

	<p>campus where our own produced medical doctors and nurses can practice and eventually be employed to assist the Government in creating jobs and internship opportunities.</p> <p>Look, we also have the Neudamm Agricultural Campus 38km outside Windhoek providing training to our students in crops and animal rearing as well as in veterinary studies. Under this campus, the university owns two farms. As we speak, the campus process meat, makes yogurt and produces milk but on a small scale and currently sold to the university staff. The university should also utilize the available funding although not enough to fund various researches however, ensuring that research outcome is implemented into viable businesses with tangible products or services”.</p>
P02	<p>Identification of key priority areas for the university to focus on and avoid being everywhere. The university should move away from being too traditional and redirect their efforts to activities framed to help it thrive such as more research and encourage implementation of those research outcomes.</p>
P03	<p>The university should move away from the current mix of direction and identify certain areas to focus on. Research conducted should be monitored and that their outcomes are innovated so that they can be commercialized. Additionally, “For example, there is an aquifer at the university’s Sam Nuuyoma Marine and Coastal Research Centre (SANUMARC) at Henties Bay where water can be sourced, bottled, branded and then sold in different shops and campuses throughout the country”.</p>
P04	<p>Human resources based on their expertise create opportunities to impart outstanding knowledge and skills in line with market demands. He added that their expertise would enable them to be part and parcel of developing strategies and execution processes of the university. In terms of infrastructure, the university should among its infrastructure identify those that are still relevant and align them to its needs so that they can accommodate envisaged entrepreneurial activities.</p>

P05	<p>The university's asset base such as land could be developed through the Public-Private Partnership (PPP), a good example is the Emona accommodation facilities at the main campus in Windhoek developed by the university and private businesses. The accommodation facilities are under the management of the private entity for six years to recover their capital invested and only then it can be handed over to the university. The university can also solicit skills from its staff and encourage them to present or disclose any commercial opportunity. Once the staff and the university agree, the staff can then be incentivized.</p>
P06	<p>The student pool can be used as experiments by the university and private sector in local research that would inform innovation. He continued that, since the human resource is so diverse in terms of nationality and tribes, more ideas concerning cultural norms and values are shared and integrated. Best practices on indigenous knowledge are also passed on to each other in the university. Of great importance is to tap into the knowledge of academics through research and to create values that instill an institutional culture that is the pride of its work and achievements so far. The university should also educate its community whether the staff, students or nearby surroundings on what it expects from them and how it can contribute to their wellbeing.</p>

4. How can these internal capabilities influence external opportunities (e.g. attract investors) for the university to exploit?

P01	<p>The university research findings should be presented to both the national and international market to attract potential investors willing to enter into a partnership with the university. In the same vein, the university is also given the capabilities to secure funding from various financial institutions to, for example, develop their asset base and commercialize them.</p>
P02	<p>This leads to collaboration on research with the industry that can lead to the research outcome easily to be implemented. Translation of the asset base into income-generating enterprises such as the two farms. The university should patent and have copyrights over its innovations to protect and challenge its use by any third party.</p>

P03	They can be used for innovation and manufacturing of products. Leveraging of the university brand to bring in investors and leads to networking capabilities increased locally and internationally.
P04	Human capital can be used to write proposals and collaborate with the industry for funding purposes. Use finances to increase investment in infrastructure such as PPP for the increase in production of Neudamn Farm.
P05	An innovation center has been established to coordinate all innovation and implement viable research outcomes.
P06	There is a mismatch between the sectors and the academia that is purely caused by irresponsible miscommunication. This miscommunication then leads to the drop in confidence of either group, which affects their purpose.

5. What benefits would UNAM derive from becoming an entrepreneurial university?

P01 indicates that there will be self-reliance in terms of funds. The university will increase its capacity building enabling it to attract suitable personnel.

P02 states that the university will become sustainable in terms of reducing its reliance on Government subsidy by 95%. The university will then be engaged in extensive research that will be innovated into tangible products for commercial purposes.

P03 explains that the university will gain extra resources by increasing its income streams. There will be improved revenue generation due to a shortfall of close to 40% in Government funding that will be minimized.

P04 states the university will increase its money generation activities such as grant research and improve its organizational structure. Imparting of skills & knowledge in different sectors through collaboration and internships provision for Vocational Educational Graduates.

P05 states there will be less dependency on the state for funding. The university will be able to engage in extensive research especially by sending staff to international universities. Additionally, qualified and competent personnel will be appointed and more income will be generated to improve academic programs.

P06 indicates that there will be self-reliance in terms of required finances for operation and ensured the sustainability of the university. The university will also be able to attract suitable and competent personnel leading to improved teaching and learning. “There will be cost-cutting across the board and increased revenue for the university as investors are attracted to

invest in various projects. The credibility of the university brand will increase due to pride from its internal and external community. Likewise, more research output will be produced as there are enough resources in terms of funding and this may improve the university's international rankings".

- Let us do a SWOT analysis for UNAM. What could your institution's strengths and weaknesses, opportunities, and threats be once transformed into an entrepreneurial university?

Participants	Strengths	Weaknesses	Opportunities	Threats
P01	Human capital and asset base	Organizational structure and culture	National and international markets, Collaboration and cooperation with other universities, Cross border teaching and learning (exchange program)	Competition in Resources in terms of finances Technology in terms of bandwidth
P02	Policy framework in place and human capital	The slow pace of implementation and constrained finances	Collaboration and internships	Small market in terms of the country's population and competition
P03	Staff compliment, university brand and positioning in the regions	Focus on academic-only	Empowerment of the university-owned company	Prevailing economic situation, procurement bureaucracy, and competition
P04	Empower human resources and solve technical	None	Access to national and international institutions through collaborations	Competition by other universities

	problems to reduce costs			
P05	Establish overseas centers such as CODEC in SADC Campus empowerment in the regions (decentralization)	Reactive	Desalination at Henties Bay,	Business failure of the Inceptus company Financial risks
P06	Product innovation,	Lack of resources mobilization	Partnerships and Co-operations Collaborations with international universities	Competition is increasing, substitutes in academic programs

7. To become an entrepreneurial university, an integrated entrepreneurial culture need to be cultivated at the institution. What could be part of this culture and how can it be reinforced?

P01 mentions that the entrepreneurship program should be integrated into the university curriculum by revisiting the organizational structure and developing support systems.

P02 said,

“I think part of this culture should be to sensitize the staff and students through activities that create a mind shift to avoid resistance to change. There is also a need to strengthen the urgency to have the process-driven. The culture should advocate stakeholders’ engagement and inclusivity so that they own the process and that various structures should be put in place to support the implementation”.

P03 said,

“The Vice-Chancellor introduced what is called an academic assembly as a platform to engage the university staff on strategic issues that affect the university and its sustainability such as the topic we are discussing now”. The Vice-Chancellor also came up with an open line

encouraging staff to always air their view and opinions freely to his office without any fear of victimization and prejudice.

P04 indicates that setting goals and incentives for those contributing **towards innovation through research** and to hold constant dialogues within faculties to get buy-in.

P05 says creating **awareness among the institution's staff and students alike** so that there can be buy-in into the concept. This would eventually reduce resistance towards change by some university staff.

P06 concluded saying-developing policies to **encourage good ethics that instill a culture of innovation** should be part of this culture.

8. Now that UNAM in the country faces a reduced budget allocation from Government, what public responses have yielded positive entrepreneurial activities for the institution?

P01 states that **not that he is aware** of however, the university must be proactive to stimulate mechanisms to avert the situation.

P02 mentions the university management made a call to all staff to work hard to bring in initiatives and projects to supplement the government subsidy. He added that the university plans to introduce the "Grant Writing Skills" for staff who apply for research grants based on the number of research approved for grants.

P03 indicates;

"I am not in a better position to give a good answer as the university foundation drives all financial aspects of the university and deals with donor funding. They will be in a better position to provide clarity on that, however, I know the alumni concentration would have been of assistance if there was proper coordination".

P04 reveals that there was indeed work towards the financial stability where the university staff sourced funding from the private sector especially at the MRC through research papers that could garner support such as the Malaria project in conjunction with the United State of America.

P05 states,

“I am not at all aware of any local responses but there was donor funding from the German Government that funded the school of Engineering with an amount around N\$60m. I am also aware that the School of Medicine received although not in monetary terms, equipment for health sciences. The University Foundation Centre and the Founding Father of the Republic of Namibia, His Excellency Dr. Sem Shafiishuna Nuuyoma, organized a fundraising event for the university in Swakopmund where an amount of money was raised. I do not know how much it was at this point”.

P06 said I am not aware of any responses from the public.

9. To what extent do you think the public and private sector are ready to give a buy-in UNAM to become an entrepreneurial university? Justify your answer.

P01 pointed out that, the public and private sectors will give a buy-in, as there will now be good finance planning at the university. It is also due to economic woes that affect the implementation of most partnerships and co-operations between the university and the sector.

P02 highlighted largely however more education awareness should be done to ensure that there is value to be derived.

P03 stated largely because the public and private sector can now have trust in the university which have capabilities and standing on its own and there would be increased mutual beneficial relationship.

P04 indicated that most of them will do on the basis it meets their interest. It is also because the university will now have an aligned agenda towards the needs of the industry and close the gap that existed.

P05 pointed out that the sectors will very much have a buy-in as the University Foundation Centre suggests UNAM name all infrastructure in the

P06 stated largely because they have an interest in the university’s activities and graduates to accommodate on the job market.

10. How could you potentially contribute towards the actualization of UNAM as an entrepreneurial university as a staff member within the institution?

P01 indicated to develop programs responsive to the 4IR, ensure quality assurance mechanisms are implemented in an integrative manner and theory is applied effectively as well as incorporate work-integrated learning into various university programs.

P02 explained that being part of the university projects together with the UCCB, collective work will continue and that initiation of some projects at CEQUAM that are entrepreneurial oriented.

P03 said taking courses in innovation and system thinking as a unit and adding value to the university projects through the project management aspect.

P04 highlighted that being a management member, he is involved in planning and decision making in terms of policy that guides them towards becoming entrepreneurial. Also by ensuring that execution and evaluation are being achieved and accounted for. Contribution in terms of research and mainstream entrepreneurial aspects in all research projects.

P05 stated that soliciting money for UNAM to reach the objectives of the institution and looking for external opportunities to be exploited by the university in terms of research.

P06 indicated that as an entrepreneurship lecturer, I am in a better position to advise management through our meetings of how better we can implement entrepreneurial opportunities for the university.

11. What do you recommend your HEI should do to exploit entrepreneurial opportunities?
Could you identify any further entrepreneurial opportunities that your institution could potentially capitalize on?

P01 specifically recommends the university should improve its training facilities and equipment to be on par with the 4IR. He also recommends that UNAM put its capacity to good use such as land and various infrastructure on its campuses around the country. UNAM should also ensure that research reports are translated into innovation and business ideas.

P02 recommends that the university should utilize its asset base and commercialize its infrastructure for revenue generation. UNAM should also scale up its production at various farms within its two campuses (Ogongo and Neudamm) and find a spot for their products in the market.

P03 recommends that the university use their two farms at the Neudamm and Ogongo campus respectively to produce milk, meat, and yogurt on a large scale, have it branded, packaged and appear on the shelves of several local shops in the country. In the same vein, he recommends

that the university start a mineral water bottling from the aquifer at SANUMARC in Henties Bay for commercial purposes.

P04 recommends that the university do a situational analysis to implement the ideas, identify existing policies, laws, and see if they are still relevant and conducive. He further recommends that UNAM engage stakeholders, partners and all groups involved and having an interest in their operations. He also highlighted gender mainstreaming about not only the numbers but the overall impact.

P05 recommends that the university should conduct studies regularly and be proactive in its decision-making. UNAM should also put money aside to research poverty, teenage pregnancy, and gender-based violence as the highlights of everyday news.

P06 recommends that extensive research is essential to create a culture and theme around students. He also recommends for the university to have a culture of community engagement, create rooms for improvement, and find its purpose.