

**THE BUSINESS KNOWLEDGE TRAINING NEEDS OF SOUTH AFRICAN
BIOKINETICISTS TO ENSURE BUSINESS SUSTAINABILITY**

By

MICHAEL JAMES LUMB

Student Number: 19002664

BCom (Sports Management); BA Honours (Biokinetics); MPhil (Biokinetics)

Submitted in part-fulfilment of the requirements of the degree of

BACHELOR OF COMMERCE HONOURS

in

MANAGEMENT (RESM8419p)

in the

DEPARTMENT OF MANAGEMENT

IN THE FACULTY OF COMMERCE

At the

INDEPENDENT INSTITUTE OF EDUCATION VARSITY COLLEGE CAPE TOWN

Supervisor: Mr Karel Marais

ACKNOWLEDGEMENTS

I would like to take this opportunity to express my gratitude and appreciation to the following individuals who made this study possible.

Mr Karel Marais who acted as my supervisor and whose extensive knowledge and guidance contributed significantly towards the completion of this dissertation

Dr Adam de Beer who acted as a mentor and teacher for the underpinning theories of research methodology on which this thesis is built upon.

Neil and Mathilda Lumb, for their continual support, guidance and patience involved in all aspects of the study

Ralph and Tracy Heath, for their continual support in all aspects of the study

Jessica Aileen Heath, for all her love and support in all aspects of the study.

All the participants that gave their time and effort to participate in the investigation

DECLARATION

I hereby declare that the Research Report submitted for the Bachelor of Commerce Honours in Management (RESM8419p) degree to The Independent Institute of Education is my work and has not previously been submitted to another University or Higher Education Institution for degree purposes.

FINAL WORD COUNT

The final word count excludes illustrative material, the reference list, and appendices.

Word Count: 10 995

ABSTRACT

Business knowledge training is essential to succeed in the modern era. Health and medical professionals are exposed to knowledge that allows them to treat pathologies, but it would seem little effort is given towards preparing health and medical professionals to manage businesses in a sustainable, effective, and efficient manner.

The following study examined the business knowledge training needs of South African Biokineticists, a health profession that is a part of the Health Professions of South Africa (HPCSA). The approach to examining the problem included identifying and conducting deductive research on previous literature that explored similar problems amongst different health and medical professionals including American Chiropractors and South African Audiologists. In order to collect the required data an online questionnaire was developed and distributed through the Biokinetics Association of South Africa (BASA) to its members. The reason for using an online-based questionnaire was due to the low cost for distribution, respondents could complete the questionnaire in their own convenient time, and it excludes researcher bias and pressure. It was also in regulation with COVID-19 protocols.

A quantitative, cross-sectional, deductive, and combination of descriptive and inferential research design was used for this study. 69 Biokineticists responded to the questionnaire. Combined high to very high needs for the business knowledge areas explored were: Accounting: 27.5%, Business Sustainability: 33.3%, Corporate Social Responsibility: 23.2%, Ethics: 55%, Financial Management: 34.7%, Human Resource Management: 28.9%, Leadership and Managerial Decision Making: 43.4%, Marketing: 40.6%, Operational Management: 39.1% and, Strategic Management: 33.3%. 70.6% per cent of the participants who partook in the study suggested they needed other business knowledge training needs by providing suggestions in the final question. Of the 70.6%, the most standout requests included information technology (17.02%), Tax related management and knowledge (19.15%) and medical aid training for ICD-10 coding (12.77%). The other 51.06% of the participants that answered the final question provided suggestions that could be categorised into the areas of business already reported on in the Likert Scale.

Keywords: Business knowledge, Biokinetics, training needs, health, and medical professionals

Contents

ACKNOWLEDGEMENTS	ii
DECLARATION.....	ii
FINAL WORD COUNT	ii
ABSTRACT	iii
LIST OF TABLES	vii
LIST OF FIGURES.....	viii
LIST OF APPENDICES.....	viii
LIST OF ABBREVIATIONS.....	ix
GLOSSARY TERMS	ix
CHAPTER ONE: PURPOSE AND ORGANIZATION	1
1.1 Introduction	1
1.2 Seminal Sources.....	2
1.3 Rationale:	3
1.3.1 Personal Rationale	3
1.3.2 Academic Rationale: Impact of Broadening Knowledge on Business Sustainability in Healthcare Practices	4
1.3.3 Community Rationale: The Importance of Small Business Success	4
1.3.4 Industry Relevance: Business Sustainability for Biokineticists and Other Healthcare Practitioners	5
1.4 Problem Statement	5
1.5 Purpose Statement	6
1.6 Research Question	6
1.7 Objectives	6
CHAPTER TWO: LITERATURE REVIEW	7
2.1 Introduction	7
2.2 Biokinetics	8
2.3 Biokinetics Curriculum	9

2.4 Biokinetics in the Private Sector of South Africa	10
2.5 Biokinetics in the Public Sector of South Africa	11
2.6 Business Sustainability and Corporate Social Responsibility	12
2.7 Knowledge Management and Shortfalls in The Health and Medical Professions	14
2.8 Conclusion	17
CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY	18
3.1 Research Paradigm	18
3.2 Research Design	19
3.3 Population and Sampling	20
3.4 Data Collection Method	20
3.5 Data Collection Tool Design	21
3.6 Statistical Analysis	21
CHAPTER FOUR: RESULTS	22
4.1 Introduction	22
4.2 Graduation Period	22
4.3 University Where Studies Took Place	23
4.4 Business Knowledge Training Needs	25
4.4.1 Accounting	28
4.4.2 Business Sustainability	29
4.4.3 Corporate Social Responsibility	30
4.4.4 Ethics	31
4.4.5 Financial Management	32
4.4.6 Human Resource Management	33
4.4.7 Leadership and Managerial Decision Making	34
4.4.8 Marketing	35
4.4.9 Operational Management	36

4.4.10 Strategic Management	37
4.4.11 Total Business Knowledge Training Needs.....	38
4.5 Suggestions for Other Business Knowledge Training Needs	39
4.6 The Most Requested Business Knowledge Training Needs Asked for by BASA Biokineticists.....	40
CHAPTER FIVE: DISCUSSION	41
5.1: Business Knowledge Training Needs of BASA registered Biokineticists	41
5.2 Validity, Reliability and Trustworthiness of the Findings	45
5.3: Ethical Considerations	46
5.4: Limitations of the Study	47
CHAPTER SIX: CONCLUSION	48
6.1: Conclusion.....	48
REFERENCES:.....	49
ANNEXURES:.....	54
Appendix A: Information letter	54
Appendix B: Questionnaire/Survey.....	57
Appendix C: Ethical clearance letter	62
Appendix D: Letter sent out by BASA to members	63
Appendix E: Concept document	64

LIST OF TABLES

Table 4.1: Graduation period	23
Table 4.2: University studied at	24
Table 4.3: Distribution of business knowledge training needs	26
Table 4.4: Accounting statistics	28
Table 4.5: Business sustainability statistics	29
Table 4.6: Corporate social responsibility statistics	30
Table 4.7: Ethics statistics	31
Table 4.8: Financial management statistics	32
Table 4.9: Human resource management statistics	33
Table 4.10: Leadership and managerial decision-making statistics	34
Table 4.11: Marketing statistics	35
Table 4.12: Operational management	36
Table 4.13: Strategic management	37
Table 4.14: Total business knowledge training needs	38
Table 5.1: Comparison of business knowledge training needs across different studies	42

LIST OF FIGURES

Figure

Figure 3.1: Research design	19
Figure 4.1: A pie chart representing the percentage and count of the participant's graduation period	22
Figure 4.2: A bar graph detailing where the participants studied	24
Figure 4.3: A bar graph detailing the distribution of business knowledge training needs amongst South African Biokineticists According to the field of business	27
Figure 4.4: Alternative business knowledge training needs required by BASA Biokineticists	39
Figure 4.5: Analysis of the three most requested business knowledge training needs by BASA Biokineticists	40

LIST OF APPENDICES

Appendix

Appendix A: Information letter	54
Appendix B: Questionnaire/Survey	57
Appendix C: Ethical clearance letter	62
Appendix D: Letter sent out by BASA to members	63
Appendix E: Concept document	64

LIST OF ABBREVIATIONS

BASA- Biokinetics Association of South Africa

CEO- Chief Executive Officer

COVID-19- 2019 Novel Coronavirus

CPD- Continual Professional Development

CSR- Corporate Social Responsibility

HPCSA- Health Professions Council of South Africa

SARS-CoV-2- Severe Acute Respiratory Syndrome Coronavirus 2

SMMEs- Small, Medium and Micro Enterprise Businesses

WHO- World Health Organisation

GLOSSARY TERMS

Accounting: The business process that is concerned and focused on managing, recording, reporting, and analysing financial transactions of an organisation (Henson, Pressley & Korfmann, 2008).

Business Sustainability: The business process that concerns itself with the impact the organisation has on internal and external stakeholders. It is comprised of three main elements including social, environmental, and economic (Sustainability and Social Responsibility Module Manual, 2019).

Corporate Social Responsibility: The business process that is concerned with integrating business, social and environmental factors from the strategic level to all levels of the organisation so to achieve a sustainable future for present and future stakeholders (Sustainability and Social Responsibility Module Manual, 2019).

Ethics: The business process that concerns itself with ethical decision making and what is considered the correct thing to do at a given point in time. It takes into consideration contracts, laws, and regulations that govern and guide an organisation (Henson, Pressley & Korfmann, 2008).

Financial Management: The business process that is focused on acquiring, investing, and managing all the resources of an organisation including tangible and non-tangible assets (Henson, Pressley & Korfmann, 2008).

Human Resources Management: The business process that is focused on the management of people within the organisation and the acquisition of new talent. It is also focused on developing and acquiring knowledge for the organisation, hiring, and firing employees and the development and implementation of the organisation's culture (Henson, Pressley & Korfmann, 2008).

Leadership and Managerial Decision Making: Leadership and managerial decision making is a theory that is focused on an individual's vision. It includes the challenges, processes, and the product of the vision. (Bryman, Collinson, Grint, Jackson & Uhl-Bein, 2017). It can also be summarised into a combination of four approaches, including leadership as a person, process, position, and result. (Iszatt-White and Saunders, 2017).

Marketing: The business process that is focused on defining and selecting potential target markets. It is also concerned with the management of the product/service, pricing, and communication (Henson, Pressley & Korfmann, 2008).

Operational Management: The business field focused on managing the processes that produce and distribute a service or product to the organisation's target market (Henson, Pressley & Korfmann, 2008).

Strategic Management: the business process that is focused on identifying and navigating an organisation towards meeting its goals and objectives (Henson, Pressley & Korfmann, 2008).

CHAPTER ONE: PURPOSE AND ORGANIZATION

1.1 Introduction

Many health professional graduates including Biokineticists, Chiropractors, Homeopaths and Physiotherapists are presented with numerous challenges once they have graduated (Breytenbach, Kritzing & Soer, 2015; Moss & Lubbe, 2011; Henson, Pressley & Korfmann, 2008). They are left with limited choice when it comes to career paths, with many either working for private practices that consist of multidisciplinary teams, being entrepreneurial and opening their practice or working for the public health sector (Breytenbach, Kritzing & Soer, 2015; Moss & Lubbe, 2011; Henson, Pressley & Korfmann, 2008). The courses that are presented at the university level could be inadequate and insufficient to properly prepare health professional students to lead and manage themselves, patients, and eventually other employees in a sustainable business manner (Moss & Lubbe, 2011).

Hands-on management skills are critical for health professionals as they will oversee their patient's healthcare as well as everyday interactions including managing interpersonal dynamics, cultivating positive relationships between different health, medical and corporate professionals, motivating patients and team members as well as distributing, coordinating and storing information ethically.

Health and medical professionals are increasingly being exposed to concepts of corporate social responsibility and sustainability and how it could affect the organisation, the profession and society (Abraham, 2019). Having adequate and current ongoing business training, education and knowledge development may lead to more success and awareness amongst the professionals when pursuing entrepreneurial ventures and implementing themselves into society (Henson, Pressley and Korfmann, 2008).

No studies to the researcher's knowledge have explored and generated conclusive evidence on what business knowledge training is required by South African Biokineticists to ensure business sustainability.

1.2 Seminal Sources

The following articles are used as seminal sources throughout the study:

“The potential market demand for biokinetics in the private health care sector of South Africa” conducted by Moss, S. and Lubbe, M., is utilised as a seminal source due to its importance and relevance as original research that explores business-related concepts required for practice management and entrepreneurship as well as the market demand of Biokineticists in the private health care sector of South Africa (Moss & Lubbe, 2011).

“Audiology practice management in South Africa: What audiologists know and what they should know” conducted by Breytenbach, D., Kritzinger, A. and Soer, M is utilised as a seminal source as it provides a framework for similar future research on business knowledge learning needs to build upon for different South African healthcare workers that belong to the Health Professions Council of South Africa (HPCSA) (Breytenbach, Kritzinger & Soer, 2015).

“Business Training and Education Needs of Chiropractors” conducted by Henson, S., Pressley, M. and Korfmann, S., is utilised as a seminal source as it provides a framework to use to build upon for future studies that are exploring similar research questions. It also provides context on the training and education needs of health practitioners overseas, in this case, North America (Henson, Presslet & Korfmann, 2008).

“Biokinetics: A South African Health Profession Evolving from Physical Education and Sport” conducted by Ellapen, J., Strydom, L., Swanepoel, M., Hammill, H., and Paul, Y., is utilised for the context and information it provides on the profession of Biokinetics in a South African context (Ellapen, Strydom, Swanepoel, Hammil & Paul, 2018).

“The Four Spheres framework for sustainability” conducted by O’Connor, M., is utilised as a seminal source to describe and highlight a key underlining theory of business sustainability that is present throughout the study (O’Connor, 2006).

“Knowledge Management: An Introduction and Perspective” conducted by Wiig, K., is used as a seminal source to explore a key theory of the study in the form of

knowledge management in an organisation. This is further explored with more recent knowledge management theories including knowledge management in a healthcare environment (Morr, 2020; Wiig, 1997).

1.3 Rationale:

1.3.1 Personal Rationale

I qualified with my Honours in Biokinetics in 2015 from the University of Johannesburg and completed my internship the following year. I also went on to complete my Master's in Biokinetics, graduating in 2018 and publishing original experimental research in the South African Journal of Sports Medicine. Since qualifying and registering with the Health Professions Council of South Africa I have worked for three private Biokineticist practices in Johannesburg, Pietermaritzburg, and Cape Town. During these years of experience, it would seem each practice struggled with implementing sound managerial, financial, and ethical protocols. Each of the practices went through periods of financial struggle which led to employee retrenchment, cutbacks and in some cases closure.

This has led me to open my private practice, implementing lessons learned to create a sustainable and viable private practice that can be used as a model of reference for future practitioners. It has also furthered my interest in exploring alternative career opportunities that Biokineticists can involve themselves in as well as furthering my academic knowledge so to become a lecturer.

I decided to complete my Honours in Business Management part-time while practising so I could upskill myself and implement the knowledge learned with that of my practical skills as a Biokineticists.

This has developed my interest in exploring the business knowledge training needs of South African Biokineticists. It has also developed my interests in developing a current and focused module for health and medical students on the concepts of business management and business sustainability. Finally, it has created a desire to strive towards becoming a lecturer.

1.3.2 Academic Rationale: Impact of Broadening Knowledge on Business Sustainability in Healthcare Practices

Ferreira, Mueller, and Papa (2020) state that knowledge and intellectual capital is key to survival and long-term sustainability for many organisations large and small. In a world that is increasingly losing the hurdle of borders through technology, the survival of a business depends on the organisation's intelligence that is made up of information and knowledge management, the skills of the personnel working within the organisation and how it serves the needs, requirements and wants of stakeholders that make up the quadruple bottom line (Ferreira, Mueller & Papa, 2020). Knowledge is seen as a strategic resource that can be nurtured and grown to provide individuals and organisations with a competitive advantage over others (Ferreira, Mueller & Papa, 2020).

1.3.3 Community Rationale: The Importance of Small Business Success

Small, medium and micro-enterprises (SMMEs) make up the majority of private business within South Africa and directly impact on the creation of employment and the prosperity of the community and social wellbeing (Success factors of small business owners in South Africa, 2018; Fatoki, 2014). The success and long-term sustainability of entrepreneurial businesses are essential in all industries including private healthcare practices, however, South Africa experience some of the highest failure rates of small private businesses in the world at a failure rate of between 70% and 80% (Success factors of small business owners in South Africa, 2018; Fatoki, 2014). Furthermore, it is suggested that understanding why SMMEs fail is important so to address the issues and improve success (Success factors of small business owners in South Africa, 2018; Fatoki, 2014). Failure of SMMEs has been attributed to numerous internal and external reasons (Success factors of small business owners in South Africa, 2018; Fatoki, 2014). The most prominent internal reasons include lack of applicable skills and managerial knowledge including concepts of planning, organising, leading, and controlling (Success factors of small business owners in South Africa, 2018; Fatoki, 2014). External factors contributing to the

failure rate of SMMEs include competition, laws and regulations, the country's economic prosperity and the increasing cost of conducting business (Success factors of small business owners in South Africa, 2018; Fatoki, 2014). It is therefore paramount that small business owners regardless of industry address and control for internal factors by improving knowledge and skills of business concepts and business sustainability to react with confidence to external factors that are out of their control (Success factors of small business owners in South Africa, 2018; Fatoki, 2014). This will lead to greater community prosperity as successful SMMEs will be able to contribute to job creation, economic growth, and assist towards a fairer spread of income distribution amongst South African citizens (Fatoki, 2014).

1.3.4 Industry Relevance: Business Sustainability for Biokineticists and Other Healthcare Practitioners

The study is relevant to the industry of Biokinetics and other healthcare professions within South African as successful and sustainable businesses and business practice within the private and public sector is essential to stimulate growth within an economy, especially one that is developing and has had a significant impact due to corruption and a pandemic like the one being caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (Dlamini, 2020, Smit & Watkins, 2012). The success of small, medium and micro enterprises (SMMEs) are vital for job creation, the mitigation of poverty and economic prosperity. However, it is estimated only 1% of micro-enterprises grow from five or fewer employees to ten or more without the added pressures of a global pandemic (Smit & Watkins, 2012).

1.4 Problem Statement

Little is known of the South African Biokineticists knowledge training needs in terms of business management and sustainability. The suspected lack of business knowledge training and skills taught to healthcare practitioners including Biokineticists can have detrimental effects on the long-term sustainability and

viability of practices and individual careers (Moss & Lubbe, 2011). A more comprehensive business management module targeted at Biokineticists has the possibility of negating the shortfalls and improving the long-term viability of the profession within society (Moss & Lubbe, 2011).

1.5 Purpose Statement

This thesis aimed to identify business knowledge training needs of South African Biokineticists to ensure business sustainability and prosperity. Key areas identified for business sustainability include accounting, corporate social responsibility, ethics, financial management, human resource management, leadership and managerial decision making, marketing, operational management, and strategic management.

1.6 Research Question

What are the business knowledge training needs of South African Biokineticists to ensure business sustainability?

1.7 Objectives

The objectives of this study were to determine what areas and level of business knowledge training were required by South Africa Biokineticists and to identify other areas of knowledge learning required.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The healthcare industry currently finds itself undergoing rapid changes that are leading to an ever more competitive environment. Professionals are continuously challenged with balancing concepts of business management, knowledge development and business sustainability with patient quality of life while trying to maintain ethical integrity (Henson, Pressley & Korfmann, 2008).

Business knowledge training needs for health and medical professionals are essential so they can integrate themselves successfully into society (Henson, Pressley & Korfmann, 2008). This is no more apparent than in South Africa where a struggling economy and mass brain drain amongst professionals is occurring (Mlambo & Adetiba, 2017).

Few studies around the world have determined the business knowledge training needs of health and medical professionals. To current knowledge, no study of the sort has been performed on South African Biokineticists. The profession of Biokinetics is a specialised discipline in exercise therapy. The name is derived from two Greek words: *Bio* meaning life and *Kinesis* meaning movement. Therefore, Biokinetics means '*life through movement*' (Ellapen, Strydom, Swanepoel, Hammill & Paul., 2018:16).

Similar studies have been performed on other health and medical professions around the world and in South Africa (Breytenbach, Kritzinger & Soer, 2015; Henson, Pressley & Korfmann, 2008). These studies have displayed a need for a more in-depth approach to teaching business concepts to the professionals such as Chiropractors and Audiologists (Breytenbach, Kritzinger & Soer, 2015; Henson, Pressley & Korfmann, 2008).

The question now arises whether there is sufficient business knowledge training in health and medical professionals like Biokinetics to practice within or run a business suitably.

The following literature review is going to summarise the underpinning paradigm of the study as well as key theories including business sustainability, corporate social responsibility (CSR) and knowledge management. It will also link the following theories and concepts to the healthcare industry providing insight on the current training and knowledge needs required by healthcare professionals. The profession Biokinetics will also be explored.

2.2 Biokinetics

The profession evolved from the South African Physical Education Programme in the 1920s. The main drive for the profession emerged when it was identified that South African boys were in poor health and this led to the 'South African Defence Force to establish the Physical Training Brigade in 1934' (Ellapen et al., 2018:15). The profession was formally recognised by the South African Medical and Dental Council (SAMDC) on the 9th of September 1983. The SAMDC was later renamed to the Health Professions Council of South Africa (HPCSA) (Ellapen et al., 2018).

The scope of practice of the profession of Biokinetics is described by the Health Professions Council of South Africa (HPCSA) as; 'the final phase functional exercise therapeutic health-related profession that is focused on enhancing the physiological health status of patients' (Ellapen et al., 2018: 16-17; HPCSA, 2013). It consists of professional orthopaedic and chronic diseases evaluations and individual exercise and human movement prescription to treat chronic and orthopaedic pathologies as well as to achieve physiological performance enhancements. The profession is also involved in health and wellness promotion with a focus on the benefits exercise has on non-communicable disease (NCD). Furthermore, the profession promotes being active and living a healthy lifestyle as a method of reducing the risk of orthopaedic injury and the risk of developing NCD's such as high cholesterol, diabetes and other cardiovascular pathologies (Ellapen et.al, 2018; HPCSA, 2013).

2.3 Biokinetics Curriculum

Biokinetics is offered at 12 Universities in South Africa and there are currently two models of tertiary training where a phase-out period of the old to new curriculum is taking place (Biokinetics Association of South Africa, 2020). There is an outgoing model that consists of a three-year undergraduate degree in Human Movement Sciences or an equivalent, followed by a one-year Honours degree specialized in Biokinetics. During this 4th year, the students begin their two years of clinical internship where experience is gained at a registered private Biokinetics clinic or Biokinetics training institution. Clinical experience and internship are currently not offered in South African public healthcare centres (Ellapen et.al, 2018). The first year of clinical internship is performed concurrently with the student's final year of academic study. The second year of clinical experience is completed under supervision from an accredited private practice.

Subjects in the Honours Biokinetics degree includes Anatomy, Clinical Exercise Physiology, Ergonomics, Nutrition, Orthopaedic Rehabilitation, Physiology, Practice Management, Psychology, Research Project, and Wellness (Biokinetics Association of South Africa, 2020).

The current model is offered as a four-year professional degree and includes Exercise Physiology, Ergonomics, Orthopaedic Rehabilitation, Wellness, Practice Management, and a Research Project as the main subjects (Biokinetics Association of South Africa, 2020). The curriculum is aimed at preparing students to integrate themselves and find employment opportunities in health-related fields. These fields are dependent on the entrepreneurial nature of the individual and how they are implemented into the private sector (Biokinetics Association of South Africa, 2020).

When starting a new business or venture having adequate practice management skills can be beneficial and assist a self-employed practitioner to prosper (Moss & Lubbe, 2011; Henson, Pressley & Korfmnn, 2008). Practice management can be described as the process of management that manages all aspects of medical practice including financials, human resources, information technology, marketing, leadership, operation management, ethics, leadership and corporate social responsibility (AAPC, 2020; Lega, Prenestini & Spurgeon, 2013).

2.4 Biokinetics in the Private Sector of South Africa

Qualified Biokineticists can work in the private sector integrating themselves into areas that include corporate business, industries, multidisciplinary private practices & sports clubs. They, however, cannot work for the public health sector outside the South African Defence Force (Moss & Lubbe, 2011)

The reduced job opportunities present in the public sector for the profession has led Biokineticists to be more entrepreneurial, starting private practices or businesses (Moss & Lubbe, 2011). The process is challenging and requires the correct set of skills and knowledge to implement successfully (Moss & Lubbe, 2011). As a practitioner of the HPCSA, Biokineticists are also regulated by strict regulations on marketing and other business practices to protect the public from exploitation and unethical behaviour (Moss & Lubbe, 2011). It is therefore important that adequate business ethics and knowledge is learned on concepts that can help practices run sustainably and where each sphere of the framework is equally considered and studied (O'Connor, 2006). Furthermore, for progressive entrepreneurial success, intellectual capital and knowledge management are considered critical for viability and sustainability for all types of organisations (Wiig, 1997).

Biokineticists find themselves in a unique position within South Africa's private health and medical field as they are specialised in treating lifestyle disorders and orthopaedic pathologies with scientifically prescribed exercise programmes. South Africa has seen an increase in chronic lifestyle diseases as has the rest of the world (Moss & Lubbe, 2011). Lifestyle diseases can be described as diseases that occur due to harmful and poor lifestyle choices including unhealthy diets, smoking, excessive alcohol intake, overexposure to stressful situations and reduced exercise habits (Moss & Lubbe, 2011). These poor lifestyle choices increase the risk of an individual developing or suffering from pathologies including hypertension, strokes, diabetes type II, cancer, myocardial infarctions and chronic bronchitis which in return leads to high mortality and morbidity rates (Pescatello, Arena, Riebe and Thompson, 2014: 9). Research has highlighted how scientifically prescribed exercise programmes can be of benefit for managing and treating lifestyle diseases. One of the scopes of Biokinetics draws on the evidence of prescribing scientific-based

exercise intervention and care to treat these lifestyle disorders thus providing a strong market opportunity for the professionals to position themselves in (Ellapen et al, 2018; Moss & Lubbe, 2011).

The private sector within South Africa is highly specialised and consists of multidisciplinary teams working in collaboration to best treat patients from a chronic or orthopaedic perspective (Moss & Lubbe, 2011). The private sector consists of ± 9.4 million people who are covered by health insurance (Khumalo, 2019; Moss & Lubbe, 2011). This market is highly resource-intensive with a well-developed infrastructure in place to treat them thus providing further opportunity for Biokineticists (Moss & Lubbe, 2011). As of 2020 BASA represents approximately 1100 Biokinetics practitioners in South Africa (BASA, 2020). The most current data available suggests there is a tremendous opportunity present for Biokineticists to implement their speciality and treat patients if a viable and sustainable business is developed as only an estimated 8% of the potential market is addressed by Biokineticists with scientifically prescribed exercise treatment as the primary modality (Moss & Lubbe, 2011). The study conducted by Moss & Lubbe (2011) is the only study of the sort that has explored the market potential of South African Biokineticists.

Even though the potential exists within the private health sector for Biokineticists, new business start-ups require in-depth market analyses, business knowledge and business plans to have the greatest chance of succeeding and being financially, socially and environmentally sustainable as well as compliant with government rules and regulations set out by the HPCSA (Moss & Lubbe, 2011). These skills are rarely taught to health and medical professionals and can be considered one of the main reasons Biokinetics practices are not sustainable over a long period (Moss & Lubbe, 2011).

2.5 Biokinetics in the Public Sector of South Africa

Biokineticists are currently only permitted to practice in the private health care sector even though the benefits of the prescription of scientific-based exercise is well documented (Pescatello, Arena, Riebe, and Thompson, 2014: 9). It is estimated that

one in two South Africans are inactive and inactivity is “attributable to 47% of ischemic heart disease and 20% of diabetes mellitus” (Evans, Smith, Kay, McWade, Angouras, van Aarde, Arkell, Lambert & van der Schyff, 2016: 85). Furthermore, 87% of patients with type II diabetes were attributable to being overweight (Evans et al, 2016). Many of these patients would only have access to public healthcare in South Africa, therefore it would seem tremendous opportunity is available for Biokineticists to implement themselves into the public sector, further emphasising the need for business learning and knowledge to allow for the practitioners to succeed in such an environment.

2.6 Business Sustainability and Corporate Social Responsibility

Business sustainability and sustainable development are two ideologies that are interconnected and essential to explore the importance of health and medical professionals practising in a manner that meets the requirements set out by modern business standards (Arowoshegbe, Emmanuel & Gina, 2018). Without a thorough understanding of these concepts, practitioners may end up neglecting and negatively affecting fundamental stakeholders around them and the business itself (Arowoshegbe et al, 2018).

Sustainability is characterised by the interaction of the economic, environmental, and social systems that makes up the triple bottom line (Arowoshegbe et al, 2018). The practice of sustainability is an integral approach to address the gross imbalances in the natural order of things (Arowoshegbe et al, 2018). The Brundtland report of 1987 describes sustainability as the ability to make development sustainable to ensure future generations prosper and other stakeholders are not adversely affected (Brundtlan, 1987).

Sustainability coexists with theories of accountability and transparency and is dependent on one another for people and organisations to achieve modern corporate social responsibility (CSR) (Sustainability and Social Responsibility Module Manual, 2019). There are numerous schools of thought concerning CSR however the theory that presents equality for all the Earth’s stakeholders seems to be the standard for 21st-century organisations (Sustainability and Social

Responsibility Module Manual, 2019). CSR is the responsibility of organisations to act ethically and be transparent to those around them while still achieving economical goals and contributing to society (Sustainability and Social Responsibility Module Manual, 2019).

Corporate social responsibility and sustainable business practice can be seen to be more challenging within the health and medical environment due to the continual search for strategies that ensure that individual patient welfare and safety remain of utmost importance while still considering other stakeholders (Siniora, 2017; Crow et al, 2002). The unique balancing of patient wellbeing and the other bottom lines provides a challenge no other manager must deal with other than in the health industry (Henson, 2008). The main purpose of healthcare organisations is to protect and improve societies health. However, they are still impactful towards society and the environment and are intertwined with political rules and regulations. If these components are not taught or highlighted the neglect can have detrimental effects on societies health and other important stakeholders (Buffoli, Capolongo, Bottero, Cavagilatio, Speranza & Volpatti, 2013; Crow et al, 2002).

The healthcare industry is seen to face far larger environmental challenges than most other industries as it is faced with technological and regulatory issues where radical changes are required to stay compliant (Crow et al, 2002). The industry itself is described as extraordinarily complex, fluid, and competitive (Crow et al, 2002).

The tetrahedral model of sustainability highlights four interconnected and integrated spheres for sustainable human interaction (O'Connor, 2006). The four spheres include economic, environmental, political, and social spheres (O'Connor, 2006). The political sphere underpins and interacts with all other dimensions, the sphere itself creates policies, rules and laws that govern how society and humans as a collective interact with the other major stakeholders in an accountable, sustainable and transparent manner (O'Connor, 2006). This model can be developed further and implemented into healthcare providers training to upskill them in running and practising a successful and sustainable business which exists within the laws set out by the HPCSA and other governing bodies.

The implementation of vigorous and well-planned sustainability and CSR programs can benefit healthcare organisations by attracting and reducing turnover of key

talents that provide the services to patients and improving public perception and community interaction with the organisation (Siniora, 2017). By implementing a well-designed plan on sustainability, the healthcare organisation such as a private practice may develop a vital competitive advantage over other local practices, increasing its chance of survival and the quality of services offered (Siniora, 2017).

All organisations including those involved in healthcare need to simultaneously pursue economic gain, environmental prosperity and social equity while obeying the law to reap and prosper in the 21st century (Arowoshegbe, Emmanuel & Gina, 2018; Siniora, 2017).

Earth's society was unexpectedly impacted when the severe acute respiratory syndrome coronavirus two was declared a pandemic by the World Health Organisation on the 11th of March 2020 (WHO, 2020). The pandemic has led many non-essential organisations to close and implement social distancing and work from home protocols including Biokineticists (BASA, 2020). As a member of the HPCSA and a profession that is considered supplementary to essential medical services, Biokineticists are left with little option to continue practising during the pandemic other than implementing telemedicine for patients (Potgieter, 2020). The situation has led many SMMEs to struggle with maintaining financial sustainability (Potgieter, 2020). If in-depth business knowledge skills are learned by Biokineticists and other non-essential and supplementary health practitioners it may help them develop entrepreneurial and sustainable endeavours from home to continue to serve the population with their knowledge and skills during times of crisis like the one currently being experienced. However, one could argue that even experienced entrepreneurs will struggle in times of unknown crises.

2.7 Knowledge Management and Shortfalls in The Health and Medical Professions

Knowledge management is a crucial component for any individual or organisation which is striving to succeed regardless of the industry (Gao, Chai & Liu, 2018; Wiig, 1997). The theory is considered multi-dimensional and envelops all aspects of the organisation large and small (Wiig, 1997). The theory refers to the theoretical and practical understanding of a subject and is commonly practised in the twenty-first

century (Gao, Chai & Lui, 2018). The theory of knowledge management is deeply rooted in the history of human society and philosophy and it dates to the philosophical debates held by ancient civilisations including the Greeks (Crow, Hartman, Brockmann & Henson, 2002). Knowledge management as we know it today evolved from 20th-century cognitive sciences, management, and psychology (Crow et al, 2002). Current knowledge management concerns itself with information technologies and the intangible nature of knowledge and how it can benefit the organisation and the interacting stakeholders (Crow et al, 2002). Knowledge management is mainly concerned with identifying, capturing, developing, sharing, and using knowledge effectively and efficiently to meet performance targets, develop a competitive advantage, innovation, distribution of learned concepts and continual improvement (Haughorn, 2014). Actively pursuing knowledge management and learning is considered important as it facilitates decision-making capabilities, building a culture around learning and it stimulates cultural change (Haughorn, 2014). Knowledge management is so fundamentally important for organisations to thrive in the modern era as it brings about numerous positive advantages (Gao, Chai & Lui, 2018). The theory of knowledge management is diverse enough to be implemented and practised by individuals, small enterprises, or large corporations (Gao, Chai & Lui, 2018).

A survey conducted in 1989 concluded that several chief executive officers (CEOs) who were a part of the Fortune 50 at the time agreed that knowledge is an important component behind the success of an organisation and the activities that take place within the organisation (Wiig, 1997).

An organisation or individual that practices continuous learning will develop skills and a culture that will lead to the appreciation of differences, the openness to new ideas, the ability to reflect on opportunities and threats, develop psychological fortitude, actively pursues data collection and analysis, seek experimentation, provide knowledge share with others and reinforce the importance of learning (Garvin, Edmondson, Gino, 2008).

Society is currently in an era where the future will be determined by the ability of people to use knowledge wisely, efficiently and effectively to meet current demands while still allowing the opportunity for future generations of stakeholders to benefit

(Wiig, 1997). Knowledge management can be considered one of the main drivers for organisational change and wealth development and has a significant role for organisations as the theories objectives are to make the enterprise act optimally and intelligently to achieve viability and overall success as well as to understand the value of its knowledge assets (Wiig, 1997).

Management approaches that are incorporated into healthcare organisations generally lag behind those in other industries and its adoption has been challenging (Morr & Julien, 2010). Healthcare organisations are concerned with providing a service that relies mainly on evidence-based medicine and the interaction between different medical professionals but rarely involves itself with other knowledge including concepts of business management and sustainable business practices (Crow et al, 2002).

According to previous studies conducted on different healthcare professionals, business concept knowledge gaps are present within the healthcare industry and any gaps in management knowledge can have detrimental effects on the success of the industry and the organisation (Henson et al, 2008). There is a need for in-depth and expanded business training and education in health professions including Chiropractors and Audiologists where concepts of ethics human resources, strategic management, marketing, operations management, finance, managerial decision making and accounting were explored (Henson et al, 2008; Breytenback et al, 2015). Chiropractors in the United States of America highlighted the importance and need for accounting and finance knowledge above the other principles of business management (Henson et al, 2008). Furthermore, the conclusion that a drastically adjusted and re-developed business training programme for Chiropractors was evident (Henson et al, 2008). It is suggested that short courses and seminars may not be adequate to explore the depth and broadness of the above-mentioned concepts (Henson et al, 2008).

Audiologists' in South Africa reported similar needs to those of the Chiropractors (Breytenback et al, 2015). Regardless of the audiologist's work environment, the respondents indicated that significant development of practice management knowledge was needed to understand the marketplace, compete effectively and to improve the chances of being successful (Breytenback et al, 2015). The study results

found by Moss and Lubbe (2011) mirror the concerns that Biokineticists are not adequately prepared in business knowledge concepts to run a practice effectively and efficiently or implement oneself as an impactful employee within an organisational environment (Moss & Lubbe, 2011).

2.8 Conclusion

Current studies on business management knowledge needs and gaps in health professionals have been limited to Chiropractors and Audiologist (Breytenbach et al, 2015; Henson et al, 2008). Studies have also been limited to the legal and regulatory environment and the knowledge of health professionals on the topic (Henson, Bruke, Crow & Hartman, 2005). Research that explores business knowledge training needs and gaps have not been conducted on South African Biokineticists to the researcher's knowledge (Ellapen et al, 2018; Moss & Lubbe, 2011). The surveys that were completed by the North American Chiropractors and South African Audiologists lack questions that include concepts of business sustainability and the importance of corporate social responsibility (Breytenbach et al, 2015; Henson et al, 2008).

Based on current literature, business knowledge needs and gaps for healthcare practitioners are present and this could lead to poor business management (Henson et al, 2008). If poor business management is present; income, wealth creation and benefit to other stakeholders can be impacted negatively (Henson et al, 2008). If shortfalls can be identified health practitioners like Biokineticists can improve their financial gain while improving their impact on patients and the industry while acting in an ethical manner which can lead to creating a better chance of being viable and sustainable in modern society (Moss & Lubbe, 2011).

By implementing and exposing healthcare practitioners such as Biokineticists to concepts such as business sustainability, corporate social responsibility and knowledge management, a more effective business practice may be developed while keeping ethics and patient wellbeing a primary priority. It may also better prepare healthcare practitioners to maintain all aspects of business sustainability within their respective business environments and deal with world-changing phenomena such as the 2019 SARS-Cov-2 pandemic.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Research Paradigm

Research assumptions refer to a set of beliefs and philosophies that guide a researcher on how to conduct knowledge acquisition and development (Saunders, Lewis & Thornhill, 2009:124). These assumptions consist of ontological assumptions which concern itself with determining the nature of reality, epistemology assumptions which concerns itself with identifying what we know and how we know it, axiological philosophical assumptions which concern itself with identifying and establishing the role of research and the value it has as well as the ethical considerations that are embedded in research and the methodology of a paradigm which is the term used to describe how a research project is designed and what procedures are implemented for data collection as well as data analysis (Saunders et al, 2009; Kivunja & Kuyini, 2017)

There are four dominant paradigms in research including the positivism paradigm, the interpretive paradigm, the critical paradigm, and the pragmatic paradigm (Kivunja & Kuyini, 2017).

A positivism paradigm approach and world view underpins the following study and follows the laws set out that only objective, observable and quantifiable data can be used to develop a basis for science and scientific fact (Maree, 2016: 22). Positivism first appeared in work by Auguste Comte and merged into the existing tradition of analytic philosophy (Feigl, 2019). The following paradigmatic assumption suggests external reality is stable and general laws dictate and govern how the universe works (Maree, 2016: 35-36). The assumption also suggests that the researcher is objective by nature and is a detached observer of what is happening (Maree, 2016: 36).

The use of a positive paradigm has helped determine with quantitative evidence if further learning and training are required by South African Biokineticists to develop adequate and satisfactory business knowledge (Maree, 2016: 40). To conclude inferences have been made with the use of estimations and confidence intervals.

3.2 Research Design

A quantitative, exploratory, cross-sectional, deductive, and combination of inferential and descriptive research design was conducted with the use of an online-based survey. Non-probability, convenience sampling was used with the unit of analysis being fully qualified South African Biokineticists registered with BASA. Descriptive statistics including measures of variability and measures of central tendency were used to analyse the data and the results will be interpreted by the researcher (Maree, 2016:204-216; Wegner, 2012:63-87). Measures of central tendency including the mean, median and mode were reported on. Measures of variability including standard deviation, variance, range, and skewness were reported on (Maree, 2016:204-216; Wegner, 2012:63-87). Inferential statistics including estimations and confidence intervals were used to further analyse the data. The level of confidence for the research was set to 95% ($p \leq 0.05$).

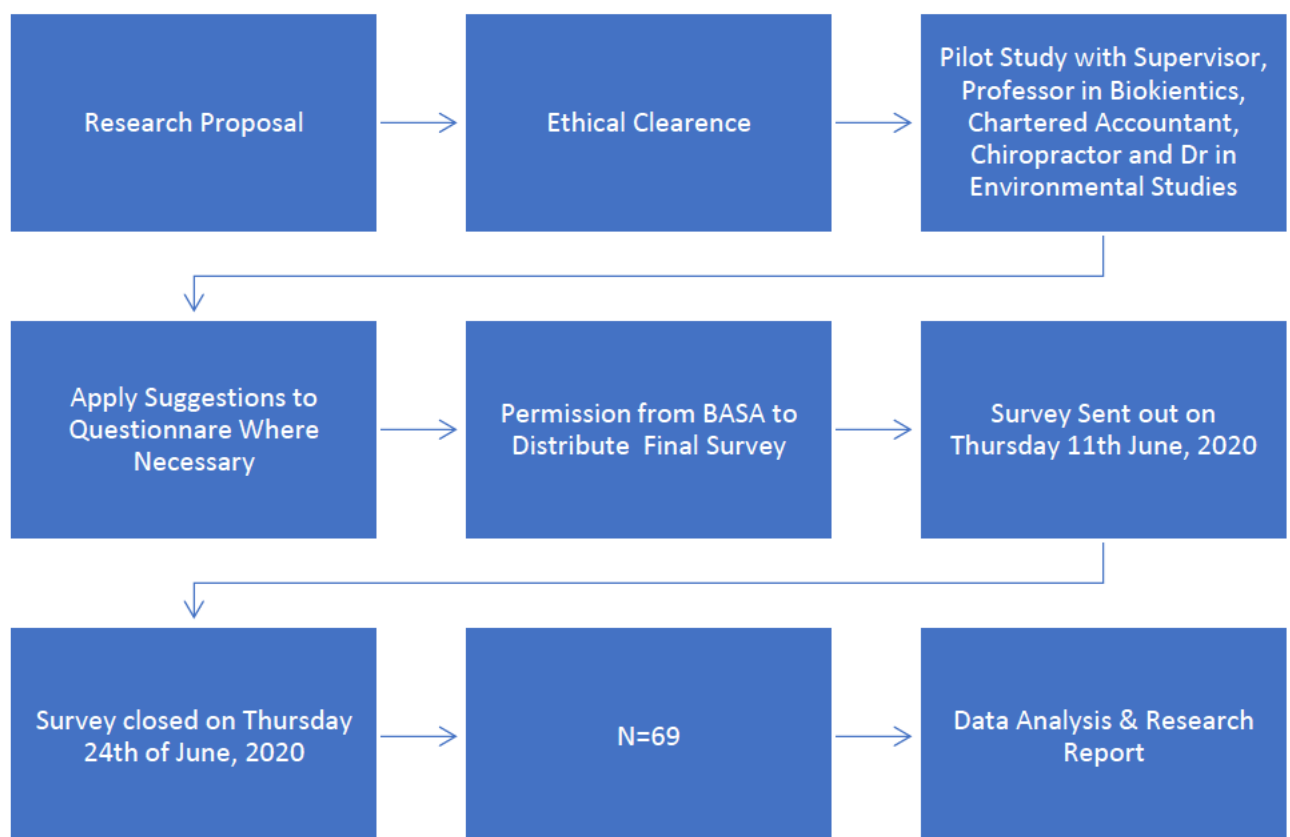


Figure 3.1: Research Design

3.3 Population and Sampling

The population used for the following study was South African Biokineticists that were registered with the Biokinetics Association of South Africa (BASA). The unit of analysis was the opinions of the individual practitioner answering the questions about their business knowledge training needs required. The research used a sample of 69 individuals registered with BASA. BASA members were sent an email from the organisation (Appendix A) with an attached information sheet detailing the study (Appendix B) as well as a link to the online survey (Appendix C). The information letter was also added to the survey itself before the questions. Informed consent was given on the survey after reading the information letter. Non-probability, convenience sampling was used. The reason for the use of this type of sampling method was due to its ease of application when reaching out to the population. This sampling method will not have included any practising Biokineticist in South Africa who was not registered with BASA. No participant was excluded from the study.

3.4 Data Collection Method

The data collection method used in this study was an online-based survey that was sent to BASA registered Biokineticists via email. The survey was sent as a link to possible respondents who had to read the attached information letter and the consent form. The survey was created with Microsoft Forms. They had to follow the instructions and answer the questions that followed. This type of data collection method was ideal for the current circumstances of practising social distancing due to COVID-19. The method was also cost-effective for the researcher and it allowed the respondents to complete the survey in their own time and no researcher bias would present due to the lack of interaction between the researcher and the respondent. This was also emphasized by using BASA to distribute the survey, further distancing research bias from the respondents (Maree, 2016: 176-177). The first email was sent out on the 11th of June 2020. A reminder email was sent out to the BASA community on the 17th of June 2020. The study was closed on the 24th of June, two weeks after it began.

3.5 Data Collection Tool Design

The survey that was sent to BASA registered Biokineticists included questions about graduation period, University where studies were completed, a 5-point Likert Scale where 1 was very low, 2 was low, 3 was moderate, 4 was high and 5 was very high and an open-ended final question asking for any other business knowledge training needs required.

Before sending out the survey a pilot was conducted with my supervisor Mr Karel Marais, Professor Leon Lategan, an associate professor in the Department of Sports and Movement Studies and Director Advisory of BASA, Dr Ralph Gregory Heath (Fresh Water Ecology), Neil Lumb a Chartered Accountant and Mrs Jessica Aileen Heath (Chiropractor Intern). Feedback on alterations and bugs was provided. Professor Leon Lategan did not complete the final survey sent out.

3.6 Statistical Analysis

The level of confidence for the research was set to 95% ($p \leq 0.05$). the research made use of descriptive statistics, including means, medians, minimums, maximums, and standard deviations. It also included frequencies. Inferential statistics were used, including estimations and confidence intervals. The data was analysed in Microsoft Excel with the use of its built-in data analysis add on pack.

CHAPTER FOUR: RESULTS

4.1 Introduction

The study used a sample of 69 (n=69) BASA registered Biokineticists practising in South Africa. The sample was drawn using convenience sampling and the study was conducted online. This sample was used to describe and highlight the business knowledge training needs of South African Biokineticists to ensure business sustainability. The data used consisted of measures of central tendency, descriptive statistics, frequencies, and inferential statistics. This chapter presents the results of the analysis of the data collected from the sample group. It begins with detailing graduation period and universities studied at. It then moves towards presenting the results of the Likert-scale and the final open-ended question.

4.2 Graduation Period

The participants grouped according to graduation period were as follows: 1985-1989 consisted of 1 participant (2%), 1990-1994 consisted of 2 participants (3%), 1995-1999 consisted of 2 participants (3%), 2000-2004 consisted of 15 participants (22%), 2005-2009 consisted of 14 participants (20%), 2010-2014 consisted of 14 participants (20%) and 2015-2019 consisted of 21 participants (30%).

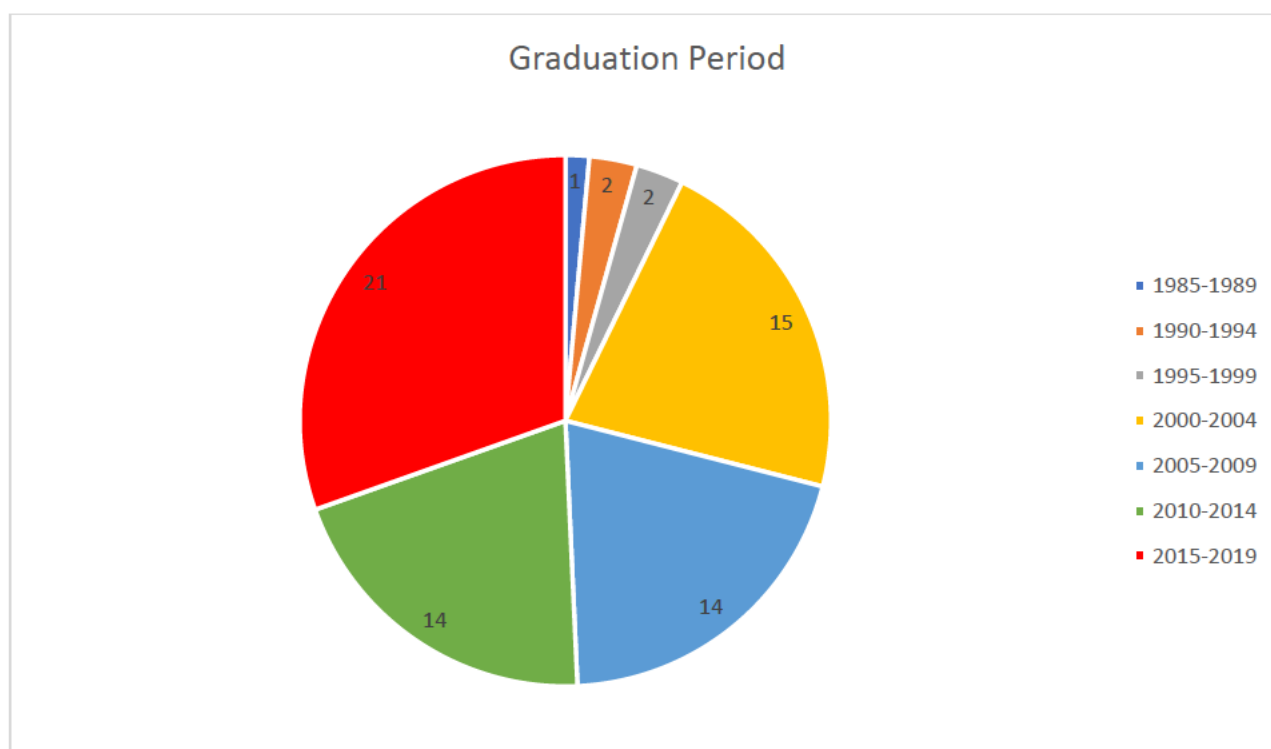


Figure 4.1: A pie chart representing the percentage and count of the participants graduation period (years)

Table 4.1: Graduation period count

Graduation Period (years)	Count of Graduation Period (N)
1985-1989	1
1990-1994	2
1995-1999	2
2000-2004	15
2005-2009	14
2010-2014	14
2015-2019	21
Total Count (N)	69

4.3 University Where Studies Took Place

Participants grouped according to the university where they studied Biokinetics were as follows: the University of Cape Town had 4 graduates (5.8%), the University of Johannesburg had 7 graduates (10.1%), University of Witwatersrand (7.3%), Tshwane University of Technology had 0 graduates (0%), Nelson Mandela University had 10 graduates (14.5%), University of Stellenbosch had 6 graduates (8.7%), North-West University had 10 graduates (14.5%), University of KwaZulu-Natal had 0 graduates (0%), University of Zululand had 8 graduates (11.6%), University of Pretoria had 8 graduates (11.6%), University of the Free State had 8 graduates (11.6%), University of the Western Cape had 1 graduate (1.5%) and the two other universities included the Rand Afrikaans University (1.5%) and the University of Venda (1.5%) (Figure 4.2 & Table 4.2).

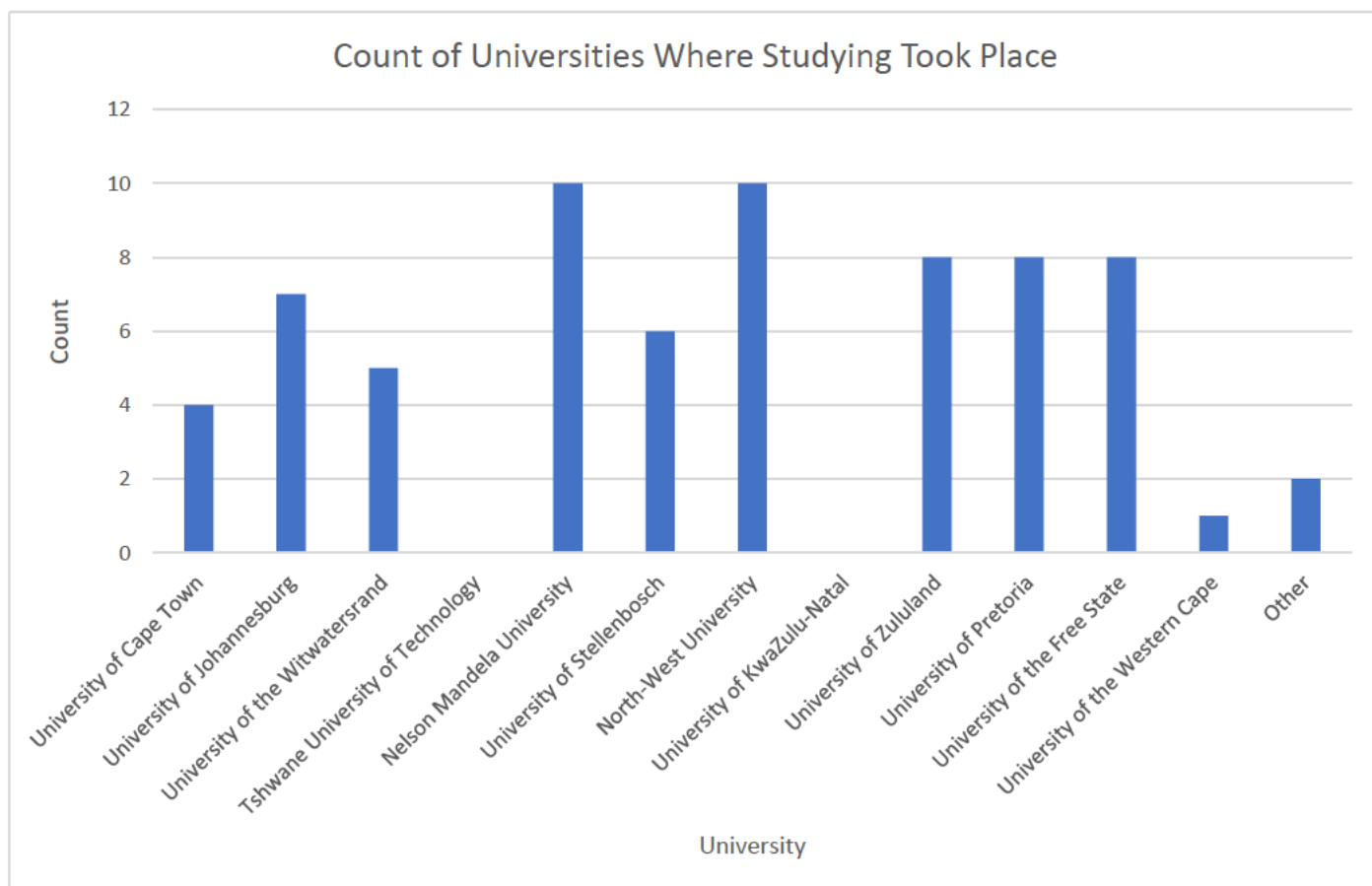


Figure 4.2: A bar graph detailing where the participants studied

Table 4.2: University where participants studied

University	Percentage	Count (N)
University of Cape Town	5,8%	4
University of Johannesburg	10,1%	7
University of the Witwatersrand	7,2%	5
Tshwane University of Technology	0,0%	0
Nelson Mandela University	14,5%	10
University of Stellenbosch	8,7%	6
North-West University	14,5%	10
University of KwaZulu-Natal	0,0%	0
University of Zululand	11,6%	8
University of Pretoria	11,6%	8
University of the Free State	11,6%	8
University of the Western Cape	1,4%	1
Other	2,9%	2
Total	100%	69

4.4 Business Knowledge Training Needs

The distribution for the needs of the following business concepts were as follows:

Accounting (very low: 18.8%, low: 18.8%, moderate: 34.8%, high: 23.2%, very high: 4.3%), business sustainability (very low: 11.6%, low: 21.7%, moderate: 33.3%, high: 24.6%, very high: 8.7%), corporate social responsibility (very low: 14.5%, low: 23.2%, moderate: 39.1%, high: 17.4%, very high: 5.8%), ethics (very low: 7.2%, low: 11.6%, moderate: 26.1%, high: 30.4%, very high: 24.6%), financial management (very low: 2.9%, low: 36.2%, moderate: 26.1%, high: 24.6%, very high: 10.1%), human resource management (very low: 11.6%, low: 26.1%, moderate: 33.3%, high: 24.6%, very high: 4.3%), leadership and managerial decision making (very low: 8.7%, low: 21.7%, moderate: 26.1%, high: 30.4%, very high: 13%), marketing (very low: 5.8%, low: 17.4%, moderate: 36.2%, high: 29%, very high: 11.6%), operational management (very low: 10.1%, low: 18.8%, moderate: 31.9%, high: 24.6%, very high: 14.5%) and strategic management (very low: 10.1%, low: 33.3%, moderate: 23.2%, high: 24.6%, very high: 8.7%) (Figure 4.2 & Table 4.3).

Table 4.3: Distribution of business knowledge training needs

Business Knowledge Need /Likert Scale Rating	Very Low (1)	Low (2)	Moderate (3)	High (4)	Very High (5)	Ranking according to high and very high knowledge needs
Accounting	18.8% (13)	18.8% (13)	34.8% (24)	23.2% (16)	4.3% (3)	8
Business Sustainability	11.6% (8)	21.7% (15)	33.3% (23)	24.6% (17)	8.7% (6)	6 (tied with Strategic Management)
Corporate Social Responsibility	14.5% (10)	23.2% (16)	39.1% (27)	17.4% (12)	5.8% (4)	9
Ethics	7.2% (5)	11.6% (8)	26.1% (18)	30.4% (21)	24.6% (17)	1
Financial Management	2.9% (2)	36.2% (25)	26.1% (18)	24.6% (17)	10.1% (7)	5
Human Resource Management	11.6% (8)	26.1% (18)	33.3% (23)	24.6% (17)	4.3% (3)	7
Leadership and Managerial Decision Making	8.7% (6)	21.7% (15)	26.1% (18)	30.4% (21)	13% (9)	2
Marketing	5.8% (4)	17.4% (12)	36.2% (25)	29% (20)	11.6% (8)	3
Operational Management	10.1% (7)	18.8% (13)	31.9% (22)	24.6% (17)	14.5% (10)	4
Strategic Management	10.1% (7)	33.3% (23)	23.2% (16)	24.6% (17)	8.7% (6)	6 (tied with Business Sustainability)

* Frequency/count has been provided in brackets

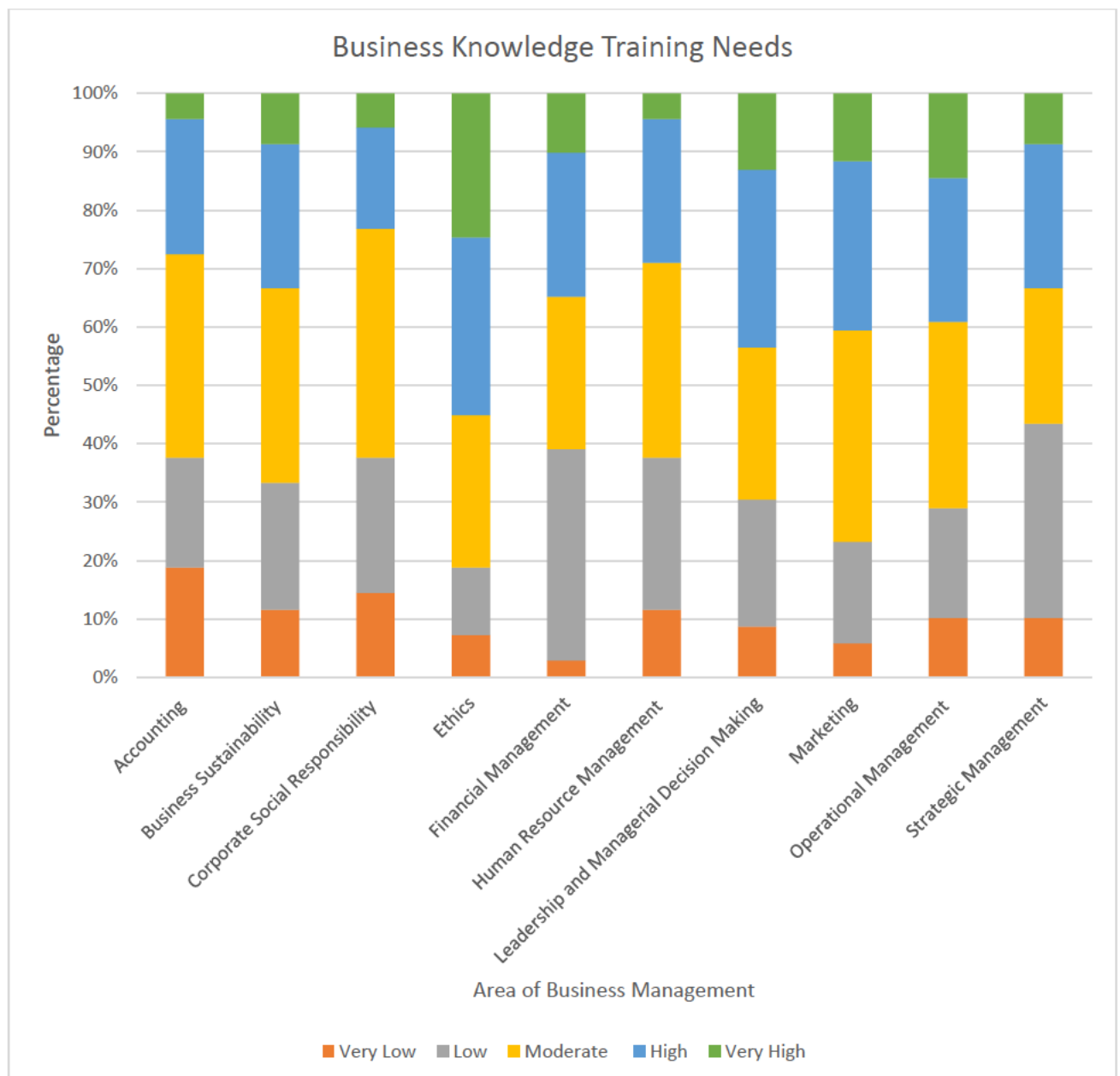


Figure 4.3: A bar graph detailing the distribution of business knowledge training needs amongst South African Biokineticists according to the field of business

4.4.1 Accounting

The mean need for accounting knowledge training for the sample was 2.75 ± 1.14 on the Likert scale placing it between a low and moderate need. We are 95% confident that the population mean need lies between 2.47 and 3.02, placing the business knowledge training needs for accounting by South African Biokineticists registered with BASA between low and high (2-4) (Table 4.3).

Table 4.4: Accounting statistics

<i>Accounting</i>	
Mean	2,753623
Standard Error	0,13758
Median	3
Mode	3
Standard Deviation	1,142827
Sample Variance	1,306053
Kurtosis	-0,85609
Skewness	-0,10476
Range	4
Minimum	1
Maximum	5
Sum	190
Count	69
Confidence Level (95,0%)	0,274537
Lower	2,479086
Higher	3,02816

4.4.2 Business Sustainability

The mean need for business sustainability knowledge training for the sample was 2.97 ± 1.13 on the Likert scale placing it between a low and moderate need. We are 95% confident that the population mean need lies between 2.69 and 3.24, placing the business knowledge training needs for business sustainability by South African Biokineticists registered with BASA between low and high (2-4) (Table 4.5).

Table 4.5: Business sustainability statistics

<i>Business Sustainability</i>	
Mean	2,971014
Standard Error	0,136905
Median	3
Mode	3
Standard Deviation	1,137218
Sample Variance	1,293265
Kurtosis	-0,68979
Skewness	-0,0654
Range	4
Minimum	1
Maximum	5
Sum	205
Count	69
Confidence Level (95,0%)	0,27319
Lower	2,697825
Higher	3,244204

4.4.3 Corporate Social Responsibility

The mean need for corporate social responsibility knowledge training for the sample was 2.77 ± 1.09 on the Likert scale placing it between a low and moderate need. We are 95% confident that the population mean need lies between 2.51 and 3.03, placing the business knowledge training needs for corporate social responsibility by South African Biokineticists registered with BASA between low and high (2-4) (Table 4.6).

Table 4.6: Corporate social responsibility statistics

<i>Corporate Social Responsibility</i>	
Mean	2,768116
Standard Error	0,130813
Median	3
Mode	3
Standard Deviation	1,086615
Sample Variance	1,180733
Kurtosis	-0,48395
Skewness	0,055647
Range	4
Minimum	1
Maximum	5
Sum	191
Count	69
Confidence Level (95,0%)	0,261034
Lower	2,507082
Higher	3,029149

4.4.4 Ethics

The mean need for ethics knowledge training for the sample was 3.54 ± 1.2 on the Likert scale placing it between a moderate and high need. We are 95% confident that the population mean need lies between 3.25 and 3.82, placing the business knowledge training needs for ethics by South African Biokineticists registered with BASA between moderate and high (3-4) (Table 4.7).

Table 4.7: Ethics statistics

<i>Ethics</i>	
Mean	3,536232
Standard Error	0,143901
Median	4
Mode	4
Standard Deviation	1,195331
Sample Variance	1,428815
Kurtosis	-0,52529
Skewness	-0,51378
Range	4
Minimum	1
Maximum	5
Sum	244
Count	69
Confidence Level (95,0%)	0,28715
Lower	3,249082
Higher	3,823382

4.4.5 Financial Management

The mean need for financial management knowledge training for the sample was 3.03 ± 1.07 on the Likert scale placing it between a moderate and high need. We are 95% confident that the population mean need lies between 2.77 and 3.3, placing the business knowledge training needs for financial management for South African Biokineticists registered with BASA between low and high (2-4) (Table 4.8).

Table 4.8: Financial management statistics

<i>Financial Management</i>	
Mean	3,028986
Standard Error	0,128886
Median	3
Mode	2
Standard Deviation	1,07061
Sample Variance	1,146206
Kurtosis	-0,90351
Skewness	0,311264
Range	4
Minimum	1
Maximum	5
Sum	209
Count	69
Confidence Level (95,0%)	0,257189
Lower	2,771797
Higher	3,286174

4.4.6 Human Resource Management

The mean need for human resource management knowledge training for the sample was 2.84 ± 1.07 on the Likert scale placing it between a low and moderate need. We are 95% confident that the population mean need lies between 2.58 and 3.1, placing the business knowledge training needs for human resource management for South African Biokineticists registered with BASA between low and high (2-4) (Table 4.9).

Table 4.9: Human resource management statistics

<i>Human Resource Management</i>	
Mean	2,84058
Standard Error	0,12831
Median	3
Mode	3
Standard Deviation	1,065822
Sample Variance	1,135976
Kurtosis	-0,68778
Skewness	-0,04724
Range	4
Minimum	1
Maximum	5
Sum	196
Count	69
Confidence Level (95,0%)	0,256038
Lower	2,584541
Higher	3,096618

4.4.7 Leadership and Managerial Decision Making

The mean need for leadership and managerial decision-making knowledge training for the sample was 3.17 ± 1.18 on the Likert scale placing it between a moderate and high need. We are 95% confident that the population mean need lies between 2.89 and 3.5, placing the business knowledge training needs for leadership and managerial decision making for South African Biokineticists registered with BASA between low and high (2-4) (Table 4.10).

Table 4.10: Leadership and managerial decision-making statistics

<i>Leadership and Managerial Decision Making</i>	
Mean	3,173913
Standard Error	0,141476
Median	3
Mode	4
Standard Deviation	1,175191
Sample Variance	1,381074
Kurtosis	-0,84336
Skewness	-0,18066
Range	4
Minimum	1
Maximum	5
Sum	219
Count	69
Confidence Level (95,0%)	0,282312
Lower	2,891601
Higher	3,456225

4.4.8 Marketing

The mean need for marketing knowledge training for the sample was 3.23 ± 1.06 on the Likert scale placing it between a moderate and high need. We are 95% confident that the population mean need lies between 2.98 and 3.49, placing the business knowledge training needs for marketing for South African Biokineticists registered with BASA between low and high (2-4) (Table 4.11).

Table 4.11: Marketing statistics

<i>Marketing</i>	
Mean	3,231884
Standard Error	0,127513
Median	3
Mode	3
Standard Deviation	1,059202
Sample Variance	1,12191
Kurtosis	-0,43019
Skewness	-0,17755
Range	4
Minimum	1
Maximum	5
Sum	223
Count	69
Confidence Level (95,0%)	0,254448
Lower	2,977436
Higher	3,486332

4.4.9 Operational Management

The mean need for operational management knowledge training for the sample was 3.14 ± 1.19 on the Likert scale placing it between a moderate and high need. We are 95% confident that the population mean need lies between 2.86 and 3.43, placing the business knowledge training needs for operational management for South African Biokineticists registered with BASA between low and high (2-4) (Table 4.12).

Table 4.12: Operational management statistics

<i>Operational Management</i>	
Mean	3,144928
Standard Error	0,143449
Median	3
Mode	3
Standard Deviation	1,19158
Sample Variance	1,419864
Kurtosis	-0,76249
Skewness	-0,12701
Range	4
Minimum	1
Maximum	5
Sum	217
Count	69
Confidence Level (95,0%)	0,286249
Lower	2,858679
Higher	3,431176

4.4.10 Strategic Management

The mean need for strategic management knowledge training for the sample was 2.88 ± 1.16 on the Likert scale placing it between a low and moderate need. We are 95% confident that the population mean need lies between 2.61 and 3.16, placing the business knowledge training needs for strategic management for South African Biokineticists registered with BASA between low and high (2-4) (Table 4.13).

Table 4.13: Strategic management statistics

<i>Strategic Management</i>	
Mean	2,884058
Standard Error	0,13932
Median	3
Mode	2
Standard Deviation	1,157282
Sample Variance	1,339301
Kurtosis	-0,90824
Skewness	0,17378
Range	4
Minimum	1
Maximum	5
Sum	199
Count	69
Confidence Level (95,0%)	0,278009
Lower	2,606049
Higher	3,162067

4.4.11 Total Business Knowledge Training Needs

The total mean need for business management knowledge training for the sample was 30.32 ± 8.19 on the Likert scale placing it between a moderate and high need. We are 95% confident that the population mean need lies between 28.35 and 32.29, placing the overall business knowledge training needs for South African Biokineticists registered with BASA between low and high (20-40) (Table 4.14).

Table 4.14: Total business knowledge training needs statistics

<i>Total</i>	
Mean	30,31884
Standard Error	0,98594
Median	31
Mode	40
Standard Deviation	8,18983
Sample Variance	67,07332
Kurtosis	-0,23709
Skewness	-0,07309
Range	38
Minimum	12
Maximum	50
Sum	2092
Count	69
Confidence Level (95,0%)	1,967412
Lower	28,35143
Higher	32,28625

4.5 Suggestions for Other Business Knowledge Training Needs

The final open-ended question of the survey asked the participants to suggest any other business knowledge training they needed. Forty-eight (69.6%) of the participants provided an answer that suggested they needed alternative business knowledge training that was not mentioned in the previous Likert-scale question. twenty-one (30.4%) of the participants suggested they did not need any alternative business knowledge training needs or responded with not applicable (Figure 4.4).

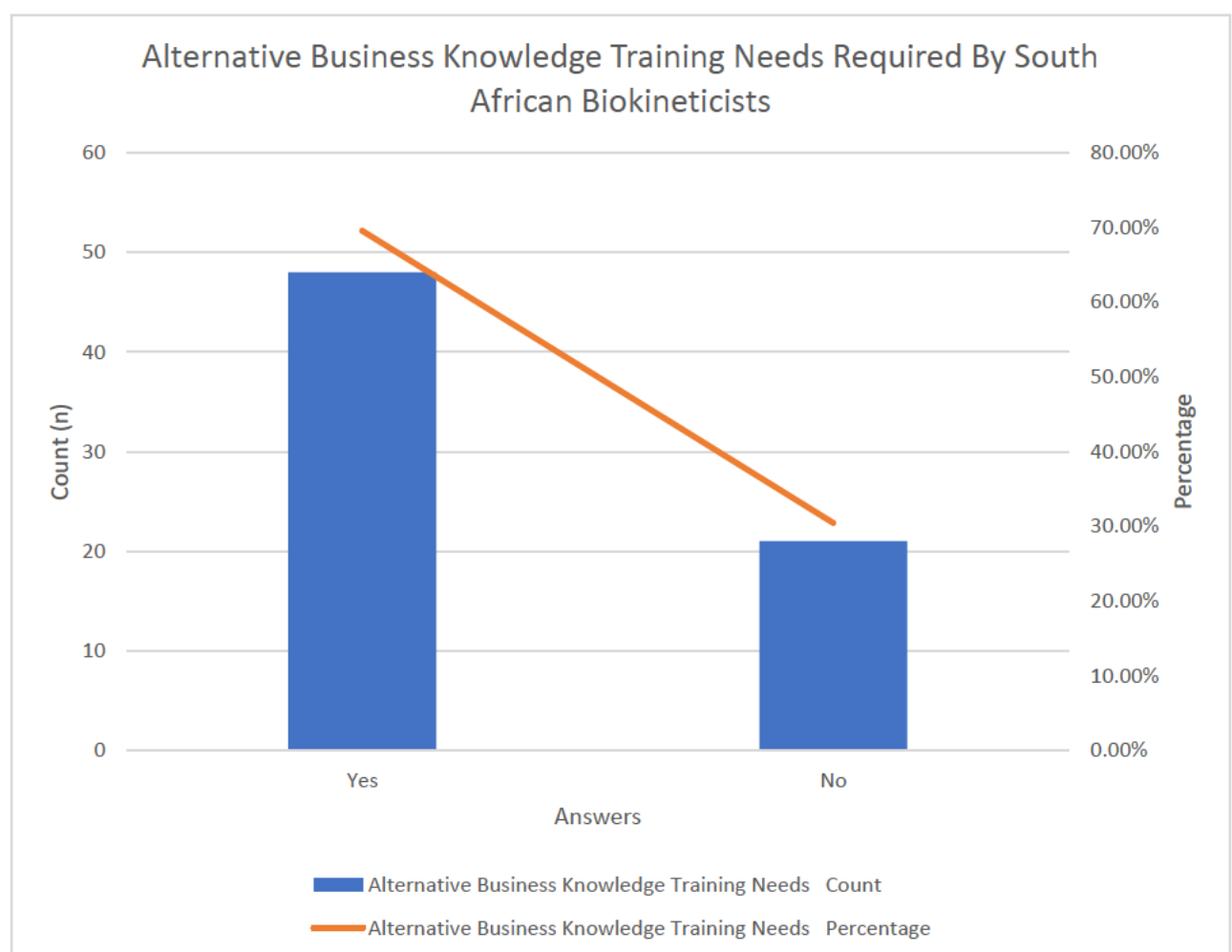


Figure 4.4: Alternative business knowledge training needs required by BASA Biokineticists

4.6 The Most Requested Business Knowledge Training Needs Asked for by BASA Biokineticists

The final open-ended question of the survey was sorted and coded into three main categories including information technology management (n=8, 17.02%), tax management (n=9, 19.15%) and ICD-10 and medical aid training (n=6, 12.77%). The other requests and suggestions could be categorised into one of the already ten mentioned business knowledge areas addressed in the previous question (n=25, 51.06%) (Figure 4.5).

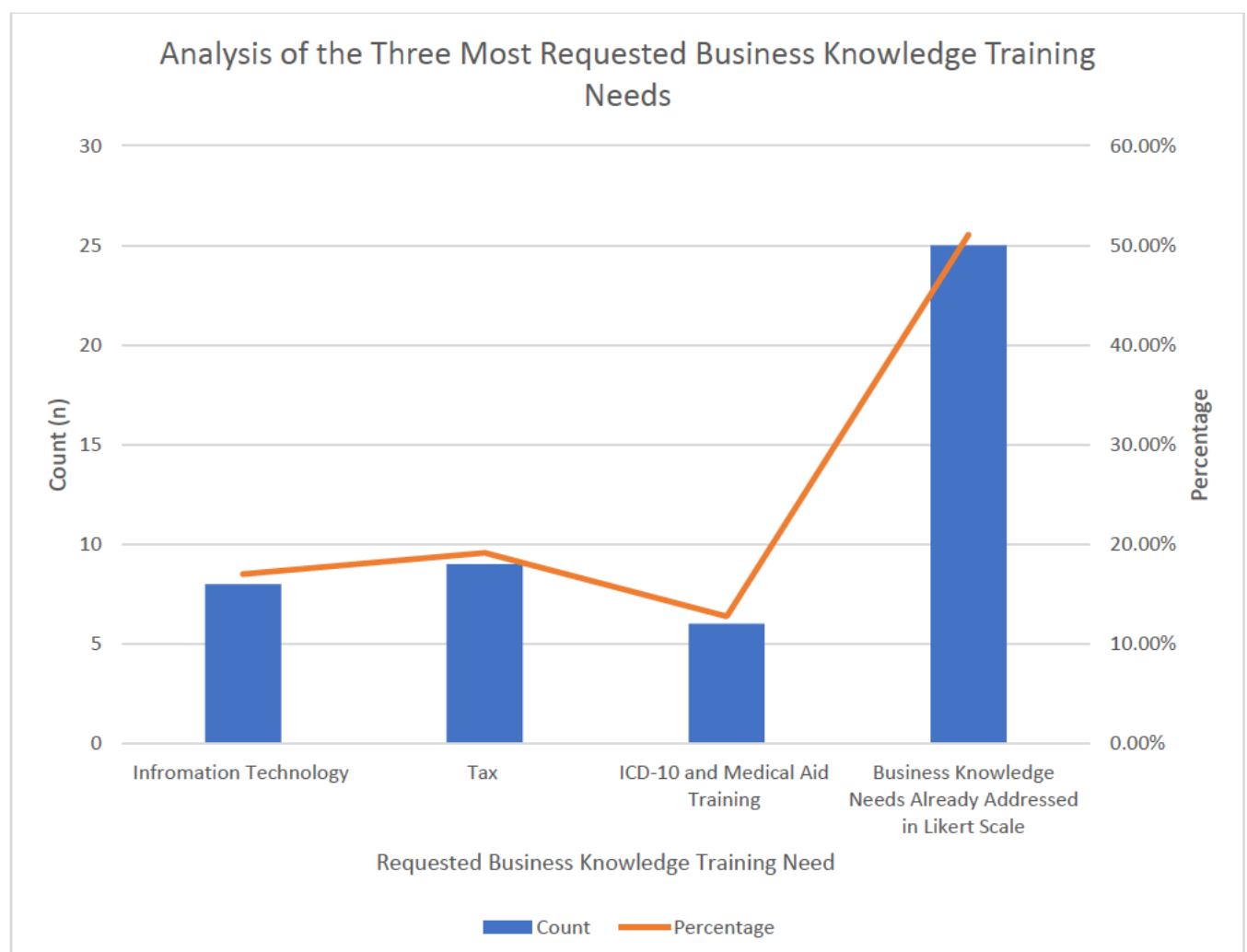


Figure 4.5: Analysis of the three most requested business knowledge training needs by BASA Biokineticists

CHAPTER FIVE: DISCUSSION

5.1: Business Knowledge Training Needs of BASA registered Biokineticists

In this chapter, results obtained from the data analysis process conducted in Chapter Four will be discussed and compared with findings of other available and similar research.

Very low and low results, as well as high and very high results, have been combined so to compare to previous studies that had done the same (Breytenbach, Kritzinger & Soer, 2015; Henson, Presslet & Korfmann, 2008). Results presented in Table 5.1 compares the current studies results with that of studies of similar design that were conducted with North American Chiropractors and South African Audiologists (Breytenbach, Kritzinger & Soer, 2015; Henson, Presslet & Korfmann, 2008).

The design of the two compared studies differ from the current study in several ways including the design of the Liker-scale where only 4 possible choices were provided (very low, low, high and very high), the type of questions asked (the two compared studies asked participants to evaluate their perceived existing levels of knowledge regarding practice management tasks) and the number of management tasks asked to evaluate (eight). The two studies did not include business sustainability or corporate social responsibility in their questionnaire (Breytenbach, Kritzinger & Soer, 2015; Henson, Presslet & Korfmann, 2008).

Table 5.1: Comparison of business knowledge training needs across studies

Business Knowledge	Business knowledge training needs for South African Biokinetics		Required practice management knowledge for South African Audiologists		Business training and education needs of North American Chiropractors	
	Very Low & Low	High & Very High	Very low & Low	High & Very High	Very low & Low	High & Very High
Accounting	37.6%	27.5%	8.3%	91.7%	N/A	79%
Business Sustainability	33.3%	33.3%	N/A	N/A	N/A	N/A
CSR (Corporate Social Responsibility)	37.7%	23.2%	N/A	N/A	N/A	N/A
Ethics	18.8%	55%	4.8%	95.2%	N/A	81%
Financial Management	39.1%	34.7%	8.2%	91.8%	N/A	83%
HR Management	37.7%	28.9%	10.9%	89.1%	N/A	89%
Leadership	30.4%	43.4%	10.3%	89.7%	N/A	70%
Marketing	23.2%	40.6%	4.2%	95.8%	N/A	82%
Operational Management	28.9%	39.1%	10.3%	89.7%	N/A	62%
Strategic Management	43.4%	33.3%	8.3%	91.7%	N/A	86%

* N/A = not reported on in the study

The results of the above three studies are not directly comparable due to the current study using a 5 point Likert-scale (very low, low, moderate, high and very high) compared to the 4 point Likert-scale used in the Audiologist and Chiropractic studies

(very low, low, high, very high). However, the ranking of importance for the business management fields can be compared.

South African Biokineticists ranked ethics (55%) as their highest required need for further training compared to human resource management (89%) for North American Chiropractors and marketing for South African Audiologists (95.8%). Interestingly, South African Audiologists ranked ethics as their second-highest need (95.2%). North American Chiropractors ranked ethics and law as their fifth-highest knowledge need (81%) (Breytenbach, Kritzingers & Soer, 2015; Henson, Presslet & Korfmann, 2008).

A reason for this could be due to the high level of corruption and unethical behaviour that is present throughout South Africa's society indicated by the extremely poor Corruption Perceptions Index (CPI) score achieved in 2019 (44/100) (South Africa Corruption Index 1996-2019 Data, 2020). Ethics can be described as the business process that concerns itself with ethical decision making and what is considered the correct thing to do at a given point in time. It takes into consideration contracts, laws, and regulations that govern and guide organisations, governments, and society (Henson, Pressley & Korfmann, 2008).

South African Biokineticists ranked leadership and managerial decision-making skills as their second-highest business knowledge training need (43.4%). This could be due to practitioners working in small private practices where they have a team or are building towards assembling a team of practitioners to work towards achieving common goals and objectives. This would require leadership skills and theories to successfully achieve. Leadership was ranked seventh for both South African Audiologists (89.7%) and North American Chiropractors (70%).

Leadership and managerial decision making can be described as a theory that is focused on an individual's vision. This encompasses the challenges, processes, and end product of the vision (Bryman, Collinson, Grint, Jackson & Uhl-Bein, 2017). Leadership involves itself by setting an example and guiding followers in an ethical way towards achieving results while taking into consideration all stakeholders around them. It can also be summarised into a combination of four approaches, including leadership as a person, leadership as a process, leadership as a position and leadership as a result (Iszatt-White and Saunders, 2017).

The Biokinetics sample went on to rank marketing as their third-highest business knowledge training need (40.6%). In contrast, The South African Audiologist sample (91.8%) and North American Chiropractic sample (83%) ranked finance as their third most needed business knowledge skill. Marketing can be described as the business process of defining and selecting potential target markets. It is also concerned with the management of the product/service, pricing, and communication (Henson, Pressley & Korfmann, 2008). The importance of marketing is crucial for any business as the creation of demand for a product or service drives the need for other business management processes (Breytenbach, Kritzinger & Soer, 2015).

The lowest-ranked business knowledge training needs for South African Biokineticists was corporate social responsibility (23.2%). This business management process was not asked in the other two studies (Breytenbach, Kritzinger & Soer, 2015; Henson, Presslet & Korfmann, 2008). This could be due to the lack of understanding on the concept as it is a relatively new theory that businesses are only now beginning to implement for success. CSR can be described as the business process that is focused on integrating business, social and environmental factors together to achieve a sustainable future for present and future stakeholders (Sustainability and Social Responsibility Module Manual, 2019). In comparison to the previous studies human resource management was ranked lowest for in terms of knowledge needs for South African Audiologists (89.1%) and operations management was ranked the lowest for needed knowledge for North American Chiropractors (62%) (Breytenbach, Kritzinger & Soer, 2015; Henson, Presslet & Korfmann, 2008).

The disproportional high to very high needs percentages of all the questions asked between the previous studies and the current study could be due to the different Likert-scale used. The moderate option in the current study provided an alternative option to describe their knowledge training needs for the business management processes without committing to an extreme.

In the current study, 69.6% (n=48) of the participants answered the final question with a response that suggested they needed alternative business knowledge training other than those mentioned in the previous question. Of the 48 alternative requests, the most common themes to present were information technology (17.02%), tax

management (19.15%) and ICD-10 and medical aid training (12.77%). The rest of the responses to the final question (51.06%) could be categorised into one of the already mentioned business management processes explored in the previous question.

This could suggest a lack of understanding about these concepts by the sample, further emphasising the general need for the population to have some form of basic management training implemented into the education process of becoming a Biokineticists.

When applying estimations with 95% confidence from the sample data to the population of BASA registered Biokineticists the overall business knowledge training needs (combined Likert-scale score) was between low and high (20-40). While not definitive it can suggest that a need exists and further studies that explore the exact business knowledge training required will be beneficial so to address the problem and provide a current and focused module for current and future BASA Biokineticists and possibly future health and medical professionals.

5.2 Validity, Reliability and Trustworthiness of the Findings

The findings are reliable and are supported by the use of a survey that was developed by conducting previous research that explored similar problems and utilised similar methodologies (Pressley & Kormann, 2008, Kennet, Henson, Crow & Harman, 2005; Crow & Hartman, 2002). All precautions were taken to try to present the questions clearly and concisely. This, however, may have not been the case due to the ambiguity between answers given in the Liker-scale and the final open-ended question (Maree, 2016:178-189).

The survey underwent a small pilot before being sent out to the target population. Responses, feedback, technical debugging, and recommendations were taken into consideration and applied to the questionnaire before being sent out.

The content validity of the survey was determined and checked by exploring previous literature and conducting a literature review as well as collaborating with the

researcher's supervisor. Furthermore, the content of the survey was also determined by the researcher's own experiences and educational background.

The data cannot be considered statistically significant as a sample size of ± 310 participants would be required based on the BASA Biokinetics population size of ± 1600 members when analysing at a confidence level of 95% and applying a margin of error of 5%. However, the results can be considered statistically significant at a confidence level of 90% and a margin of error of 10%.

5.3: Ethical Considerations

All participants that wanted to partake in the study were requested to read the information letter attached to the email (Appendix A). Digital consent was asked and required on the online survey to progress and submit answers (Appendix B).

Respect for all participants was upheld and their dignity and privacy were protected with the utmost integrity when conducting the research. All participants information has been kept private and all study data has been stored securely and will be done so for the next 5 years. The truthfulness of the study has been ensured by referencing all sources and by transparently documenting all findings with supporting documents and raw data (Chapter 3). Confidentiality of personal and private information has been ensured as a number was allocated to the participants, so anonymity was ensured. The only people who will have access to the data will be the researcher and the supervisor at the IEE Varsity College Cape Town campus. Ethical clearance from the IEE Varsity College was received before commencing with the study (Appendix C)

5.4: Limitations of the Study

Limitations of the current study include:

- Small sample size (n=69), A sample size of ± 310 would need to have been achieved to consider the descriptive data significant at a 95% confidence with a 5% margin of error.
- The short duration of the study (two weeks)
- Online based survey which tends to have low response rates ($\pm 4\%$ response rate based on ± 1600 BASA population)
- No hypothesis testing so limited inferences could be made from the sample to the population
- The current study did not differentiate between practitioners that worked for a practice, managed a practice, owned practice or was in academics and research

The following limitations impact the validity and reliability of the study, especially when extrapolating data to the population. Other methods of data collection may need to be implemented due to the low response rate ($\pm 4\%$) of the online survey, alternatively a longer testing period could be implemented with multiple reminders and follow-ups. The current pandemic limited the type of data collection methods that could ethically and safely be implemented and highlights the need to create new innovative ways of collecting data for research in the 21st century. Alternative methods could include invites through communication applications like Zoom and Skype where a face to face explanation of the study could be given to participants before they completed the questionnaire. Furthermore, differentiating between practitioners' roles within a practice when implementing the questionnaire may lead to different business knowledge needs arising between the different roles within the organisation.

CHAPTER SIX: CONCLUSION

6.1: Conclusion

The current study set out to explore and identify business knowledge training needs of South African Biokineticists to ensure business sustainability.

According to the results obtained a need exists for South African Biokineticists across the spectrum of business management and such topics need to be further explored to identify if there is a significant need or not. The most noticeable knowledge training needs included the areas of ethics, leadership and management and marketing. With this in mind a large percentage of very high and high business knowledge training needs were also present for the remaining seven business areas ($x > 20\%$).

To address the knowledge learning needs that exist in the South African Biokinetics population, innovative strategies would need to be incorporated strategically to address them successfully. These knowledge learning needs could be addressed by creating and implementing a comprehensive business module into the Biokinetics curriculum that highlights and explores different business theories, successful application of these theories and how they could be of benefit to the industry and to the students as future practitioners.

A strategy that offers comprehensive CPD courses could be used to address the needs of already practising Biokineticists. These courses could be offered by individuals that have expertise and experience in both health and medical fields as well as business management.

Furthermore, future studies could analyse if there are knowledge gaps present in South African Biokineticists by comparing the difference between perceived existing knowledge on a topic with that of knowledge needs.

It would also be recommended future studies assess topics such as information technology management and other technology-based modules to better prepare students and practitioners for the demands of the 21st century and the 4th Industrial revolution.

REFERENCES:

Aapc.com. 2020. *What Is Practice Management? - AAPC*. [Online] Available at: <<https://www.aapc.com/practice-management/practice-management.aspx>> [Accessed 23 May 2020].

Arowoshegbe, A., Emmanuel, U. & Gina, A. 2018. Sustainability and Triple Bottom Line: An Overview of Two Interrelated Concepts. *Researchgate*, 1(2): 88-126. [Online]. Available at: https://www.researchgate.net/publication/322367106_SUSTAINABILITY_AND_TRIPLE_BOTTOM_LINE_AN_OVERVIEW_OF_TWO_INTERRELATED_CONCEPTS [Accessed 29 April 2020].

Biokinetics Association of South Africa (BASA). 2020. Education and Qualifications. [Online]. Available at: https://www.biokineticssa.org.za/Public/Studying_MoreInfo [Accessed 11 March 2020].

Biokinetics Association of South Africa (BASA). 2020. About BASA. [Online]. Available at: https://www.biokineticssa.org.za/Public/Studying_MoreInfo [Accessed 11 March 2020].

Breytenbach, D, Kritzinger, A. and Soer, M. 2015. Audiology Practice Management in South Africa: What Audiologists Know and What They Should Know. *South African Journal of Communication Disorders*, 62(1): 1-12. [Online]. DOI: 10.4102/sajcd.v62i1.114 [Accessed 10 March 2020].

Bruder, P, Crow SM, Hartman SJ, Brockman EN and Henson SW. 2002. The Educational Needs of Healthcare Managers and Executives in Key Strategic Areas of Healthcare. *Hospital Topics*, 80(3):16-21. [Online]. DOI: 10.1080/00185860209597998 [Accessed 26 April 2020].

Brundtland, G. 1987. *Report of The World Commission on Environment and Development: Our Common Future*. United Nations General Assembly Document. [online] Oxford University Press, p.15. Available at: <http://file:///C:/Users/micha/Downloads/our_common_futurebrundtlandreport1987.pdf> [Accessed 28 March 2020].

Buffoli, M., Capolongo, S., Bottero, M., Cavagliato, E., Speranza, S. & Volpatti, L. 2013. Sustainable Healthcare: How to Access and Improve Healthcare Structures' Sustainability. *Annali di Igiene*, 25(5): 411-418. [Online]. 10.7416/ai.2013.1942 [Accessed 31 March 2020].

Crow, S., Hartman, S., Brockmann, E. & Henson, S. 2002. The Educational Needs of Healthcare Managers and Executives in the Key Strategic Areas of Healthcare.

Hospital Topics, 80(3): 16-20. DOI: 10.1080/00185860209597998 [Accessed 30 March 2020].

Darrell W. Krueger Library. 2020. *Evidence-Based Practice Toolkit*. [Online] Available at: <<https://libguides.winona.edu/c.php?g=11614&p=61584>> [Accessed 18 May 2020].

Dlamini, S., 2020. Smmes May Have Shed an Estimated 813 000 Jobs During Lockdown. [Online] IoL.co.za. Available at: <<https://www.iol.co.za/business-report/economy/smmes-may-have-shed-an-estimated-813-000-jobs-during-lockdown-46840253>> [Accessed 28 April 2020].

Education and Training Needs in the Healthcare Industry. *JONA'S Healthcare Law, Ethics, and Regulation*, 7(4): 114-118. [Online]. DOI: 10.1097/00128488-200510000-00007 [Accessed 6 April 2020].

Ellapen, J., Strydom, L., Swanepoel, M., Hammill, H., and Paul, Y. (February 7th, 2018). Biokinetics: A South African Health Profession Evolving from Physical Education and Sport, Sport and Exercise Science. *IntechOpen* 1(1):16-27: [Online]: DOI: 10.5772/intechopen.73126 [Accessed 10 March 2020]

Evans, R., Smith, T., Kay, P., McWade, D., Angouras, N., van Aarde, R., Arkell, R., Lamber, E. and van der Schyff, N. 2016. The need for Biokinetics in the South African public health care system. *South African Journal of Sports Medicine*, 26(3): 85-86. [Online]. DOI: 10.17159/2078-516X/2016/v28i3a1310 [Accessed 18 March 2020].

Fatoki, O., 2014. The Causes of the Failure of New Small and Medium Enterprises in South Africa. *Mediterranean Journal of Social Sciences*, 5(20), pp.922-927. [Online]. DOI: 10.5901/mjss.2014.v5n20p922 [Accessed 25 April 2020].

Feigl, H., 2019. Positivism. In: *Encyclopædia Britannica*, 1st ed. Encyclopædia Britannica, inc. [Online]. Available at: <https://www.britannica.com/topic/positivism> [Accessed 1 April 2020].

Ferreira, J., Mueller, J. & Papa, Armando. 2020. *Journal of Knowledge Management*, 24(2): 121-126. [Online]. DOI: 10.1108/JKM-07-2018-0461 [Accessed 9 April 2020].

Garvin, D., Edmondson, A. & Gino, F. 2008. Is Yours a Learning Organisation? *Harvard Business Review*, 86(3): 109-116, 134. [Online]. PMID: 18411968 [Accessed 31 March 2020].

Gounder, S. 2013. *Chapter 3 -Research Methodology and Research Method*. [Online]. Available at: https://www.researchgate.net/publication/333015026_Chapter_3_-_Research_Methodology_and_Research_Method [Accessed 18 May 2020].

Haughorn, J. 2014. Knowledge Management in Healthcare: It is More Important Than You Realize. *HealthCatalyst*, 3 November 2014. [Online]. Available at: <https://www.healthcatalyst.com/enable-knowledge-management-in-healthcare>

Heale, R and Twycross, A. 2015. Validity and Reliability in Quantitative Studies. *British Medical Journal*, 18(3): 66-67. [Online]. DOI: 10.1136/eb-2015-102129 [Accessed 4 May 2020].

Henson, S., Pressley, M. and Korfmann, S. 2008. Business Training and Education Needs of Chiropractors. *Journal of Chiropractic Education*, 22(2):145-151. [Online]. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2585951/pdf/JCE-22-2-145.pdf> [Accessed 23 February 2020].

HPCSA (Health Professions Council of South Africa). No 1746: Regulations defining the scope of Practise for the Profession of Biokinetics. 2013. Available from: <http://www/hpcsa.ac.za> [Accessed 10 March 2020].

Jooste, R., 2020. *Business Maverick: Webinar Q&A: The Effects of Covid-19 On South Africa SMME's*. [online] Daily Maverick. Available at: <https://www.dailymaverick.co.za/article/2020-04-02-webinar-qa-the-effects-of-covid-19-on-south-africa-smmes/> [Accessed 6 April 2020].

Kennet PA, Henson SW, Crow SM and Hartman SJ. 2005. Key Tasks in Healthcare Marketing: Assessing the Importance and Current Level of Knowledge. *The Journal of Health and Human Services Administration*, 27(4): 414-427. [Online]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/16318012> [Accessed 26 April 2020].

Khumalo, K., 2019. *At Least 47 Million South Africans Are Without Medical Aid Cover*. [online] IOL.co.za. Available at: <https://www.iol.co.za/business-report/economy/at-least-47-million-south-africans-are-without-medical-aid-cover-24336340> [Accessed 5 April 2020].

Kivunja, C and Kuyini, A. 2017. Understanding and Applying Research Paradigms in Educational Contexts. *International Journal of Higher Education*, 6(5): 26-41. [Online]. DOI: 10.5430/ijhe. v6n5p26. [Accessed 3 April 2020].

Lega, F., Prenestini, A. and Spurgeon, P. 2013. *Is Management Essential to Improving the Performance and Sustainability of Health Care Systems and Organizations? A Systematic Review and a Roadmap for Future Studies*, 16(1): 46-51. [Online]. DOI: <https://doi.org/10.1016/j.jval.2012.10.004> [Accessed 23 May 2020].

Maree, K. 2016. *First steps in research*. 2nd ed. Pretoria: Van Schaik Publishers. 22-46, 83-87, 173-216, 250-255.

Mlambo, V. and Adetiba, T. 2017. Effects of Brain Drain on the South African Health Sector, Analysis of the Dynamic of its Push Factors. *ResearchGate*, 9(4): 62-72. [Online]. DOI:10.22610/jeb. v9i4.1822 [Accessed 10 March 2020].

Morr, C & Julien, S. 2010. Knowledge Management in Healthcare. *ResearchGate*, 23: 490-510. [Online]. Available at: <https://www.researchgate.net/publication/230682282>

Moss, S. and Lubbe, M. 2011. The Potential Market Demand for Biokinetics in the Private Healthcare Sector of South Africa. *South African Journal of Sports Medicine*, 23(1): 14-19. [Online]: DOI: <https://doi.org/10.17159/2078-516X/2011/v23i1a365> [Accessed 16 March 2020].

O'Connor, M. 2006. The "Four Spheres" Framework for Sustainability. *Elsevier*, 3(4): 285-292. [Online]. DOI: 10.1016/j.ecocom.2007.02.002 [Accessed 16 March 2020].

Parveen, H and Showkat, N. (2017). Research Ethics. *ResearchGate*, 1(1). 1-12.

[Online]. Available at:

https://www.researchgate.net/publication/318912804_Research_Ethics [Accessed 3 May 2020].

Pescatello, L., Arena, R., Riebe, D. and Thompson, P. 2014. *ACSM's Guidelines for Exercise Testing and Prescription*. 9th ed. Philadelphia: Wolters Kluwer, p.9.

Saunders, M., Lewis, P. and Thornhill, A. 2009. *Understanding research Philosophies and Approaches. Research Methods for Business Students*.4. 106-135. Harlow: Pearson Education Limited.

Siniora, D. 2017. Corporate Social Responsibility in the Health Care Sector. *Duquesne Scholarship Collection*. Graduate Student Research Symposium.

Sustainability and Social Responsibility Module Manual 2019. (2019). 3rd ed. [eBook] The Independent Institute of Education (Pty) Ltd, pp.25-27. Available at: https://portal.iie.ac.za/ADV_Student/SIS_cmSPexternalLinksStudent.asp [Accessed 29 March 2020].

University of Stellenbosch Business School. 2018. *Success Factors of Small Business Owners in South Africa*. [online] Available at: <https://www.usb.ac.za/usb_insights/insight-success-factors-of-small-business-owners-in-sa/> [Accessed 25 April 2020].

Wegner, T. 2012. *Applied Business Statistics*. 3rd ed. Cape Town: Juta and Company (PTY) LT. 63-87.

Who.int. 2020. *Coronavirus Disease (COVID-19) - Events as They Happen*. [Online] Available at: <<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>> [Accessed 6 April 2020].

Wigg, K. 1997. Integrating Intellectual Capital and Knowledge Management. *Elsevier*, 30(3): 399-405. [Online]. DOI: 10.1016/S0024-6301(97)0020-4 [Accessed 16 March 2020].

Wiig, K. 1997. Knowledge Management: An Introduction and Perspective. *The Journal of Knowledge Management*, 1(1): 6-14. [Online]. DOI: 10.1108/13673279710800682 [Accessed 30 March 2020].

ANNEXURES:

Appendix A: Information letter



CONSENT and INFORMATION FORM

Explanatory information sheet and consent form for participants

To whom it may concern,

My name is Michael James Lumb and I am a student at the IIE Varsity College Cape Town. I am currently researching under the supervision of Karel Marais about the Business Knowledge Training Needs of South African Biokineticists. I hope that this research will enhance our understanding of determining what knowledge training needs are required by the profession.

I would like to invite you to participate in my study. To explain to you what your participation in my study will involve, I have formulated questions that I will try to fully answer so that you can make an informed decision about whether or not to participate. If you have any additional questions that you feel are not addressed or explained in this information sheet, please do not hesitate to ask me for more information. Once you have read and understood all the information contained in this sheet and are willing to participate, please complete the consent question below with your initials.

What will I be doing if I participate in your study?

I would like to invite you to participate in this research to help determine the Business Knowledge Training Needs of South African Biokineticists. If you decide to participate in this research, I would like to explain what participation will involve: On agreeing to participate, you will be required to complete the survey that will include a 5-point Likert scale where you will rate your business knowledge training needs on ten business and practice management concepts.

You can decide whether to participate in this research. If you decide to participate, you can choose to withdraw at any time.

Are there any risks/ or discomforts involved in participating in this study?

Whether or not you decide to participate in this research, there will be no negative impact on you. There are no direct risks or benefits to you if you participate in this study. If you find at any stage that you are not comfortable with the line of questioning, you may withdraw or refrain from participating.

Do I have to participate in the study?

- Your inclusion in this study is completely voluntary.
- If you do not wish to participate in this study, you have every right not to do so.
- Even if you agree to participate in this study, you may withdraw at any time without having to explain your decision.

Will my identity be protected?

All reasonable efforts will be made to keep your personal information confidential and respect your right to privacy. This includes replacing your identifying personal information with a number that only I and my research supervisor will know. You will not be identified in any research reports that are published. Under some circumstances, such as when required to do so by a court of law, I may have to disclose your personal information. Also, it may happen that your information will

need to be reviewed by another organisation for quality assurance purposes. I will tell you about this if it happens.

What will happen to the information that participants provide?

Once I have finished collecting survey data, I will analyse the data and include it in my research report, which is a requirement to complete my BCom Honours: Management Degree. You may ask me to send you a summary of the research if you are interested in the outcome of the study.

What happens if I have more questions about the study?

Please feel free to contact me or my supervisor should you have any questions or concerns about this research, or if there is anything you need to know before you decide whether to participate.

You should not agree to participate unless you are completely comfortable with the procedures followed.

My contact details are as follows:

Michael James Lumb

The contact details of my supervisor are as follows:

Karel Marais

Appendix B: Questionnaire/Survey

Business Knowledge Training Needs

Please rate your business knowledge training needs for the following business related concepts.

The ratings will take place on a 5-point Likert scale where 1 is very low, 2 is low, 3 is moderate, 4 is high and 5 is very high.

Consent must be given prior to answering the questions.

* Required

Information Letter, Consent and Demographics

CONSENT FORM

Explanatory information sheet and consent form for participants

To whom it may concern,

My name is Michael James Lumb and I am a student at the IIE Varsity College Cape Town. I am currently researching under the supervision of Karel Marais about the Business Knowledge Training Needs of South African Biokineticists. I hope that this research will enhance our understanding of determining what knowledge training needs are required by the profession.

I would like to invite you to participate in my study. To explain to you what your participation in my study will involve, I have formulated questions that I will try to fully answer so that you can make an informed decision about whether or not to participate. If you have any additional questions that you feel are not addressed or explained in this information sheet, please do not hesitate to ask me for more information. Once you have read and understood all the information contained in this sheet and are willing to participate, please complete the consent question below with your initials.

What will I be doing if I participate in your study?

I would like to invite you to participate in this research to help determine the Business Knowledge Training Needs of South African Biokineticists. If you decide to participate in this research, I would like to explain what participation will involve: On agreeing to participate, you will be required to complete the survey that will include a 5-point Likert scale where you will rate your business knowledge training needs on ten business and practice management concepts.

You can decide whether to participate in this research. If you decide to participate, you can choose to withdraw at any time.

Are there any risks/ or discomforts involved in participating in this study?

Whether or not you decide to participate in this research, there will be no negative impact on you. There are no direct risks or benefits to you if you participate in this study. If you find at any stage that you are not comfortable with the line of questioning, you may withdraw or refrain from participating.

Do I have to participate in the study?

- Your inclusion in this study is completely voluntary;
- If you do not wish to participate in this study, you have every right not to do so;
- Even if you agree to participate in this study, you may withdraw at any time without having to explain your decision.

Will my identity be protected?

All reasonable efforts will be made to keep your personal information confidential and respect your right to privacy. This includes replacing your identifying personal information with a number that only I and my research supervisor will know. You will not be identified in any research reports that are published. Under some circumstances, such as when required to do so by a court of law, I may have to disclose your personal information. Also, it may happen that your information will need to be reviewed by another organisation for quality assurance purposes. I will tell you about this if it happens.

What will happen to the information that participants provide?

Once I have finished collecting survey data, I will analyse the data and include it in my research report, which is a requirement to complete my BCom Honours: Management Degree. You may ask me to send you a summary of the research if you are interested in the outcome of the study.

What happens if I have more questions about the study?

Please feel free to contact me or my supervisor should you have any questions or concerns about this research, or if there is anything you need to know before you decide whether to participate.

You should not agree to participate unless you are completely comfortable with the procedures followed.

1. Do You Consent to Partake in the Following Study? If So Please Type in Your Initials Below
(Information & Consent Form Above) *

Enter your answer

2. Name and Surname (This will remain anonymous and a number will be allocated to each
participant, the reason for this is to avoid duplicated responses) *

Enter your answer

3. Graduation Period *

- ☐ Before 1980
- ☐ 1980-1984
- ☐ 1985-1989
- ☐ 1990-1994
- ☐ 1995-1999
- ☐ 2000-2004
- ☐ 2005-2009
- ☐ 2010-2014
- ☐ 2015-2019

4. Which University did you Complete your Biokinetics Degree at? *

- ☐ University of Cape Town
- ☐ University of Johannesburg
- ☐ University of the Witwatersrand
- ☐ Tshwane University of Technology
- ☐ Nelson Mandela University
- ☐ University of Stellenbosch
- ☐ North-West University
- ☐ University of KwaZulu-Natal
- ☐ University of Zululand
- ☐ University of Pretoria
- ☐ University of the Free State
- ☐ University of the Western Cape
- ☐ Other

5. Please specify other University

Enter your answer

Current Business Knowledge Training Needs

6. Please rate your business knowledge training NEEDS for the following concepts. *

	Very Low	Low	Moderate	High	Very High
Accounting	☐	☐	☐	☐	☐
Business Sustainability	☐	☐	☐	☐	☐
Corporate Social Responsibility	☐	☐	☐	☐	☐
Ethics	☐	☐	☐	☐	☐
Financial Management	☐	☐	☐	☐	☐
Human Resource Management	☐	☐	☐	☐	☐
Leadership and Managerial Decision Making	☐	☐	☐	☐	☐
Marketing	☐	☐	☐	☐	☐
Operational Management	☐	☐	☐	☐	☐
Strategic Management	☐	☐	☐	☐	☐

7. What other business knowledge training needs do you require? *

Enter your answer

Appendix C: Ethical clearance letter



3rd June 2020

Student name: Michael Lumb
Student number: 19002664
Campus: Varsity College Cape Town

Re: Approval of IIE BACHELOR OF COMMERCE HONOURS: MANAGEMENT Proposal and Ethics Clearance

HONOURS ETHICAL CLEARANCE LETTER

Your research proposal and the ethical implications of your proposed research topic were reviewed by your supervisor and the campus research panel, a subcommittee of The Independent Institute of Education's Research and Postgraduate Studies Committee.

Your research proposal posed no significant ethical concerns and your supporting documents and instruments are in order to proceed. We hereby provide you with permission to proceed with your research.

In the event of you deciding to change your research methodology in any way, kindly consult your supervisor to ensure all ethical considerations are adhered to and pose no risk to any participant or party involved. A revised ethical clearance letter will be issued.

We wish you all the best with your research!

Appendix D: Letter sent out by BASA to members



BASA

Dear BASA Member

Please find the below research survey for your participation:

"Dear Sir/Ma'am

My name is Michael James Lumb and I would like to invite you to participate in a research study to determine the business knowledge and learning needs of South African Biokineticist for business sustainability.

Before you decide on whether to participate, I would like to explain to you why the research is being done and what it will involve for you".

Please [click here](#) for more information and follow the [link](#) to participate in the survey.

Kind Regards
BASA

Research Purpose/Objective	Primary Research Question:	Research Rationale	Seminal Authors/Sources	Literature Review	Paradigm	Approach	Data Collection Method	Ethics	Anticipated finding	References
The Business Knowledge Training Needs of South African Biokineticists for Business Sustainability	What is the business knowledge training needs of registered South African Biokineticists for Business Sustainability?	To further business knowledge and improve business sustainability amongst South African Health Professionals with a focus on Biokinetics.	1) Henson, S et al., 2008. 2) Ellapen, T et al., 2018. 3) O'Connor, M. 2006. 4) Wigg, K. 1997 5) Moss & Lubbe, 2011	1: Business sustainability 2: Practice management 3: Knowledge management 4: Corporate social responsibility 6: Biokinetics	Positivist paradigm.	Quantitative, non-experimental, descriptive research.	Online-Survey. Likert Scale.	Ethical Clearance from the IEE Varsity College. Online survey to take into consideration COVID-19	A need is required for training on business and practice management concepts	Harvard IEE Varsity College Academic journal articles, books, websites, interviews.
Research Problem:	Secondary Questions/Hypotheses/Objectives	Key-Concepts	Key Theories			Sampling	Data Analysis Methods	Limitations	Anticipated contribution	
Little is known of the South African Biokineticists knowledge and training needs in terms of business management and sustainability.	What is the most important business knowledge training needs of South African Biokineticists for Business Sustainability?	Business sustainability, entrepreneurialism, South African health professions, practice management.	Business sustainability, Corporate social responsibility, Knowledge management.			Non-Probability sampling, Convenience sampling. Sample size: 30-50. Final count: 69.	Descriptive & inferential statistics using Microsoft Excel's built-in data analysis toolset.	Non-randomised sampling. One population of health practitioners, limited time, small population size.	Contributions to developing up to date business management knowledge and training needs for health and medical professionals	

Appendix E: Concept document