

**MANAGING A SUSTAINABLE PRIVATE RADIOGRAPHIC PRACTICE IN
GAUTENG AND LIMPOPO PROVINCES**

by

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DECLARATION

I, **Chuma Siyongwana (20313613)**, hereby declare that the dissertation for **Master Health and Welfare Management** to be awarded is my own work and that it has not previously been submitted for assessment or completion of any postgraduate qualification to another university or for another qualification.



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DEDICATION

I dedicate this research project to all radiographers in private practice; these are the people who took the decision to be independent and to try to succeed on their own. Through this research, I would like to acknowledge their hard work and make it clear to the radiographic community that their existence will no longer be unnoticed. Thank you

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I wish to express my sincere gratitude to the following people for their contribution to this study:

Thea Growler and Gail Klopper for their valuable guidance, commitment, and support.

My mother who has always motivated me to do more in life

All the private practice radiographers who participated in this study

And finally, I want to thank GOD for always looking after me in everything that I do.

ABSTRACT

Radiography is a constantly changing environment that is continuously evolving with new technology and new techniques on how to image human anatomy. This has led to cheaper and easier ways of imaging that present an opportunity for radiographers to practice independently from radiologists. The increase in the number of radiographers going into private practice since 2006 has led to a number of private radiography practices failing due to competition and other management and financial factors.

This study seeks to provide insight into the changing environment of private radiographic practice and the level of success it can bring to radiographers. This will enable radiographers to better determine their personal and professional development needs, which will effectively improve their ability to manage and sustain private radiographic practices. This approach stems from the researcher's belief that with the right skill and knowledge radiographers can run successful private practices and in so doing be able to empower others to do the same.

The researcher has chosen to carry out a qualitative, exploratory, descriptive and contextual research design in order to explore and describe the detailed recommendations and views of private radiographic practice owners and how they manage their practices. The chosen method of data collection for this study is individual one-on-one interviews supported by a literature control. The one-on-one interview was used to collect the data from participants who meet the inclusion criteria. The researcher purposively selected participants to ensure that their ideas and opinions will benefit the study.

The chosen method of data analysis is Tesch's data analysis approach as it follows the qualitative way of data analysis which occurs in three phases: description, analysis, and interpretation. This research made use of Guba's trustworthiness model to establish the validity and reliability of the qualitative research. The four criteria in this model for trustworthiness are truth-value by using the qualitative approach of credibility; applicability determined by using transferability; consistency determined by using the qualitative approach of

dependability and, finally, neutrality determined by the qualitative approach to confirmability.

The following six (6) ethical principles were followed to ensure no harm came to the participants: beneficence and non-maleficence, autonomy, justice, veracity, confidentiality and privacy.

On completion of the study, the researcher made recommendations based on the findings for inclusion in basic radiographic training and continuous professional development. These recommendations are:

- Complete reviewing of the management training syllabus in radiography education.
- Compilation of literature that deals with private practice radiography.
- Inclusion of private practice radiographers in radiography societies.
- Further research into the subject of private practice radiography.

This will allow for the knowledge contained in the study to be accessible to those who need it. It is also important to note that a study of this nature has never been conducted and therefore sharing of this information will allow for radiographers to know and understand what sustaining a private radiographic practice involves. The findings will be disseminated in seminars, conferences and publications.

KEYWORDS AND PHRASES

Management; Radiography; Sustainability; Private Radiographic Practice; Entrepreneurship

LIST OF ABBREVIATIONS AND ACRONYMS

BHF	Board of Healthcare Funders
CR	Computer Radiography
DR	Digital Radiography
HPCSA	Health Professions Council of South Africa
PACS	Picture Archiving and Communications Systems
SME	Small to Medium Enterprise
SORSA	Society of Radiographers of South Africa/

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CHAPTER 1: OVERVIEW OF THE STUDY

1.1 INTRODUCTION

History has shown a change in the field of radiology with radiography now recognised as a profession in its own right rather than one that is subordinate to radiology. The link between radiology and radiography will always be there, but radiography is beginning to stand on its own and using radiology as a support service. The Society of Radiography of South Africa (SORSA), saw the need for the profession to be independent. They started negotiating firstly with the South African Medical and Dental Council (SAMDC), and later with the Health Professions Council of South Africa (HPCSA) and the Department of Health (DOH) to legalise private radiography practice (Society of Radiographers in South Africa, 2000). This very lengthy discussion (1980-1994) resulted in radiographers being given permission to practice privately. Despite this concession, most radiographers in South Africa still practice as employees of state or private institutions, or within private radiology practices, as the concept of private radiographic practice is still comparatively recent.

Currently, although private radiography practices exist, the major problem is that they are not sustainable for financial reasons (Society of Radiographers of South Africa, 2000). The current situation gave rise to the question in the radiography industry of how can radiographers manage sustainable private practices? The goal of this research is to find radiography practices that appear to be sustainable and to identify useful features for this level of success in order to develop sustainable ways of managing private practices. The result of this research will be the creation of user-friendly recommendations regarding management strategies to help radiographers manage successful and sustainable private practices.

1.2. BACKGROUND AND RATIONALE OF THE STUDY

On November 8th, 1895 Wilhelm Conrad Rontgen discovered x-rays. That was the first time humanity could see skeletal structures within the skin without cutting it open (World Radiography Day, 2013). The demand for radiology became so

overwhelming that radiologists needed assistance. The need for radiology assistants gave rise to radiography, which became the discipline mainly involved in the acquisition of the radiology images (World Radiography Day, 2013). Therefore, radiographers generate the images and radiologists interpret the images.

The Society of Radiography in South Africa (SORSA) has been pivotal in all the milestones of the discipline in the country from the time it was founded in the first radiography school in Johannesburg General Hospital in 1951 (Society of Radiographers of South Africa, 2000). The Society motivated for recognition of radiography as a profession. The need subsequently arose for a professional board with the former statutory body, the South African Medical and Dental Council (SAMDC), now known as the Health Professions Council of South Africa (HPCSA) (Society of Radiographers of South Africa, 2000). In 1974 registration with the SAMDC was made compulsory for all radiographers working in the profession (Society of Radiographers of South Africa, 2000). The liaison between SORSA and HPCSA is important as it provides an avenue for members to make representations to the statutory body. One aspect of the liaison and representations by SORSA on the Professional Board for Radiographers at the HPCSA was the lengthy negotiations (from the early 1980s to 1993) that finally allowed radiographers to open private practices. The Society compiled the private practice tariffs for private practice diagnostic radiographers. Initially, private practice was limited to diagnostic radiographers, followed by the right to private practice for all radiographic categories in 2006.

Radiography is now faced with the challenge of private radiography practices that fail, which means that all the efforts of SORSA may be ineffective if radiographers allow this to continue. Hence, the need for research into management strategies that can help make radiography practices more sustainable and successful.

1.3 LITERATURE CONTROL

There is limited information about private radiographic practices as this is a relatively new concept. Therefore, the researcher had to make use of information

gleaned from other professions where private practice is more established. We also look at management functions that relate to the day-to-day administration of these health institutions. In order to provide this description cognisance was taken of some questions namely: Why do radiographers choose to enter private practice? How are private practices managed within health disciplines? How private practices are managed in other health professions?

The answers to these questions lie within the definition of entrepreneurship, which describes the human desire for independence and self-actualisation. The desire for independence forms the basis for radiographers who feel that they can do it on their own. However, this leads to radiographers having to manage their businesses without any business background or management experience.

Management is a concept that is foreign to health disciplines due to the practical nature of the work they do. Health professionals are normally exposed to first line supervisory management, and the chosen individuals are normally health professionals who have years of experience in that health discipline (Chukwuemeka, 2010). These supervisory managers usually have no management background and no academic training in management, but they are experienced in the practical aspects of running a department or unit. The point is that when a health professional enters private practice, they do so with limited knowledge of running a business entity despite having all the knowledge needed to run the practical aspects of providing the health service. Many health professionals fall into the same category of lacking knowledge of business management but experienced in clinical management, for example, nursing, physiotherapy and radiography. Each of these health disciplines is unique in the service they provide to the private health sector, but when it comes to marketing, finance and human resource management, these health disciplines become similar business entities with the same financial goals.

Radiographic practices often take the form of a general x-ray room in a clinic or a doctor's surgery, but recent activities have shown radiographic practices in mobile vehicles, on construction sites, mining sites, in factories and even on army bases (Van Rheed, 2013). All of these practices generally perform the same

examinations but what make them different are the reasons behind the imaging on these sites (Van Rheed, 2013). It is important to note that according to the HPCSA and the Board of Health Care Funders, 80% of the private practices are found in Gauteng and Limpopo provinces (Van Rheed, 2013). The main reason for these practices being in these provinces is because these are the open market provinces where radiologists, mining companies and the construction industry empower radiographers to be independent and to practice on their own with radiology as a supporting service for reporting of x-rays. Radiographic private practices take various forms. There are several practising areas in private practice radiography, and they are as follows:

- General radiographic practice,
- Occupational health radiographic practise,
- Mobile x-ray radiographic practice,
- Theatre and cardiac catheterization practice,
- Ultrasound.

Management is defined as the process of organising and coordinating resources and activities of an organisation in order to achieve organisational goals (Draft, 2013:70). A manager is a person who is responsible for ensuring that all organisational resources and activities are directed towards the achievement of these organisational goals (Draft, 2013:71). These resources and activities include Human Resouces Management, Financial Management and Marketing.

Human resources management is defined as a system of activities and strategies that focus on successfully managing employees at all levels of the organisation to achieve organisational goals (Dessler, 2012:14). Radiographers may think that a small radiographic practice does not require this type of management, but the truth is that even if there is only one person employed in the business, for example, a cleaner, the manager of that business must ensure that the cleaner is suitable and capable of performing that job. A clean department is welcoming to patients and, in an environment where there is competition, the cleanliness of your practice could be an attractive feature to your clients. Some human resource functions that are relevant to radiographic private practice

include; *job analysis and job design, recruitment and selection, orientation and training, employee motivation, managing employee benefits, managing disciplinary procedures* and organisational planning (Dessler, 2012: 18-19).

Financial management. The most important thing to know and consider about the financial aspects of managing a private practice is that as the practicemanager, you will not play the role of an accountant, but instead, you will play the role of financial manager. The financial manager is more concerned with the acquisition and employment of capital aimed at increasing the value of the practice over the long term and maintaining the profitability, liquidity and solvency of the firm over the short term (Marx, Ngwenya& Grebe, and 2009:45). Financial tasks include the following:

- Setting of fees,
- Preparing a cash flow system,
- Assessing the expenditures that the owner might encounter, including:
 - legal assistance,
 - accountants,
 - insurance (indemnity insurance and the insurance of all assets in the practice), and
 - the costs of setting up a website to market the practice and show potential clients what services the practice can provide (Evans & McKittrick, 2010).

Marketing management is the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfy individual and organisational goals (Kotler, 2001:2). Private practice marketing is all about creating relationships with fellow health professionals and always making sure that they are happy with the quality of service provided by your practice. Methods to be used include Media Based Marketing, Print Based Marketing, the Practice Website and Networking and Referrals (Evans & McKittrick, 2010).

These features of management in private practice will be elaborated upon in the chapter on the findings of this study.

1.4 PROBLEM STATEMENT

Opening a private practice is a task that only a few can execute, and in radiography, it is even more difficult because of the radiology monopolies that exist in South Africa (Van Rheed, 2013). The number of private radiography practices in the country is estimated at just under a hundred and 80% (according to the HPCSA and the Board of Health Care Funders) of these are found in the Gauteng and Limpopo provinces (Van Rheed, 2013). The reason for this is that mining and operating theatre activities in these provinces is high and require the radiography disciplines normally offered by radiographers in a private service (Van Rheed, 2013). This means that those who do go into private practice need to be equipped with the right knowledge and expertise when embarking on this journey.

There are individuals within the field of radiography who have sustained private practices and who hold the key to the recipe for sustainability in private radiography practices. This is significant because the problem at hand is that private radiography practices are failing. Radiographers need to be introduced to management strategies that will help them sustain their private practices thus helping to reduce this problem. The ultimate goal is to find a solution to the problem of failed radiography practices and to identify the skills needed to avoid failure. Pinpointing management strategies that can help radiographers manage and sustain private practices is the first corrective step that needs to be taken.

1.5 RESEARCH QUESTION

This investigation seeks to answer the following research question:

How can radiographic practitioners be assisted to manage sustainable private practices?

1.6 THE AIM AND OBJECTIVES OF THE STUDY

The aims and objectives of the study will now be discussed.

1.6.1 Aim of the study

This study aims to identify the reasons why some private radiographic practices are sustainable.

1.6.2 Objectives

The objectives of the study are:

- To explore and describe the views of private radiographic practitioners concerning the management of their practices
- To make recommendations on how radiographers can better manage their practices to ensure sustainability.

1.7 CONCEPT CLARIFICATION

These concepts will be interpreted as follows:

Management is defined as the process of planning; organising, staffing, controlling and directing organisational resources to achieve the desired goal (Draft, 2013:78).

Radiographic private practice refers to an independent business that does not operate under the government and is managed and run by radiographers who work closely with but are not employed by, a radiologist who reports on the radiographic images (Mosby's Medical Dictionary, 2009:234).

Radiography is a medical profession whose role is to image human anatomy and produce x-rays (Mosby's Medical Dictionary, 2009:390).

Sustainability is defined as the endurance of a system and its processes through time. The organising principle for sustainability is sustainable development, which includes the interconnected domains of environmental friendliness, economic viability and social relevance (Sustainable, n.d.).

1.8 RESEARCH DESIGN AND METHODS

The research design is directly derived from the research questions and forms the 'blueprint' for a study, and this determines the methodology a researcher selects for a study to maximise the validity of a study (Brink, van der Walt & van Rensburg, 2012:96). Research methods refer to techniques used by researchers to structure a study and to collect and analyse information relevant to the research questions of a study (Polit & Beck, 2012:12). The research approach used was qualitative, exploratory, descriptive and contextual to best inform the research questions and objectives of this study. Data analysis was done using Tesch's method of thematic synthesis. Data was reported and a literature control was done. Measures to ensure trustworthiness were followed and all ethical principles were adhered to. See Chapter two (2) for the details.

1.9 LAYOUT OF THE REPORT

The main purpose of a research report is to convey enough information about the study so that the reader can place it in its general scientific context, judge the adequacy of its method and thus form an opinion of how seriously the findings are to be taken. The layout of the report refers to what the research report should contain, and this report will be described under the following headings:

Chapter 1 – Introduction and Background to the study

This chapter introduces the reader to the research subject and all its background information.

Chapter 2 – Research Methodology

This chapter informs the reader on the processes that will be followed when conducting the research.

Chapter 3 – Research findings

This chapter discusses the themes that emerge from the research interviews and correlates that knowledge with literature.

Chapter 4 – Summary, Conclusion Limitations and Recommendations

This chapter gives a summary of the outcomes of the research, gives conclusions that have been made on the research subject and then makes recommendations regarding further knowledge needed relating the research subject.

1.10 SUMMARY OF CHAPTER

The current state of radiography private practice is not where it could be. Hence, there is a need for a study that will reflect on the current state of affairs. This study aims to show the intricacies of radiography private practice and make recommendations based on comments made by private practice owners regarding the problems they encounter and possible solutions that can help new practice owners sustain practices with ease. The chapter also looks at ethical issues within research and shows how the researcher plans to follow ethical guidelines to make sure that no harm is inflicted on participants and that no human rights are violated during the course of the study. This chapter has been an introduction to the subject of private practice radiography and how it came to existence. This chapter has also covered the problem statement and the objectives of the study. The next chapter will cover the research design and methodology of the study in order to give a clear indication of how the study was conducted.

CHAPTER 2: RESEARCH DESIGN AND METHODOLOGY

2.1 INTRODUCTION

Chapter one provided the overview of the study and contained information on what the researcher proposed to do while conducting the study. Chapter two is all about the research design and methodology. This means that in the chapter the discussions will be focused on the methods used by the researcher during the process of carrying out this study. This chapter deals with the research design and methods which include the research population, sampling, research instruments and procedures applied to this study for the purpose of data collection and analysis. Criteria for establishing trustworthiness and ethical considerations will also be discussed.

2.2 RATIONALE FOR THE STUDY

Radiography is a constantly changing environment that is always evolving with new technology and new techniques on how to image human anatomy. This has led to cheaper and easier ways of radiographic imaging that present the opportunity for radiographers to practice independently from radiologists. The increase in the number of radiographers going into private practice since 2006 has led to some radiography private practices failing due to competition and other management and financial factors.

This study seeks to provide insight into the changing environment of private radiographic practice and the level of success it can bring to radiographers. This will then enable radiographers to better determine their personal and professional development needs which will effectively improve their ability to manage and sustain private radiographic practices. This approach stems from the researcher's belief that with the right skill and knowledge radiographers can run successful private practices and in doing so, be able to empower others to do the same.

2.3 RESEARCH DESIGN

According to literature, the research design and methods make up two different proportions of a research study (Henning, van Rensburg & Smit, 2010:36). The research design serves to inform the reader of how the research was conducted; for example, the data collection method to use and the data analysing technique applicable to your study (Wagner, Kawulich & Garner, 2012:21). As mentioned before, for the purpose of answering the research question, the researcher has made use of a qualitative design that is exploratory, descriptive and contextual in nature in order to explore and describe the detailed experiences and views of private radiographic practice owners and how they manage their practices. The methods used to ensure trustworthiness and ethical considerations are also discussed.

2.3.1 Qualitative design

According to de Vos, Strydom, Fouche and Delport (2012:56), qualitative research is a method that uses a systematic, subjective way of describing life experiences in order to give them meaning. Qualitative studies also give the researcher ways to explore behaviour, perspectives, feelings and experiences in depth, in both the quality and intricacy of a situation through a holistic framework (de Vos *et al.*, 2012:65). Qualitative research provides avenues that can lead to the discovery of the deeper levels of meaning and understanding of the participants. Qualitative research captures people's words and actions as a product of how they interpret the complexity of their living world in the real sense (Bryman & Bell, 2007:49). The qualitative research method also allows for better understanding of social events from the participants' perspective or understanding. The qualitative research method uses data collection through methods such as participant observations and in-depth interviews with individuals or focus groups (Creswell, 2013:80). A qualitative research method uses a small sample of participants in the research process, as a result of the in-depth gathering of information that is required for the study (Denzin & Lincoln, 2011:101). In this study, the researcher wanted to find out the experiences and recommendations of private practice owners in an effort to understand how radiographers can be helped to manage sustainable and

successful private radiographic practices. This will in turn help to provide an understanding to radiographers on how to not fail in private practice.

2.3.2 Exploratory research

An exploratory design is mainly used to determine the personal experiences of an individual or group (de Vos *et al.*, 2012:95). Creswell (2013:374) describes the exploratory approach as research conducted to gain new insights, discover new ideas and for increasing knowledge of the phenomenon. The reason behind the researcher choosing this design for the study was that he aimed to explore the experiences and recommendations of private practice owners to understand how radiographers can be helped to manage sustainable and successful private radiographic practices.

2.3.3 Descriptive research

Descriptive research involves direct exploration, analysis and description of the particular phenomenon and it must be as free as possible from unexplained presuppositions, for the purpose of gaining an insightful presentation of the information provided (de Vos, *et al.*, 2012:96). Descriptive studies are used to transcribe the phenomenon of interest in the real situation (de Vos *et al.*, 2012:96). The descriptive research design provides a description of the qualities and strategies needed to reach the goal of managing a sustainable private practice by looking into how these private practices are managed for them to maintain their sustainability.

2.3.4 Contextual research

The contextual research approach studies a phenomenon because of the intrinsic and immediate contextual significance. It means that the phenomenon under research provides the best information when analysed in its current environment. Contextual research also focuses on subjects within a specific context or environment in order to gain an understanding of the subject within its natural environment (de Vos, *et al.*, 2012:96). Creswell (2013:96) described contextual

research as findings that gain validity only if they are studied within the time, space and value context in which the study is being done.

This study was contextual in nature because it was concerned with the unique context of private radiographic practice in the Gauteng and Limpopo provinces. The reasoning behind choosing this context is that these provinces provide the highest success rate of private radiographic practices in the country. This current study will enable radiographic practice owners to give an extensive description and understanding of their experiences within their specific contexts. In this way, the researcher will also be able to identify the true descriptions that were given by these individuals when observed in their environment and real-life contexts, as these interviews were conducted in their private practice premises.

2.4 RESEARCH METHODS

Research methodology is a systematic way to solve a problem. It is the science of studying how the research was conducted. Essentially, the procedures by which researchers go about their work of describing, explaining and predicting phenomena are called research methodology. It is also defined as the study of methods by which knowledge is gained. The aim of a research method is to provide a work plan for the research.

For the sake of this study, research methodology refers to a series of activities that were used to achieve the aims and objectives of the study. These aims and objectives were as follows:

- **Aim of the study**
 - This study aims to identify the reasons why some private radiographic practices are sustainable.

- **The objectives of the study are:**
 - To explore and describe the views of private radiographic practitioners concerning the management of their practices
 - To make recommendations on how radiographers can better manage their practices to ensure sustainability.

The chosen method of achieving these aims and objectives for this study was individual semi-structured one-on-one interviews. Here the one-on-one interview was used to collect the data from participants who met the inclusion criteria. The researcher will purposively select participants to ensure that their ideas and opinions will benefit the study.

2.4.1 Research population and sample criteria

A *research population* is any group of individuals who can provide data on the phenomenon being studied. The population is the entire group that a researcher is interested in and wishes to describe or draw conclusions about (Brynard, Hanekom & Brynard, 2014:57). The population for this study was radiographers who own private practices because they are the best sources of the information that would help the researcher understand the fundamentals of managing a radiographic private practice and what additional skills are required to make these practices sustainable.

A *research sample* is a group of people selected from the population (Brynard *et al.*, 2014:58). The sample size consisted of 9 registered private radiographic practitioners in Gauteng and Limpopo Provinces as these provinces have the highest number of private radiographic practices in the country (80%) and contain those practice owners in these provinces who met the inclusion criteria. Sampling in this study was based on the participants' expert knowledge or experience in the field of radiography private practice, as well as their availability at the time scheduled for interviews, as a purposive sample was used. Purposive sampling is the selection of research participants who best represent the population based on their knowledge.

The sample in this study was private radiographic practice owners who met the inclusion criteria set below. It is essential for a qualitative researcher to use a small selective sample, because of the in-depth nature of the study and the detailed analysis of data required (Brynard *et al.*, 2014:59). The researcher acquired a purposive sample, and that means there must be inclusion and exclusion criteria requirements (Morgan, 2014:128). The researcher used a minimum of 8 private practice owners who fitted the outlined criteria, chosen through purposive sampling but data collection continued with interviews until data saturation was reached.

Inclusion criteria:

- Private practice owners who have owned or who currently own a private practice for at least to (2) years.
- Registration with the HPCSA as a private practice owner.

The minimum time frame of two (2) years in private practice was decided upon as it is generally accepted that if an enterprise can continue functioning for this period, there is a strong likelihood that it will be sustainable.

Exclusion criteria:

- Private practice owners who have just started or have been practising for less than two (2) years.
- Radiographers who work for radiology practices or practice under radiologists and therefore are not working independently.

All participants were recruited via the HPCSA Radiography Board, from a list of registered private radiographer practitioners. A letter of invitation (see Annexure 2) was sent to all suitable candidates inviting them to participate in the study. Within this letter of invitation was an explanation of the objectives of the study, what the participation entailed, and the rights of the participants and an explanation of confidentiality measures to be applied. The above information allowed participants to clarify any queries that they had. The researcher distributed the letters and two weeks were allowed for the selection of the final group of participants based on the set criteria. These two weeks also allowed for any questions or queries and

was considered an acceptable time period for all participants to receive, read and come to a final decision regarding their involvement in the investigation, as also stated by Botma, Greef and Mulaudzi (2010:103).

2.4.2 Data collection

According to Creswell (2014:189), in qualitative research, it is a general acceptant resident that the researcher is the instrument who plays the role of collecting and generating data, depending on the way he positions himself. In this research study, the researcher directly engaged with the source of data for the production and analysis of materials (Birk & Mills, 2014:37). This data also called the rough material that researchers collect is the information provided to an observer by any situation in their world under study (Kumar, 2014:170). For the purpose of this study, data was collected using semi-structured interviews, observations and field notes.

A **semi-structured interview** is a method of research used in the social sciences. A structured interview has a rigorous set of questions that are asked of all interviewees in the same sequence without deviation. A semi-structured interview is open, allowing new ideas to be raised during the interview as a result of what the interviewee says. The interviewer in a semi-structured interview has a framework of themes to be explored. However, the specific topic or topics that the interviewer wants to explore during the interview should usually be well considered in advance, especially during interviews for research projects (Kvale & Brinkman, 2009:2). It is beneficial for interviewers to have an interview guide prepared, which is an informal grouping of topics and questions that the interviewer can ask in different ways for different participants. Interview guides help researchers to focus an interview on the topics at hand without constraining them to a particular format. This freedom can help interviewers tailor their questions to the interview context/situation, and to the people, they are interviewing (Kvale & Brinkman, 2009:5)

Individual semi-structured interviews involve one-on-one interaction between the respondent and the researcher. An interview is an interpersonal interaction in

which one person (the interviewer) asks the other (the interviewee) questions relevant to the investigation (Kvale & Brinkman, 2009:3). A face-to-face interview allows the researcher to observe any non-verbal communication and also allows both the interviewer and the participant to seek any clarification necessary (Creswell, 2014:190). The advantage of this data collection method is that it permits the researcher to rephrase questions that respondents do not understand and allows respondents to elaborate on their ideas at length (Holloway & Wheeler, 2015:15). This approach provided the researcher with an in-depth understanding of how the radiographic private practice owners manage their practices.

Conducting an interview

Even though semi-structured interviews are flexible, they require rigorous preparation. It was essential to define the objectives, devise an interview plan and draw up a consent form. Some of the main steps were as follows:

- Studying the interview plans, deciding which questions are most appropriate for the respondent or prepare new ones.
- Drawing up a consent form specifying the rules of the interview and the confidentiality commitment, or adapt a sample form (cf. Annexure B).
- Contact the respondent: explain the goal of the interview and the projected safety diagnosis, obtain his/her permission, schedule an appointment and agree on where the interview will be. The place selected should be neutral, confidential, comfortable, quiet, free of distractions and easily accessible for the respondent.
- If necessary, send the consent form and the interview plan to the respondent.
- If necessary, prepare equipment for recording the interview.
- Contact the respondent again to confirm the date and location of the interview.

The interviewer should attempt to create an atmosphere of trust, friendliness and openness from the moment the informant arrives for a one-on-one interview. Purposeful small talk facilitates a warm and friendly environment to put the participants at ease (Krueger, 1994, as cited in Buyiswa, 2008:30). The researcher created a trusting and open atmosphere by greeting the participants and

reassuring them about confidentiality. The summary mentioned above described the basic preparative processes that the researcher must go through before undertaking a qualitative interview.

Most of the participants in the study were private practice owners and most of them belong to a 'WhatsApp' group called "Rads in private practice". The group was the place where most of the participants were found. Other participants were found through recommendations by other participants (snowball sampling). As most of these participants were available on social media, the invitation process was not difficult. Six participants belonged to the social media group and were invited via text messages and confirmed on the social media group. The other three participants, however, did not belong to the social media group, but their information was given to the researcher by the other participants. The invitation process for the latter three was done via email, and confirmation was given telephonically. Almost all the interviews were scheduled to take place at the private practices where these individuals work but, due to unforeseen circumstances, three had to take place at the participant's homes. As the researcher is a private practice owner himself, he broke the ice by discussing the current state of private practice radiography and all the challenges facing it. This led to a degree of comfortability with the participants before the interviews started and also the researcher found that the participants enjoyed talking about their achievements and all the material things they have accumulated through owning their private practices.

The interviews lasted approximately 30-60 minutes. Interviews, however, continued until data saturation was achieved. The researcher chose open-ended questions for the interviews as these would allow participants to discuss their opinions, views and experiences fully, whereas a structured interview with closed-ended questions may hinder them from expressing their full opinions and views (Williams & Whittaker, 2012:67). The interview consisted of one open-ended question developed by the interviewer for the sole purpose of this study, which is as follows:

"Tell me what it is like managing a private radiographic practice?"

The following sub-questions helped to answer the main one and also helped to keep the interviewee focused:

- What skills do you think are needed in preparation for managing a private radiographic practice?
- Explain to me how radiography practitioners can be assisted to manage sustainable, private practices?

2.4.3 Audio-recording

The researcher used an audiorecorder to capture the interviews. Being new to the field of research, the researcher felt that the use of an audiotape would allow him to focus all his attention on the interviewees and the interview itself, while it would also provide a means of self-monitoring and improvement (de Vos *et al.*, 2012:359). The researcher believed that most participants would consent if they were aware of the purpose of the audiotape and if their anonymity was ensured. They would also be offered the chance to review the transcript. Participants agreed to the use of an audiorecorder. The audio-recordings, which were used for full transcripts of the interviews, were kept safe till after the completion of the study.

The interview was audio-recorded with permission from the participants to ensure an accurate account of the interview that could be replayed for analysis purposes. Anonymity was assured during the course of the recording (de Vos *et al.*, 2012:120). Participants were reminded of their right to withdraw from the study or to terminate the interview at any time before commencing the interview (de Gruchy & Holness, 2007:184).

2.4.4 Observations and field notes

Observational data refers to the raw information an observer collects from observing the participant's mood, reactions, body language and the general setting of the interviews (Morgan, 2014:53). In this study, the researcher collected

this information during the interviews and documented it in the form of field notes to ensure that all nuances of behaviour were captured.

Field notes are referred to as research information that is jotted down in the form of brief words or phrases while in the field or during the interview, which will help in the writing of complete notes at a later stage (How to write field notes, 2012). The field notes included the following:

- Date, time, and place of observation
- Specific facts, numbers, details of what happens at the site
- Sensory impressions: sights, sounds, textures, smells, taste
- Personal responses to the fact of recording field notes
- Specific words, phrases, summaries of conversations, and insider language
- Questions about people or behaviours at the site for future investigation
- Page numbers to help keep observations in order (How to write field notes, 2012).

2.5 DATA ANALYSIS

The purpose of data analysis is to organise, provide structure to and elicit meaning from research data (Kawulich & Holland, 2012:229; Williams & Whittaker, 2012:85). Data analysis was on-going in conjunction with data collection; as interviews were conducted the gathered data were analysed, interpreted and communicated to give it meaning (Creswell, 2014:195). Qualitative data analysis occurs in three phases: description, analysis and interpretation (Silverman, 2006:56).

The researcher transcribed the interviews verbatim (word for word) and typed them in a word document, following which all the typed interviews were sent for data analysis. The researcher used one interview as a pilot study to identify issues that need clarification. Volumes of data were gathered throughout the data collection process which required the researcher to reduce the data through categorising and identifying similar themes. This process allows the researcher to

interpret findings more easily (Creswell, 2014:198). The stages of Tesch's method of data analysis were applied to the analysis as follows:

- The researcher acquired a sense of the whole interview by reading through or listening to all transcriptions carefully. He then made notes of ideas as they came to mind.
- The researcher selected one interview, for example, the most interesting, the shortest, the one on top, and went through it asking "what is this about?" and thinking about the underlying meaning in the information and wrote these thoughts down in the margin of the page as they come up.
- When the researcher had completed the task for several respondents, a list was made of all the topics; similar topics were clustered together and formed into columns that were arranged into major topics, unique topics and leftovers.
- The researcher took the list and returned to the data; the topics were abbreviated as codes, and these codes were written next to the appropriate segments of the text. The researcher tried the preliminary organising schemes to see whether any new categories and codes emerged.
- The researcher found the most descriptive wording for the topics and turned them into categories. He tried to reduce the total list of categories by grouping topics that relate to each other. Lines were drawn between the categories to show interrelationships.
- The researcher made a final decision on the abbreviation for each category and alphabetised the codes.
- The data material belonging to each category was assembled in one place, and a preliminary analysis was carried out.
- The researcher recorded existing data whenever necessary (as per de Vos *et al.*, 2012:410).

2.5.1 Independent Coding

The researcher also used an independent coder to help code the themes and sub-themes. The interviews in the form of transcribed interviews and field notes were

given to an independent coder for analysis. She coded and categorised the data. The independent coder and the researcher then met to reach consensus and to verify whether the categories and themes identified by the independent coder correlated with those of the researcher.

2.5.1.1 Summary of Process followed by Independent Coder

The data-driven Coding Process

The Independent Coder (hereafter Coder) followed the coding process of Saldana (2009; 2015), to code the data. The Coder read the proposal of the researcher and focused primarily on the research question and then on the aim and objectives of the study. The concept clarification provided in the proposal assisted the Coder with specificity and enabled her to enter the data with a concise understanding of the central concepts.

The Coder then read the transcripts to understand the flow of the interview and to familiarise herself with the data, at an initial stage. The Coder determined that descriptive coding was appropriate for the nature of this study in that there needs to be a 'detailed inventory' (Saldana, 2009:48) of the participant's views in relation to the researcher's questions. Descriptive coding is also appropriate for an independent coder, who is not, based on ethical considerations, venturing into the data interpretation through the theoretical lenses of the study. Descriptive coding also allowed for a directed approach to the data, in that the interpretation is embedded in the data and the rationale for the code is based on the proximate text.

The Coder supported the coding process using ATLAS.ti. ATLAS.ti is qualitative data analysis (QDA) software that brings sophistication to the coding process (Smit, 2005). The QDA software also provides a transparent review of the data and assists with integration, the pace for processing and making linkages, as well as being able to iterate and refine the data in subsequent cycles of coding (Silver & Lewins, 2014). The Coder, therefore, loaded nine primary documents into a single hermeneutic unit. Coding then took place using the various functions that ATLAS.ti provides to support coding. Silver and Lewins (2014:23) reference that

QDA software supports Tesch's method of analysis for textual data, which the researcher indicates was used.

Based on the Coder interpreting the data in response to the research question, the first cycle of the coding process was strongly inductive. The researcher also did not supply a 'code book' for deductive coding.

Descriptive codes (Saldaña, 2009:7) were used to link seminal text to the encoded meaning. A few *in vivo* codes, (Saldaña, 2009:3) were used when the participant's actual words were strongly evocative and, therefore, these words become the 'essence-capturing' (Saldaña, 2009:3) code. In this case, code and quotation/textual data are the same. Coding of the observation field notes was also done. These codes are differentiated from the interview coding, through the prefix "OBS". Codes with no prefixes were driven by the interview data.

The second cycle of coding (Saldaña, 2009:9) included refining the naming of the codes and providing comments for clarification. The logic applied was still mainly inductive with the data used to ground the refining and the clarification comments. The second cycle of coding also included revisiting the transcripts/primary documents so that the codes "Participant definition of sustainability" and "Skills needed for private radiography are diverse" could be grounded in the data across all participant responses. Reviewing the data to discern these two codes and their textual linkages, in the second cycle of coding, was based on the researcher's questions of the interview schedule that were in turn integral to the research question, aims and objectives.

Providing Building Blocks for Analysis

The Coder then created the following Outputs from ATLAS.ti

- List of Codes inductive and encoded against textual data (1. List of Codes inducted)
- List of Codes and their numerical frequency and comments (2. List of Codes with numerical count)

- List of Codes with their Textual Quotations (3. All codes with Quotations from the Data)
- Quantitizing the data (Sandelowski, Voils & Knafel, 2009)
 - Primary Document Table in Excel (Primary document valid and totals) (4. Code-Primary Document Tables)
 - Code and Total only (5. Code Frequency-most grounded-yellow-IC)
 - Highest Code Frequencies in PowerPoint (6. Code Frequencies)
- Network of possible categories from Codes (7. Network of possible categories from code (see Figure 3.8))

2.6 LITERATURE CONTROL

A literature control is an evaluative report of information found in the literature related to a specific selected area of study. The review should describe, summarise, evaluate and clarify this literature. It should give a theoretical base for the research and help you (the author) determine the nature of your research (de Vos et al., 2012:402).

The subject under investigation does not have much literature available, but the researcher decided to carry out a generalised literature review which includes information about private radiographic practices as well as other private practices in the health field and then conclude with management functions that relate to the day to day administration of these health institutions. In order to provide this description cognisance was taken of some questions namely: Why do radiographers choose to enter private practice? How are private practices managed within health disciplines? And finally, how are private practices managed in some lesser known health services?

2.7 PILOT INTERVIEW

A pilot study or interview is used to assist in the further development of a larger study. Pilot studies may be used to test study measures, estimation of interview times and testing the validity of tools and estimation of outcome variables (de Gruchy & Holness, 2007:187; de Vos et al., 2012:394). Researchers benefit from carrying out a pilot study before the main study, as it allows for the identification of any weaknesses in the plans. Also, it allows the opportunity to rectify any mistakes before carrying out the remainder of the study (de Gruchy & Holness, 2007:187; de Vos et al., 2012:395). In most cases, it is recommended that pilot studies are carried out before the research using at least 10% of the sample size. However, as this study is a qualitative study with the aim of using at least eight (8) participants, only one participant was used in the pilot study (de Gruchy & Holness, 2007:190). This pilot study was used to test the framework's trustworthiness, reliability and also the interview location, audio recording quality and time frames (de Gruchy & Holness, 2007:190). This pilot study was used as a method to discover any flaws in the current data collection plan, while also allowing enough time to rectify these before the main research takes place (de Gruchy & Holness, 2007:191; de Vos et al., 2012:395).

2.8 TRUSTWORTHINESS OF THE RESEARCH

This research will make use of Guba's model to establish the trustworthiness of the research (de Vos et al., 2012:422; Lincoln & Guba, 1985 as cited in Elo, Kääriäinen, Kanste, Pölkki, Utriainen, & Kyngäs, 2014:2). The four criteria in this model for trustworthiness are truth-value by using the qualitative approach of credibility; applicability determined by using transferability; consistency determined by using the qualitative approach of dependability and neutrality determined by the qualitative approach to conformability (de Vos et al., 2012:420).

2.8.1 Truth-value (credibility)

Truth value establishes how confident the researcher is of the truth of the findings based on the research design, participants and context. The truth-value of this

study was determined by using the qualitative approach of credibility (Berry, 2004:78; de Vos et al., 2012:419). A qualitative study is credible when it represents accurate descriptions or interpretations of experiences in a way that the people who shared that experience or perception would immediately recognise (Berry, 2004:78; de Vos et al., 2012:420). In this research, truth-value was enhanced by employing the techniques of triangulation and structural coherence. Examples of these strategies are:

- Triangulation. The use of more than one source of information e.g. interviews, field notes and literature in order to validate and view the information from different angles. In this study, triangulation was achieved by using different types of radiography practice owners e.g. operating theatre, occupational health and normal x-ray practice owners. In this way, different types of managers gave information which led to similar outcomes. It is also important to note that field notes and literature were also used to support the interviews.
- Independent coder: to assess the themes and subthemes against the raw data from the interviews. This was done after the researcher had classified the data into themes and subthemes, which also forms part of the triangulation of data for credibility (de Vos et al., 2012:442). In this study, both the researcher and the independent coder collaborated to ensure that the themes and sub-themes were in line with answering the research question.
- Authority of the research supervisors: To educate and guide the student as a researcher and as a scientist and to serve as a model for ethical scientific activity. In this study, the research supervisors analysed each chapter to ensure that they met the standards set by the university.
- Authority of the researcher: to devote his energy and time to carry out the research work, pay attention to the guidance of the supervisors and to ensure the ethical rules of the work and scientific reporting.
- Reflexivity: This is the process of examining both oneself as a researcher, and the research relationship and involves examining one's "conceptual baggage," one's assumptions and preconceptions, and how these affect research decisions, particularly, the selection and wording of questions.

Application in this study involved the researcher having an introspective look in his ability to interview and ensuring that it was unbiased.

- Member checking is a technique used by researchers to help improve the accuracy, credibility, validity, and transferability (also known as applicability) of a study. In many member checks, the interpretation and report (or a portion of it) are given to members of the sample (informants) in order to check the authenticity of the work. Their comments serve as a check on the viability of the interpretation.
- Interviewing technique: A semi-structured interviewing technique was chosen because it is open, allowing new ideas to be brought up during the interview as a result of what the interviewee says. This, then, allowed for the member checking process to check the authenticity of the work
- Peer review: This is the process of engaging an independent and qualified expert in providing a critical and consultative evaluation of the merits of the research project. In qualitative research, a peer review may also be used to improve a research project's trustworthiness (de Vos et al., 2012:450).

2.8.2 Applicability (Transferability)

Applicability refers to the degree to which the findings can be applied or transferred to other similar contexts and settings or with other groups. As qualitative research is contextual and because each situation is unique, the findings may be transferred but not generalised. The applicability is the responsibility of those wishing to transfer the findings rather than that of the current researcher (de Vos et al., 2012:420). The applicability of this study was indicated by the fact that the information and outcome of this study can and will help radiographers understand what they need to do to run successful practices. Applicability was achieved by:

- Purposive sampling: The researcher chooses the sample based on who they think would be appropriate for the study. This is used when there is a limited number of people who have expertise in the area being researched or when the interest of the research is in a specific field or a small group. Purposive sample sizes are often determined by theoretical saturation (the

point in data collection when new data no longer bring additional insights to the research questions). It is the only viable sampling technique for obtaining information from a very specific group of people. Purposive sampling technique essentially is dependent upon the skill of the researcher to identify and find specific participants (de Vos et al., 2012:421). The results of purposeful sampling are usually expected to be more representative of the population than those achieved with an alternative form of sampling. It is because of this that the results of this study can be transferred to any setting which contains professionals engaging in the same type of work as the initial participants (de Vos et al., 2012:421). This, then, facilitates transferring the findings of this study to other similar contexts.

2.8.3 Consistency (Dependability)

Consistency refers to the degree to which the findings of the research will remain consistent should the research be replicated within a similar context (Green & Thorogood, 2004:220; de Vos et al., 2012:421). To ensure consistency, all the selected private radiographic practice owners should be practising according to the legal framework and be meeting all the requirements relating to radiographic private practice.

The researcher presented an audit trail describing in detail how data was collected, decisions made and themes derived. It is also necessary to give a dense description of the research in order to achieve dependability (Green & Thorogood, 2004:220; de Vos et al., 2012:420). For this research project a dependability audit was compiled as follows:

- The following ethical issues were described (cf. 2.9) and adhered to:
 - Privacy
 - Autonomy and Informed Consent
 - Justice
 - Veracity
 - Confidentiality
 - Beneficence and non-maleficence

- A detailed description of the data collection and analysis was given (cf. 2.4 & 2.5)
- Thereafter, a meeting was arranged between the researcher and independent coder to discuss results and to reach consensus.
- Prolonged engagement – until data saturation was achieved.

2.8.4 Neutrality (Confirmability)

Neutrality refers to the extent to which the findings are a function solely of the participant and conditions of the research and not of other biases, motivations and perspectives (Botma *et al.*, 2010:345). In addition, objectivity is the criterion of neutrality that is achieved through rigorous methodology. In qualitative research, the neutrality of data is emphasised rather than the neutrality of the researcher. Furthermore, the criterion of neutrality is considered to be achieved when the truth-value applicability is achieved (Botma *et al.*, 2010:345). Examples of strategies used to ensure neutrality are:

- Audit trail/confirmability audit involved having a skilled researcher who is not involved in the research process examine both the process and product of the research study. The purpose is to evaluate the accuracy and evaluate whether or not the findings, interpretations and conclusions are supported by the data (Botma *et al.*, 2010:345).
- Triangulation is a powerful technique that facilitates validation of data through cross verification from two or more sources. In the social sciences, triangulation is often used to indicate that two (or more) methods are used in a study to check the result. The idea is that one can be more confident with a result if different methods lead to the same result (Botma *et al.*, 2010:345).

2.9 ETHICAL CONSIDERATIONS

All research studies present some ethical and moral dilemmas that must be identified and addressed before carrying out any research in order to protect all participants from potential harm (Botma *et al.*, 2010:234). This study only

commenced once ethical approval had been received from the research ethics committees of the supervisory department and the Nelson Mandela Metropolitan University Faculty of Health Sciences Postgraduate Committee (NMMU FPGSC) (see Annexure 1). The following four (4) ethical principles were followed to ensure no harm came to the participants.

2.9.1 Beneficence and non-maleficence

The proposed study findings should benefit the participants and society and not cause any harm (de Vos et al., 2012:1174; Burns & Grove, 2011:107). To understand these concepts even better the following definitions are useful.

2.9.1.1 Beneficence

- Beneficence is an action that is done for the benefit of others. Beneficent actions can be taken to help prevent or remove harm or simply to improve the situation of others.
- *Examples of beneficent actions* are resuscitating a drowning victim, providing vaccinations for the general population, encouraging a patient to stop smoking and start an exercise programme, talking to the community about Sexually Transmitted Disease (STD) prevention (Botma et al., 2010:351). In this research, beneficence was enabled by the research participants who allowed the researcher to interview them in the hope that the information provided will help benefit others in their pursuit of opening their own private practices.

2.9.1.2 Non-maleficence

- Non-maleficence means to do no harm
- *Examples of non-maleficent actions* are stopping a medication that is shown to be harmful, refusing to provide a treatment that has not been shown to be effective (Botma et al., 2010:351). In this research, maleficence was enabled by the researcher through his efforts in

keeping the participant's information as confidential as possible because disclosing that information might cause harm to the businesses owned by the participants.

2.9.2 Autonomy and Informed Consent

The researcher respected the right of free choice and ensured informed consent was obtained before carrying out any interviews (Botma et al., 2010:350; de Vos et al., 2012:117). The NMMU FPGSC granted ethical permission (see Annexure 1). The HPCSA Board of Radiography was asked for permission to access the database of all registered private radiographic practice owners in Limpopo and Gauteng. The request was refused for ethico-legal reasons, but since the participants were independent practice owners there was no need for official permission to gain access to the sites, but each participant had to give written consent to become part of the study (cf. Annexure 3).

The researcher ensured a regular review of what the participants had consented to and ensured that this was carried out as referred to in the consent form (cf. Annexure 3). It enabled the researcher to renegotiate features of the consent that were not included in the original form (Botma et al., 2010:351). All participants were reassured that they have the option to withdraw from the research at any time without penalty or repercussions (Botma et al., 2010:351). It was relevant to this study because the participants are busy professionals who may have to cancel other commitments to attend the interview and if they feel unimportant to the research they might choose to attend alternative meetings.

2.9.3 Justice

All findings and results presented are those of facts stated in the interviews. All participants' experiences and perceptions were portrayed as they were stated in the interviews; no false information or accusation was included in the final report. Ethical issues may arise at any point during any study regardless of the thoroughness of planning, therefore was important that possible ethical issues were identified, prevented and reviewed as best as possible before, during and

after the study. Ethical principles provided direction to possible issues not answered (de Vos et al., 2012:95; Burns & Grove, 2011:107).

2.9.4 Veracity

Veracity is the principle of truth-telling, and it is grounded in respect for persons and the concept of autonomy. For a person to make fully rational choices, he or she must have the information relevant to his or her decision. Moreover, this information must be as clear and understandable as possible (Campbell & Campbell, 2000:57). Truth telling is violated in a number of ways. The first violation is due to the act of lying or the deliberate exchange of erroneous information. However, the principle of veracity is also violated by omission, the deliberate withholding of all or portions of the truth (Botma et al., 2010:351). Finally, the principle of veracity can also be violated by the deliberate cloaking of information in jargon or language that fails to convey information in a way that can be understood by the recipient or that intentionally misleads the recipient (Botma et al., 2010:351). In this study, the questions and any communication with the participants were done in a language that is clear and understandable to the participants and the terminology used was one that is familiar to the participants in their field of work.

2.9.5 Confidentiality

Confidentiality refers to the commitment by the researcher to keep the identity of the participants confidential (Babbie & Mouton., 2012:523). In this study, confidentiality was ensured by permitting no one besides the researcher to know who the participants were. The researcher used numbers, letters or other codes as identification of participants.

2.9.6 Privacy

Privacy is defined as that which normally is not intended for others to observe or analyse. The researcher has enforced the necessary precautionary measures whereby all participants reserve the right to decide for themselves to what extent

their attitudes, beliefs and behaviour should be revealed (de Vos et al., 2012:119). Privacy and confidentiality were maintained at all times; all findings were portrayed in a confidential manner, and no personal or identifiable information were recorded or printed for the study (Campbell & Campbell, 2000:154). Once all the data from the research was transcribed, the data was stored in a password protected folder with restricted access and stored on an external hard drive to which only the researcher had access. During the study, all participating individuals and their interviews were coded numerically; no names were used and their responses were not identifiable.

2.10 SUMMARY

This chapter described the research design and methods, with the emphasis on data gathering, sampling, data analysis, as well as ethical standards. The concepts mentioned above give a detailed description of how the research was conducted in order to form a basis for the next chapter where the data acquired from the participants and the analysis of the data will be presented.

CHAPTER 3: DISCUSSION OF RESULTS AND LITERATURE CONTROL

“Data is referred to as information that any situation provides to an observer and it is defined as the rough materials researchers collect from the world or people they are studying”.(Green & Thorogood, 2004:154).

3.1 INTRODUCTION

Chapter two (2) described the research design and methodology used to conduct this study together with the methods employed to ensure trustworthiness and the considerations related to research ethics. Chapter three (3) discusses the sample used (cf. Table 3.1) to generate data and the identified themes and sub-themes (see Table 3.2) that resulted from the data analysis using explanations found in the literature to give them more meaning. The identified themes and sub-themes fit with the research questions and objectives, as will be demonstrated in the discussions to follow. In order to paint a clear picture of the outcomes of the data analysis, the researcher will describe each theme together with its subsequent sub-themes in relation to applicable literature.

Three main themes with their related sub-themes were identified and are reflected in Table 3.2 in section 3.2 of this chapter. The first theme focuses on personal attributes and refers to personal characteristics that become the catalyst propelling an individual into becoming a private practice owner. The second theme is about knowledge of private practice radiography and radiology and refers to the knowledge and experience an individual gains in the field of radiography, which then enables the individual to practise independently. The third theme is about understanding the business side of private health and refers to the individual’s business insight regarding the way private health works and the different ways it can be used to the practice owner’s advantage. It also deals with positioning the practice within the health system. The positioning refers to how an individual should place his or her practice within this system and the different aspects of the system that the practice owner needs to explore in order to maximise the profitability and sustainability of his or her practice. A literature control will be used

to give meaning to the findings of this study and to place the findings within the present academic literature.

3.2 THE CONTEXT OF THE STUDY

The main focus of this study is the private radiography practice environment, and the study is primarily concerned with the unique context of private radiographic practices in the Gauteng and Limpopo provinces. These provinces were selected because they hold the highest number of radiographic private practices in the country with a high success rate. The researchers, therefore, had access to radiographic practice owners who gave him an extensive description of their experiences in their specific contexts and how they manage sustainable and profitable private practices. The researcher was also able to identify the true conduct displayed by people when observed in their work environments and real-life contexts.

3.2.1 Characteristics of the sample

The sample for this study is made up of nine (9) participants who are radiographic private practice owners. Table 3.1 below depicts the gender and professional profile of the participants. Each of the participants owns and private radiographic practice. All participants were experienced in both managing and sustaining their practices which made them suitable candidates to answer the research question which was *“How can radiographic practitioners be assisted to manage sustainable private practices”?*

Table 3.1 contains the participants' gender, position, experience and qualifications and reveals that the majority of the respondents were aged between 30 and 55 years and both genders were almost equally represented in the sample.

Table 3.1: The gender and professional profile of the participants

Participant	Gender	Professional status	Experience since qualification	Qualification
Interviewee 1	Male	Radiographer	12	National Diploma Radiography
Interviewee 2	Female	Radiographer	30	National Diploma Radiography
Interviewee 3	Female	Radiographer	16	National Diploma Radiography
Interviewee 4	Female	Radiographer Business Woman	32	National Diploma Radiography Master of Business Administration degree
Interviewee 5	Male	Radiographer	10	Bachelor of Technology (Radiography)
Interviewee 6	Male	Radiographer	18	Bachelor of Technology (Radiography)
Interviewee 7	Female	Radiographer	25	National Diploma Radiography
Interviewee 8	Male	Radiographer	27	National Diploma Radiography
Interviewee 9	Female	Radiographer	36	Bachelor of Technology (Radiography) Mammography Case management certificate

The table below (Table 3.2) presents the themes, sub-themes and related categories identified from the interviews.

Table 3.2: Themes and Sub-Themes

Themes	Sub-themes	Categories
1. Personality traits that became the catalyst	1.1 Clear sense of practising independently- developed business management skills	<ul style="list-style-type: none"> • Clear sense of practising independently • Educating yourself to run a private practice
	1.2 Entrepreneurial spirit	<ul style="list-style-type: none"> • Self-identification as a manager and not just a practitioner • Shows determination • Importance of spiritual beliefs • Prompted by negative experiences to enter own practice • Strengthened by previous experience of practice
	1.3 Recognises future trends and the importance of following those trends	<ul style="list-style-type: none"> • Mentoring radiographers for private practice is important • Identification of services that are profitable • Understanding the value of research
2. Knowledge and experience	2.1 Understanding private practice (Radiography)	<ul style="list-style-type: none"> • Understands the system of Medical Aids for radiography • Sustainability through supportive technologies • Contracts with support staff

		<p>in areas where she/he does not have expertise</p> <ul style="list-style-type: none"> • Importance of marketing one's services
	2.2 Having a clear sense of how an independent private practice works	<ul style="list-style-type: none"> • Positioning the practice to have critical mass of referrals • Practices sound financial management • Delivers Occupational Health services in industrial settings/remote sites • Large scope of business requires specialised management team • Diversified business model: mobile and two branches • Recognises cost-saving measures
	2.3 Understanding relationship management required in private radiography	<ul style="list-style-type: none"> • Applies positive interpersonal skills • Good communication is important • Time management is important • Convenience to patients
3. Understanding the business side of private health (Business acumen)	3.1 Positioning within the health system	<ul style="list-style-type: none"> • Acknowledges a wider diagnostic system with Radiologists/ related services • Acknowledges the importance of being part of a health systems network

	<p>3.2 Business management skills for health sector are important for sustainability</p>	<ul style="list-style-type: none"> • Understanding the need for capital to purchase equipment • Diversifies his investments and therefore radiography practice is more sustainable • Practices sound administrative management • Practices sound financial management • Importance of lessons learnt through reading in business • Legal support alongside financial support to sustain the practice
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3.3 DISCUSSION OF FINDINGS

The themes and sub-themes stated above that emerged from the interviews while exploring the realities of managing a sustainable radiographic private practice in the Limpopo and Gauteng provinces is described extensively in this section. The intention is to provide a thick description related to the experiences of these radiographers while managing and sustaining these private practices. These findings were also supported by using existing literature; that is the literature control.

Each theme and sub-theme is introduced and verbatim quotations from participants are used to present their realities regarding their experiences related to managing and sustaining these private practices. The verbatim quotations from multiple participants helped in ensuring the trustworthiness of the research

findings. It is also important to note that for each sub-theme described a list of related categories would also be listed to show the interrelations between the codes. Literature is presented to confirm or disprove the findings of this study in a significant manner. The participants' quotes used may not be grammatically correct because it represented actual statements made by the participants during the interviews and these were reproduced verbatim. It is important to note that a study of this nature has not been done either nationally and therefore literature to support the findings will be drawn from other areas of study that relate to the specific sub-theme outcomes of the study. The reason for this relates to the fact that management and sustainability are very universal concepts with specific outcomes, and this study aims to prove that when these two concepts are executed correctly, the results are always positive.

In the absence of specific literature on sustainable ways to manage private radiography practices, the results from other sustainable professional practices are used to validate the findings of this study. It is also important to note that sustainability is a management concept and therefore, to prove or disprove the subjects that will emerge from the research interviews; the researcher had to look at management literature to get answers. The reason for this is that private practice is a business and sustaining a business means that one must employ sound business management practices.

The data analysis revealed an interrelatedness of themes. The interrelationship of the themes posed a challenge to isolate the information completely in each theme. Hence, there were overlaps of information in multiple sub-themes. A detailed description of the themes and sub-themes is presented below.

3.4 THEME ONE: PERSONALITY TRAITS THAT BECAME THE CATALYST

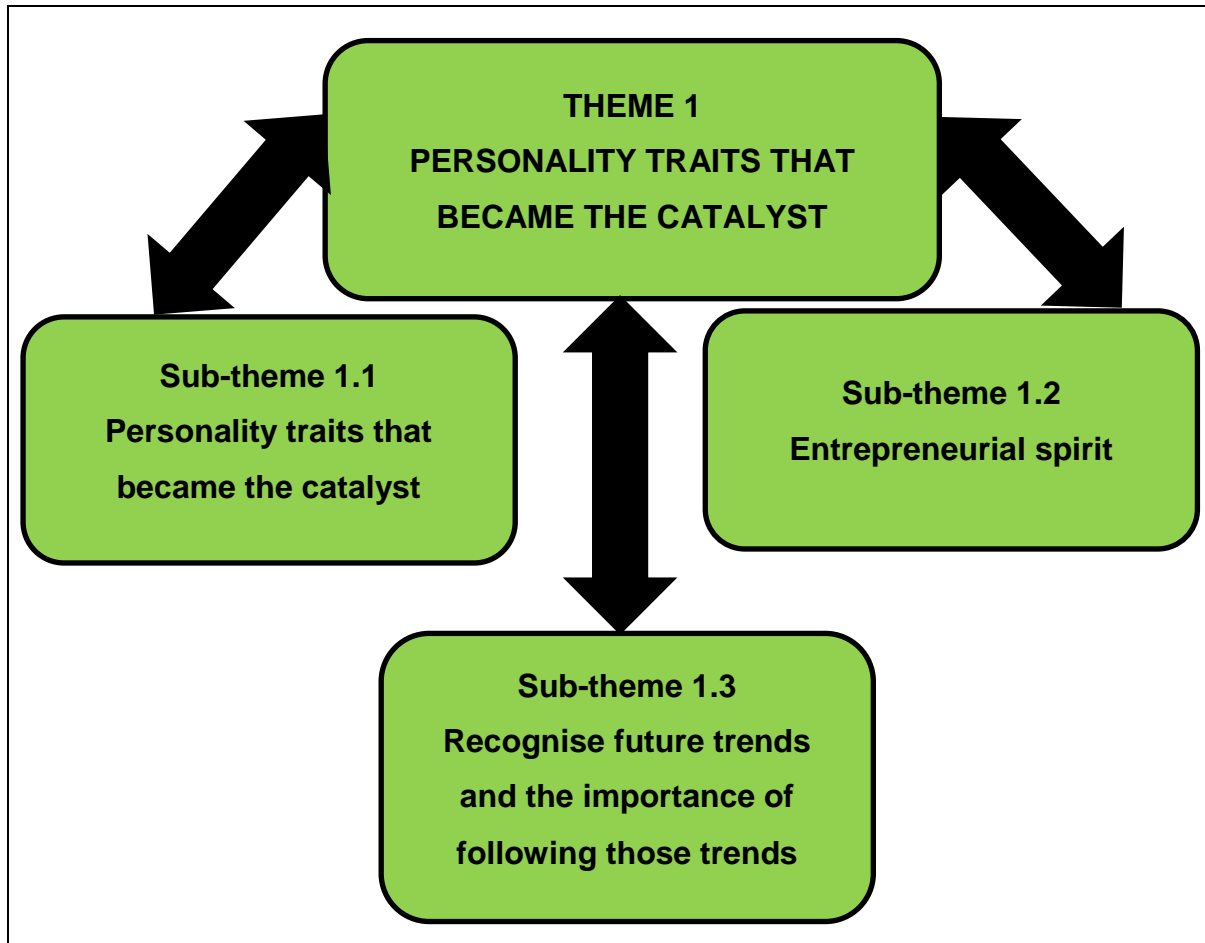


Figure 3.1: Theme One

Figure 3.1 above, demonstrates theme one with the three subthemes and how they interrelate.

It is important to note that the story being told here is of an independent private practice radiographer. This theme relates to inherent individual qualities of a radiographer, which leads to them wanting to practice independently (entrepreneurial attributes/spirit). It mainly refers to the individual's sense of independence and the mindset of "*I can do better on my own*". It is also important to note that these personal attributes relate to qualities that an individual is born with or, as in most cases, which they discovered while practising as a radiographer in the field. Therefore, one will find that the relevant personal attributes that led these private practising radiographers to go independent are discussed below. In other words, there will be discussions on the 'clear sense of

practising independently', 'entrepreneurial spirit' and 'recognition and following of trends'.

3.4.1 Sub-theme 1.1: Clear sense of practising independently

“Look man, my experience with radiologist has never been a pleasant one and the less I have to do with them the better, so I have set up my business in such a way that there are minimal interactions with radiologist, and I personally feel that radiographers are more important than radiologists because we know how to produce good diagnostic images and all they do is report on the images we produced”

This participant is displaying a sense of independence that is rooted in his frustration with radiologists because he feels that radiographers are the ones who run departments, operate machines and image patients using x-ray equipment, and yet the radiologists takes all the credit and the financial reward. This led to him asking the question of “what if I can own the equipment and practice on my own?”. This kind of experience often leads entrepreneurs to make the decision to turn their dreams into reality (Demers, 2014).

“The management of a practice this size is extremely cumbersome as it involves all elements of management hence we had to employ a management team with different skills that help support the company in achieving its goals. The management team consists of a marketing team which deals with all the surgeons we work with and new ones that need our services; their main role is to ensure that our clients know what kind of service we offer and to keep an on-going relationship with them”.

This participant shows a sense of independence due to her understanding that a practice is a multi-layered entity which needs other professionals who are not radiographers in order to make it work. This proves her understanding that a private practice radiography manager needs to be outside of their primary profession, which means employing or outsourcing other professionals in order to be sustainable (Demers, 2014). Demers (2014) clearly states this in his article

“Decisions Every Entrepreneur Must Face” by defining that the mindset of an entrepreneur is adaptive in the sense that when faced with challenges, they trust their gut feel to guide them into making the right decision that will benefit the business.

“Then there is me the CEO, and my job is to ensure that I have the right individual to carry out the goals of my company, and it is my duty to ensure that the company works as a team to help make this place a reality. To think that I started as a radiographer doing theatre in one hospital and now we have grown into a multimillion-rand business which provides theatre x-ray services across Gauteng”.

The above quotes from the interviews clearly demonstrate the mindset of these participants, and that is independence from any ‘boss’ or any company that will tell them what to do, leading to the sense of practising independently, which has driven them to open and run their private radiography practices. Independence is said to be one of the motivators that lead to entrepreneurship, and its role is driven by that so-called sense of wanting to make your own decisions and being your own boss. It is demonstrated through the character of the entrepreneur where they feel frustrated in environments where they are not allowed to make decisions or have to wait to be told what to do. Hence, within the entrepreneurial character, there is that sense of “I can do this better”, and this then becomes the driver towards wanting to be independent (Hessels, van Gelderen & Thurik, 2008:323). It shows that an entrepreneur always feels that they can make the decisions themselves (Hessels, van Gelderen & Thurik, 2008:323).

The clear sense of practising independently, can be related to the early days of radiography in South Africa where, in the late 1970s, the Society of Radiography of South Africa saw the need for the profession to exist independently of radiology. It was then that radiographers saw themselves as a separate service from radiology and that the existence of radiography could be independent to that of radiology (Society of Radiographers of South Africa, 2000). The literature on entrepreneurship further proves this, where individuals look at their current field and recognise opportunities and exploit them for their personal benefit. This

happens due to business attributes that are developed while working in the field of radiography, especially in private practice radiology (Kotler, 2001:10; van Rheed, 2013). It is an indication that radiographers who are entrepreneurs do not just work in private practice, they also learn in private practice; the amount of knowledge learned starts from knowing reception work, medical aid claims, computer systems, radiography techniques and reporting of images. In many cases, radiographers employed in a private radiology practice come out knowing only about the radiography technique part and maybe the computer systems. An entrepreneur absorbs everything and asks all the right questions to be fully informed of the space in which they are operating. Once all the knowledge is in place, they start identifying opportunities that can benefit them. That can again be attributed to the entrepreneurial spirit that is within them. The following section will provide a discussion on the entrepreneurial spirit.

3.4.2 Sub-theme 1.2: Entrepreneurial spirit

The entrepreneurial spirit is a personal gift that inspires one to strive for more and is drawn from an individual's passion, positivity, leadership and ambition. The Entrepreneurial spirit is characterised by innovation and risk-taking (Spirit of the Entrepreneur, 2008). This definition clearly identifies the characteristics needed by someone who goes into private practice radiography. These characteristics make the individual strong and determined to achieve more in their quest of becoming private practice owners. As mentioned before, an entrepreneur wants to know all and in the process of knowing they start looking for opportunities that can benefit them or even their society. In the case of private practice radiography, the entrepreneur has learned everything there is to learn about private practice radiography as an employee. The entrepreneur then starts asking the question of 'how can I use this information to benefit me and my community?' The following quotes are evidence of the entrepreneurial spirit and how it is expressed by someone who is in private practice.

"In order to be successful in life one needs to look in places where no one has looked, find new ideas and use whatever qualifications they have to create new innovative businesses which will help others."

“To run this type of business you first need the hunger and some also call it the entrepreneurial spirit which simply is the desire for more and no textbook can teach you that.”

“We are living proof that it can happen and this is all because of the entrepreneurial spirit that we had when we started, the moment an individual has the drive and is willing to work hard at making it happen everything else falls into place.”

The above quotes are the manifestation of the entrepreneurial spirit that is within these participants, and it is clear that they are passionate about their choice to work independently in their own practices. Literature suggests that entrepreneurship is linked to education, work experience and prior business knowledge (Venter & Urban, 2008:123). Looking at the participants' responses one clearly sees the link because the decision to go private was mostly prompted by the culmination of all the knowledge they had gained thus far. It is also linked to the spiritual belief that God prepares one for a certain purpose, and some believe that once all the required knowledge is in place, he then sets you free on a slow journey to pursue your purpose (Venter & Urban, 2008:123).

To further prove that the entrepreneurial spirit is vital in the pursuit of success, an article on “Problems and Prospects of Entrepreneurship in Medical Radiography Practice in Enugu, Nigeria”, discusses the difficulties associated with opening a radiography private practice. Therefore, only a driven individual can withstand the challenges that come with this venture (Chukwuemeka, 2010). Van Rheed (2013) further outlines the difficulties associated with running such private practices and her negativity regarding this subject indicates the lack of this entrepreneurial spirit. While Venter and Urban (2008) state that in the pursuit of success the entrepreneur keeps a positive mindset and sees every challenge as a learning curve that will propel them into becoming problem-solving individuals who can handle any challenge.

When observing the qualities of the entrepreneurial spirit, it is only fair to say that

literature confirms that it is the catalyst to act on this need for independence and it is important that one does not ignore it but instead uses it as the driving force to push them towards achieving their goals. These individuals have answered the questions “what, when and how?” and are now looking to implement their ideas by looking at societal trends and how they can fit what they have learned into the private practice arena.

3.4.3 Sub-theme 1.3: Recognises future trends and the importance of following those trends.

Trend recognition, also known as opportunity identification, is regarded as central to the domain of entrepreneurship (Kuratko, 2008). At its core, entrepreneurship revolves around the questions **why, when and how** opportunities for the creation of goods and services in the future arise in an economy. Thus opportunity recognition is an originator of both personal and societal wealth (Kuratko, 2008). In the context of this study, trend recognition is very important to the sustainability of these private practices. Hence the private practice needs to be continuously up to date with trends in medical aid, medical procedures, imaging equipment, etcetera. This then enables them to find new ways of producing images and thus saving costs.

There is also the element of mentoring young radiographers into private practice, and this takes the form of hiring locums who learn everything and sometimes become partners or even take over the practice. Here are a few quotes from the interviews to support the above contention:

“But I have been in negotiations with management to move from conventional to computer radiography (CR) even though CR equipment is expensive, in the long run, I will save a lot of money as there will be no film and no chemicals to be bought.”

The above quotation is an illustration of how this private practice owner understands that using digital x-rays will be in line with the current trend regarding quality and presentation. It is also important to note that the participant also

recognises that this change might be expensive now but it will lead to cost-savings in the long run.

“The other duty that has recently been handed to me by the mine is the digitising of their 40-year storage x-rays. This then means that all the x-rays that were done since the mine started doing x-rays are then stored for 40 years after the employee leaves the mines to keep a medical record of the miner in case they lay a medical claim against the mine. This then means that I have to scan all the conventional x-rays into digital format to prevent them from losing diagnostic quality. This project will take an estimated five years, and I charge the mine R400 per hour for these duties. This means that I do x-rays from 6am to 12am, and I digitise from 12 till 2”.

The above quote is another example of trend recognition, and in this case, the entrepreneur has used digitising of x-rays to their advantage by making a profit, but at the same time, preserving the diagnostic images for the mine in a sustainable way.

The above quotes clearly demonstrate how these private practice owners keep up with the times to enable their practice to provide up to date services to their clients. This makes it easier for them to be positioned in emerging markets which require technologically advanced businesses. Literature suggests that trends signal a shift in the current paradigm or thinking of the major population. Observing trends carefully will grant the entrepreneur the ability to recognise a potential opportunity. It is the entrepreneur's duty to recognise trends especially in society, technology, economy and government (Kuratko, 2008). Venter & Urban (2008) describe the entrepreneur as a trendsetter who has a clear understanding of what is happening in the market and uses that knowledge to find new ventures that will be profitable. In the context of Enugu, Nigeria, Chukwuemeka (2010) identifies the opportunity presented by changes in technology and how these can help radiographers from that area to remotely obtain reporting and thus provide good quality services in their private practices.

It is safe to say that literature agrees with the assumption that research and trend

recognition are one of personality traits that drive a person to independence (entrepreneurship). In the case of our participants, they acquired the knowledge, identified how the knowledge could benefit them and the society at large, and now they are applying the knowledge within their workspace. The application of this knowledge is closely related to what is happening within the market, and that can be attributed to the constant trend recognition and research done by the entrepreneur. This all-encompassing idea of entrepreneurship arises from knowledge and experience that a radiographer gains in the workplace. This concept will be examined more thoroughly in the next section.

3.5 THEME 2: KNOWLEDGE AND EXPERIENCE

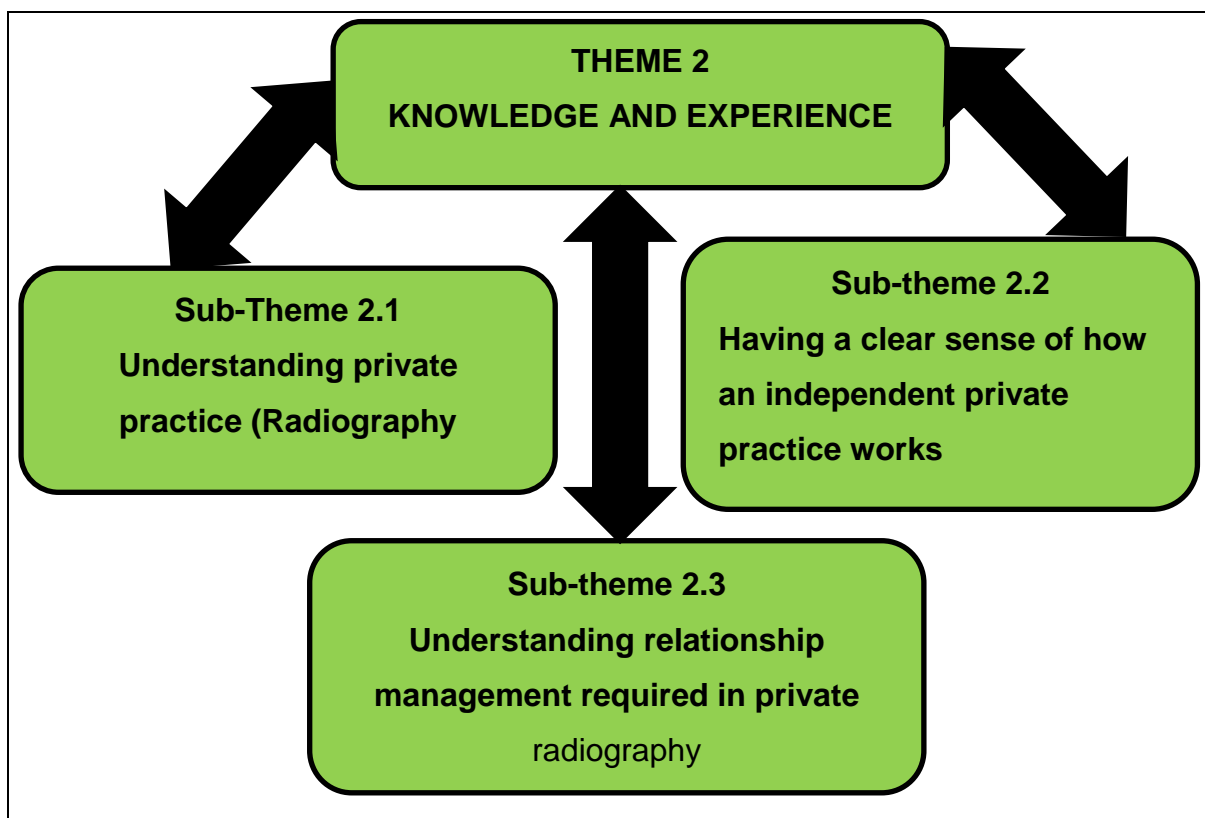


Figure 3.2: Theme Two

Figure 3.2 above, demonstrates theme two with the three subthemes and how they interrelate.

Knowledge is defined variously as facts, information and skill acquired through experience or education or it is the theoretical or practical understanding of a

subject (Knowledge, n.d.). Experience is defined as the skill or knowledge that you get by doing or experiencing something (Experience, n.d.). The definitions mentioned above are ideal for introducing this theme that relates to the knowledge and experience gained in private practice by radiographers who ultimately use that knowledge in their private practices.

The key to understanding this theme is knowing that when a radiographer goes into private practice (from training or a government department), they are clueless about private practice unless they were trained in a private setup, but even then the responsibilities change and many new factors come into play. These factors include patient care, extra examinations and views performed, billing of the patient for the different views, authorizations before examinations, patients with previous bad debt and reporting of every examination performed (Van Rheed, 2013).

The factors above might sound simple for a person in a private radiology setting, but for someone coming from a public hospital, it could be overwhelming. It causes that some of them don't come back after the first day, and this is the result of not wanting to learn or do more, but unfortunately this is the nature of private practice. The point being made here is that there is a lot to grasp when working in private practice and even people who have been there for years still don't know certain aspects of how the different patients pay for an examination. It, therefore, takes an inquisitive mind to know the ramifications of working in a private setting and it takes an entrepreneur to see how all that knowledge and experience can be used to open a private radiography practice.

3.5.1 Sub-theme 2.1: Understanding private practice radiography

This theme can be defined as knowledge that a radiographer acquires in private practice radiography/radiology that empowers them to be able to run their own private practice. The understanding of a radiographer is important in preparation for private practice. Hence, there are many levels at which a radiographer has to acquire knowledge within the sphere of private practice that will enable them to be private practice owners. Some quotes from the research participants will further illustrate the relevance of this theme.

“To run this type of business you first need the hunger and some also call it the entrepreneurial spirit which simply is the desire for more and no textbook can teach you that. Then there is of course the radiography skills, recruitment skills (having the right people in place to support your business), relationship management (most books call relationship marketing) and then some financial knowledge to make sure that people don’t misappropriate your funds (that’s basically a nice way to make sure people don’t screw with your money). All this means is that one must make finances continuous by putting money in places where more will come out thus making you more sustainable”.

This participant expressed the multiple layers of understanding that are required in the mindset of a private practice owner. Most of this knowledge can only be acquired by an individual who is willing to learn more because most of it is outside the sphere of radiography. This relates to the inquisitive mind of an entrepreneur who finds knowledge in places where most people do not look and then uses it to his or her advantage.

“The other element of my practice is the claims process from medical aids and that is done by my receptionist who used to work in the hospital claims department and does all the claims digitally through a very expensive medical aid claims programme (honestly I don’t know what I would do without her). The hospital owns the x-ray equipment, and we operate it for them, and in return, we charge the radiographer fee of R250 per 30 minutes and they charge for the equipment use”.

This participant demonstrated knowledge of the claims system in the private health care set up, and without this knowledge, one would not be able to claim money from medical aids. This participant also showed that when one is in a private set up, one needs to be always able to get the right people and systems in place to achieve the goals of the practice which are profitability and sustainability.

“The marketing of our business is essential because all the doctors in the

township have to know that we exist for them to use us. So we have a database of all the medical practitioners around and regularly attend their CPD meetings to market ourselves”.

This participant touched on the marketing elements of a practice where one needs to make sure that all the health professionals who need to use the service know exactly where to find it. This is the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfy individual and organisational goals (Kotler, 2001:2). Private practice marketing is all about creating relationships with fellow health professionals and always making sure that they are happy with the quality of service provided by your practice. Methods to be used include Media Based Marketing, Print Based Marketing, the Practice Website and Networking, and Referrals (Evans & McKittrick, 2010).

The above quotes are all about the mindset of wanting to know all about a private practice and knowing how that knowledge can benefit the entrepreneur in their own business (Kuratko, 2008). Kuratko (2008) further defines this knowledge acquisition as the key in the process of developing what is called the business acumen (see next theme).

In the context of nursing, it is taken even further in the sense that the nurse with the most knowledge and experience starts helping junior doctors to carry out proper diagnosis and treatment of patients (Buppert, 2015:54). These nurses take that knowledge and use it in their own private clinics and in their contexts where they provide cheaper good quality services for patients who need primary nursing care, but the requirement is that the nurse must have the relevant knowledge and experience (Buppert, 2015:56).

The above quotations clearly demonstrate how knowledge and experience gained in private practice help in understanding how the private practice setup works. Again, it is important to note that most of this knowledge is outside the scope of radiography, however having it is very helpful for the private practice owner to have a clear sense of how things work.

3.5.2 Sub-theme 2.2: Clear sense of how a private practice works

Private practice is defined as the work of a professional practitioner who is working independently for themselves or/and their partners (Private Practice, 2016). This definition clearly puts into perspective the mindset a professional must have before going into private practice and these words “independently for themselves” ensure that the practitioner clearly understands that private practice works by providing a good quality service and ensuring that the income made, keeps your practice sustainable. A few quotes from the research participants will help bring more clarity to the subject.

“This practice has been established on the first rule of business which says location, location, location. The whole idea around this practice is that it is situated in a location where all the taxis from the different parts of Soweto stop before people take a second taxi to town and all the other suburban places of Johannesburg. This then means that because Soweto has over 200 different zones it has Doctors amounting to over 500 and all their x-ray referrals have to go to town and other suburbs as there is no radiologist around but for them to get to town they have to go through Bara taxi rank to catch a second taxi. This is where we come in because we offer x-ray services with a radiology report and we save them the taxi fare to town”.

The above participant has used his knowledge of business in order to position his practice, and he has placed his practice in the best place where he will get the maximum number of referrals. This is again a demonstration of how business strategies help the entrepreneur achieve his or her goals by using the knowledge that is not readily available within their field of study (Dang & McKelvey, 2016:34).

“Secondly, keep your running costs to a bare minimum in order to increase your profit margins. Always pay your debtors, taxes and ensure that your paperwork is in order for every patient, because if you mess up your relationship with the medical aids your business will go down”.

The participant demonstrated a clear understanding of the financial knowledge

required to run a practice and all of this stems from the knowledge they have from experience in private practice. Most of the knowledge is not directly from what one has worked with in private practice. Most of it comes from when one comes across a financial document in the practice they are working in and, instead of ignoring it, the entrepreneur does research on the information contained in the document and gains the knowledge of what the document is all about (Van Rheed, 2013).

“The management of a practice this size is extremely cumbersome as it involves all elements of management hence we had to employ a management team with different skills that help support the company in achieving its goals. The management team consists of a marketing team which deals with all the surgeons we work with and new ones that need our services. Their main role is to ensure that our clients know what kind of service we offer and to keep an ongoing relationship with them, the other element is the Human resource team which is responsible for recruiting locum radiographers and to help us with our theatre lists. This takes us to the next department which is the claims department and this department has people who are trained in claims processing and the following up of claims. They deal with all medical aids and once claims are not paid the cases are handed over to a legal department which is outsourced to a lawyer. Then there is the finance department which allocates funds, makes payments and records all financial transactions in the company. They work hand in hand with human resources to ensure that salaries are paid, invoices are received and sentence.”

Here we see the participant’s understanding of how a practice is managed through a process of delegation or placing people with the right knowledge in the right place for the practice to function properly. We see the start of understanding that private practice is a business and, to run a business, one needs a multidisciplinary team to execute the goals of the business properly (NQB UK, National Quality Board United Kingdom, 2013).

In the Nigerian context, the understanding of radiographers on how a private practice works are seen as one of the problems and literature states that these

radiographers tend to have the mindset of being employees, rather than one of practising independently. It poses a challenge for the Nigerian government because there are only a few radiologists and it is impossible for them to open branches in remote areas of that country. Hence radiographers would be of great help in bridging the gap in those areas (Chukwuemeka, 2010). If the radiographers in Nigeria had a clear sense of how private practice works they could use their knowledge to pursue the opportunities presented by the gaps in radiology in remote areas where there are no radiology services. In the South African context, Van Rheed (2013) states that radiographers do possess a percentage of the knowledge, but the struggle lies in the capital required to start a private practice. The above quotations clearly demonstrate how having a clear sense of how a private practice works help in the understanding of how to run and sustain a private practice setup.

3.5.3 Sub-theme 2.3: Relationship management required in private practice

Private practice marketing is all about creating relationships with fellow health professionals and making sure that they are happy with the quality of service provided by your practice. Methods to be used include Media Based Marketing, Print Based Marketing, the Practice Website and Networking and Referrals (Evans & McKittrick, 2010). Relationship management refers to how one treats and behaves around fellow professionals, colleagues and patients. This is very important because if one maintains good relations with those around one, half the battle is won. Some quotes from the research participants give evidence to the theme at hand.

“The key to being sustainable is creating sustainable relationships and having good relations with the people that need your services and the people that support your services. That means that if they are happy you are happy”.

This is a clear indication of the mindset that a private practice owner should adopt, namely a sense of community where the health service that you provide complements and forms part of other health professions. Thus it creates

sustainable relations with surrounding health professionals that will make them dependent on the service the practice provides.

“Time management skills and this is essential if you are working alone because you need to be on time to perform your duties otherwise you will be seen as unprofessional”.

This quote has much to do with professionalism and the fact that a service provider should be seen as reliable at all times and for the people who receive the service to know that they can depend on you. It creates a sense of trustworthiness.

“... to answer your question, managing a small practice like this is not difficult because I have no employees and I have seven doctors that refer patients to me and they are all within walking distance. This then means that I can manage my relationships with the referring doctors easily and the patient doesn't have to travel long distances to be examined”.

Here we see a participant who has simplified his practice by focusing on a selected small group of doctors giving them a convenient service. This type of service provides easy access to the user and is usually very dependable, and one finds that this type of practice develops an identity within that small business cluster and is easy to manage and become sustainable due to the convenience they offer to consumers.

In the context of physiotherapy, the relationship with referring doctors is almost the only aspect that keeps the practice alive, and proper management of those relationships is pivotal (Evans & McKittrick, 2010). Van Rheed (2013) further proves this theory by stating that her practice is situated inside a doctor's surgery and the reasoning behind that was the creation of exclusivity and convenience for that specific doctor's patients and ensuring a good relationship with that specific doctor. The placement, however, has had a negative impact on that specific practice. By placing the practice in a doctor's surgery, means that patients from other doctors would have to enter the radiography practice through the door of

another doctor who is not the referring doctor. It poses a sense of insecurity with other doctors because they fear that they will be sending patients away (Van Rheed, 2013).

The above quotes and literature point to a similar understanding that the survival of a private radiography practice is mostly dependent on the proper management of the relationship with both the referring doctors and fellow health professionals.

3.6 THEME 3: UNDERSTANDING THE BUSINESS SIDE OF HEALTH

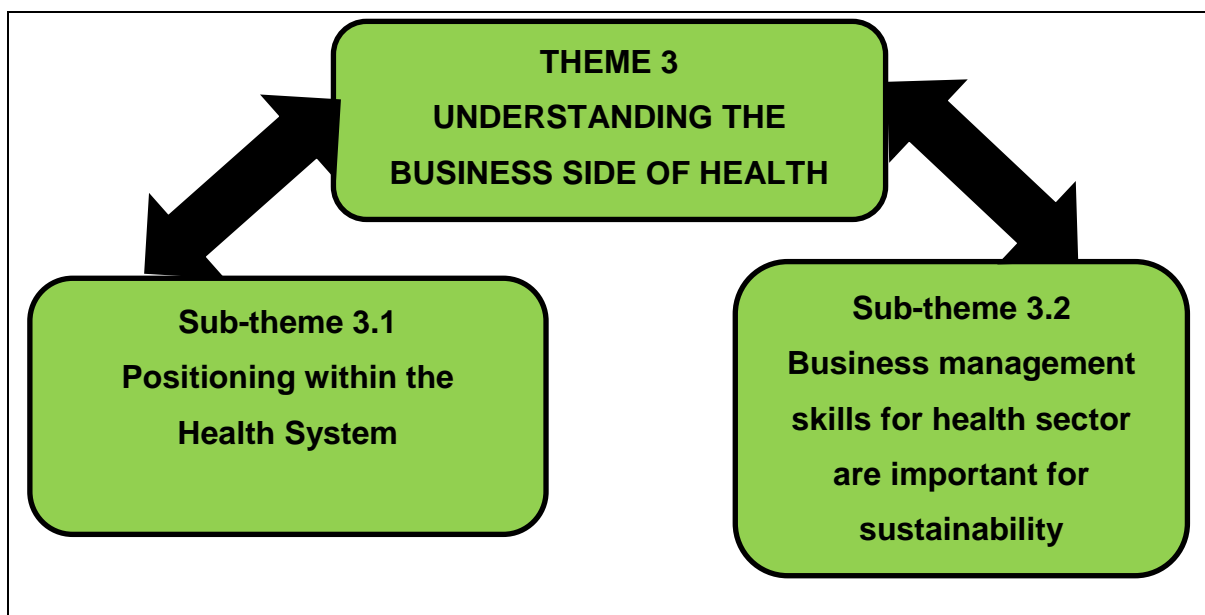


Figure 3.3: Theme Three

Figure 3.3 above, demonstrates theme three, the two sub-themes and how they interrelate.

Business acumen is the keenness and quickness in understanding and dealing with a business situation in a manner that is likely to lead to a good outcome (Business Acumen, 2012). Just by reading that definition one gets an idea of where this private practice radiographer should be in terms of his or her thinking. Once a person has identified that they have the character for independence and they have grasped all the knowledge needed in private practice, the only thing left for them to do is to grasp everything there is to know about the business side of health.

3.6.1 Sub-theme 3.1 Positioning within the health system

Positioning in a business context is defined as the process of identifying an appropriate niche market for a product or service and getting a business established in that area to sell that product or service (Daft, 2008:125). It means that a private practice owner needs to position the practice in a space in the health context where there is a market for the kind of service he/she is offering. In this way, the practice will be positioned in the best place to receive the greatest number of referrals to keep the practice sustainable (Dang & McKelvey, 2016:34). I will now present some quotes from the research participants that will clarify this theme.

“The first element is the finding of potential clients and these are the people who need your services and once you have found these clients how do you ensure that they are always happy and loyal to you.”

This participant links with the previous theme which is about finding health professionals who need the service being provided and ensuring that they are always happy. The difference is that in this case, the focus is on positioning and how the practice owner has positioned the practice. In this case, the practice is positioned in the best place to give the business a maximum number of referrals and thus keep it sustainable.

“The other thing to consider about my practice is how I manage my relationships with the doctors I work with and the hospital I work in because without them my practice would not exist. So that is why I have to ensure that I always provide them with a good quality service so that I can stay on their good side.”

This participant touched on quality, and this concept on its own is indeed affected when positioning a practice because if the quality of the service you provide is reliable, then that means that your consumers will always come to you, but if the service is bad, then consumers will look for a better service. It will mean that the

position of the practice in the health community is closely related to the quality of the service provided and once the quality is of a high standard and reliable, then that means the practice will have sustainable clientele.

Van Rheed (2013) is the best person to demonstrate positioning because in her article she speaks of the radiography practice situated in a doctor's surgery and that positions her in the best place to receive the patients of that specific doctor. However, her article further proves the importance of positioning by outlining how the position of her practice stops other doctors from referring patients to her practice because they fear they will lose patients to her associated doctor.

In the context of physiotherapy, the practices are dependent on their position and proximity to referring doctors along with other factors like marketing, etcetera. (Evans & McKittrick, 2010). In the context of nursing, on the other hand, positioning is also important, but in this case, the patient is the main attraction because nurses provide primary health care, and most of it is community-based. Hence, the survival of a nursing practice is dependent on positioning but in relation to patients due to the self-referral nature of primary health care nursing (Buppert, 2015:65).

The above quotes and literature support each other, and they prove that positioning within a health system is important for the survival of a private practice.

3.6.2 Sub-theme 3.2 Business management skills for health sector

This sub-theme is mostly an extension of the main theme, which is all about grasping and understanding the business side of health. This sub-theme will be discussed in more detail by looking at the business management qualities required in private practice and how they can be used to make the company more sustainable.

Management is the attainment of organisational goals in an effective and efficient manner through planning, organising, leading and controlling organisational resources (Draft, 2013:99). Sustainability is referred to as the process by which a company manages its resources to benefit its current needs while making sure

that those resources will be continuous enough to benefit future generations (Draft, 2013:108). This definition of management leads us to the participants' experiences of private practice management and how they plan to sustain their businesses.

“To manage and sustain a small practice one needs to have knowledge of how to run a small to medium entity and all the elements that come with it and maybe a short course on how to do medical aid claims and all the coding involved. Then there is managing a big radiography practice and for that one needs to either pay someone with business knowledge or study. I myself went and did my MBA, and that teaches you how to become an MD, CEO, etc. It teaches you how to create a multi-skilled team of individuals who will help make your business a reality with the following elements: Marketing, Human Resources, Finance, Medical aid claims, etc.

So to answer your question, I think the assistance for radiography practitioners is already there, but it is up to them to choose the skills they need depending on the size and type of business they do and educate themselves in order to be equipped to run and sustain these private practices”.

In this case, the participant focused on the skills needed to sustain a private practice, and she clearly states that the skills needed, depend on the type and size of the practice. It means that basic management skills are required for a small practice but, once the practice grows, the practice owner needs to start looking at employing staff instead of outsourcing them because accountability and loyalty now become an issue and an employee is easier to manage than a contracted service provider. This participant has chosen to use a multi-disciplinary team that will work together in the process of achieving organisational goals.

“All my knowledge about business comes from reading a lot about business and how to operate them, and I also attend a lot of workshops on how to run businesses in health.”

This participant focused on the importance of education and research in the pursuit of having the right management knowledge that will enable one to be able to manage the private practice in a sustainable way. The contrast is also seen between the previous participant who did a degree in business administration as compared to this participant who continuously reads and attends workshops in the pursuit of gaining the correct business knowledge that will enable him to run a sustainable practice.

“Sustainability to me means being able to live on the outcomes of your hard work continuously without failing and, unfortunately, the word assistance means helping others into becoming like us”. I can tell you now that no one out there is willing to help someone who does not help themselves. So the answer to your question is that we are here because we worked hard and believed in the impossible. Who would have known that a radiologist can work for radiographers but we are living proof that it can happen and this is all because of the entrepreneurial spirit that we had when we started, the moment an individual has the drive and is willing to work hard at making it happen everything else falls in place.”

This participant touched on a very important element of sustainable management, namely hard work. The participant expressed that without this element, none of what has been discussed is possible.

Chukuemeka (2010) describes management as a skill that is lacking among radiographers in Nigeria, and this stems from their mindset of seeing themselves as employees. As a result of this, the few who are managers have no desire to go into private practice because they see their positions as the highest achievement in Nigerian radiography. The whole idea behind this concept is the acquisition of management knowledge and using it to manage and sustain a private practice that one owns and, in the Nigerian context, that knowledge is wasted because radiographers stay employed despite possessing this management knowledge (Chukwuemeka, 2010). Van Rheed (2013) touches on elements of management in the South African context, but her focus is on financial management and how

late payments by the occupational health referral companies affect the sustainability of her practice.

The articles from Chukwuemeka, (2010) and van Rheed (2013) indicate that with the correct management skills the private practice can be sustainable, but the emphasis is unfortunately on the negative side of mismanagement of these skills. The most basic feature of any successful business is and always will be hard work. Hard work in this context does not only refer to physical labour but also refers to the willingness to do more, for example, more knowledge, more research, more marketing, etera. (Hessels, van Gelderen & Thurik, 2008:322). It links back to that entrepreneurial spirit that adopts a never-say-die attitude of “I will do it on my own”. The result of all of the above is the realisation that all these elements lead to a sustainable practice that will benefit future generations.

3.7 CONCLUSION

To conclude this chapter, one would have to highlight the outcomes of the information provided by the research participants and how it clearly identifies the private practice environment and the people involved in keeping it in existence. The first part described the individual who is destined for private practice and that they should possess the entrepreneurial qualities that are required to make a success of a business. The second part focused on the type of experience and knowledge that are needed to be prepared for private practice. The final part discussed business acumen, which is the understanding of the business side of private health and how this knowledge can be used to manage a sustainable practice. These themes are all interdependent, and one cannot exist without the other, but the result paints a clear picture of what a private practice radiographer is and what qualities and knowledge they need in order to manage a sustainable private practice that will benefit future generations. The following chapter will describe the limitations conclusions and recommendations arising from the research study.

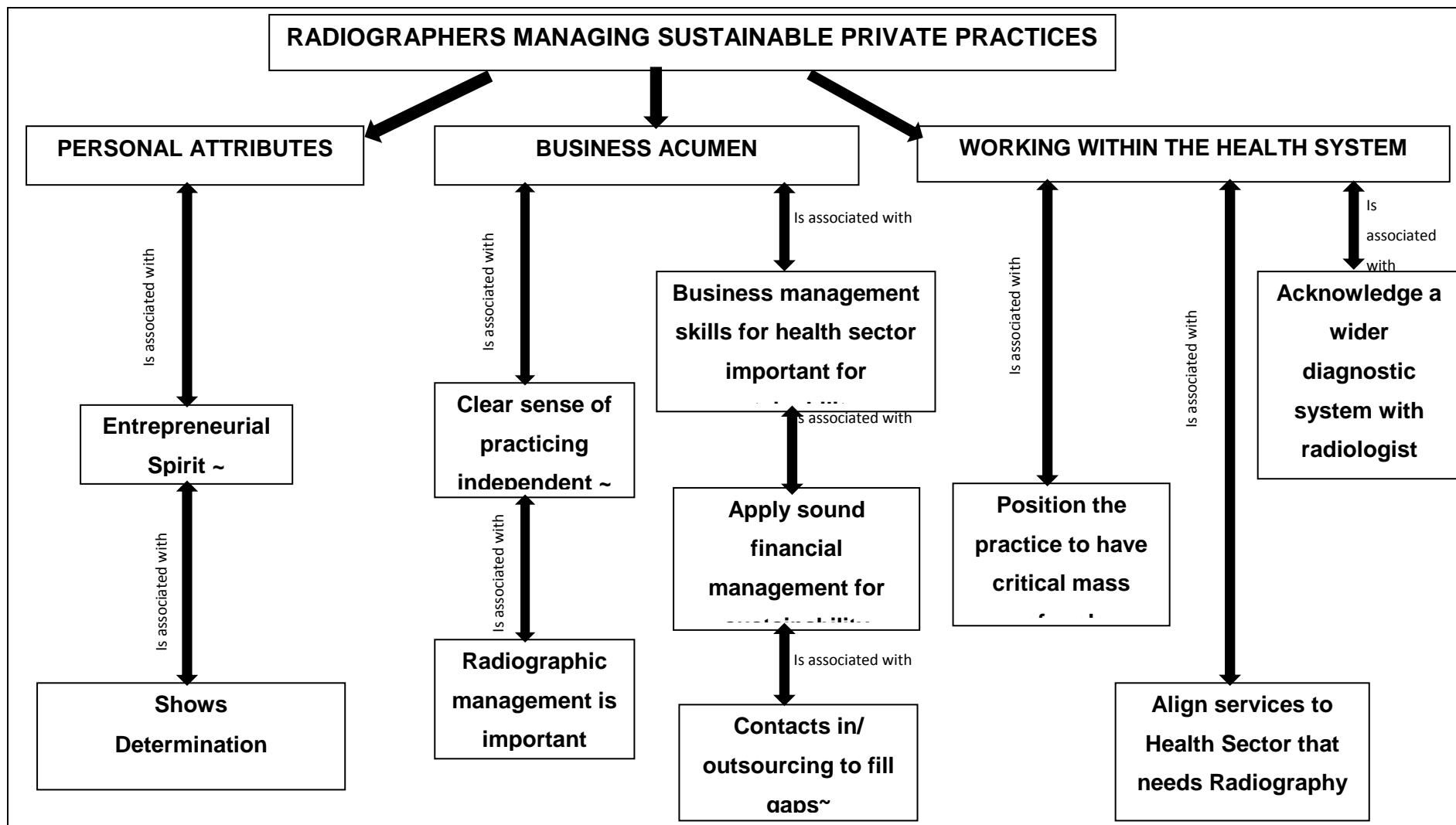


Figure 3.4 Network of possible categories

Figure 3.4 demonstrates the different theme categories that emerged from the research interviews and how they relate to each other.

CHAPTER 4: SUMMARY, LIMITATIONS, CONCLUSIONS AND RECOMMENDATIONS

4.1 INTRODUCTION

Chapter three described and discussed the findings of the research. This chapter presents the summary of the research process and findings, the limitations experienced, the conclusions and recommendations based on the data analysed in the previous chapter.

4.2 SUMMARY OF THE RESEARCH

The effectiveness of sustainable management practices in private practice radiography (Gauteng and Limpopo provinces) was investigated, and the goal was as follows:

- The goal of this research was to find radiography practices that appear to be sustainable and to identify useful features for this level of success in order to develop sustainable ways of managing private practices. The result of this research will be the creation of user-friendly recommendations regarding management strategies to help radiographers manage successful and sustainable private practices.

The background for the study looked at how private radiographic practices came into existence and the roles played by the various governing bodies in making the concept a reality. All of the above happened in the following way.

The Society of Radiography of South Africa (SORSA) has been pivotal in all the milestones of the discipline in the country from the time it was founded in the first radiography school in Johannesburg General Hospital in 1951 (Society of Radiographers in South Africa, 2000). The Society motivated for the recognition of radiography as a profession and the need subsequently arose for a professional board with the former statutory body, the South African Medical and Dental Council (SAMDC), now known as the Health Professions Council of South Africa (HPCSA) (Society of Radiographers of South Africa, 2000). In 1974 registration with the SAMDC was made compulsory for all radiographers working in the

profession (Society of Radiographers of South Africa, 2000). The liaison between SORSA and HPCSA is important as it provides an avenue for members to make representations to the statutory body. One aspect of the liaison and representations by SORSA on the Professional Board for Radiographers at the HPCSA was the lengthy negotiations (from the early 1980s to 1993) that finally allowed radiographers to open private practices (cf. 1.2). The Society compiled the private practice tariffs for private practice diagnostic radiographers. Initially, private practice was limited to diagnostic radiographers, followed by the right to private practice for all radiographic categories in 2006. Radiography is now faced with the challenge of private radiography practices that fail. This means that all the efforts of SORSA may be ineffective if radiographers allow this to continue, hence the need for research into management strategies that can help make radiography practices more sustainable and successful.

Despite the lack of specific literature, the researcher decided to carry out a generalised literature review that included information about private radiographic practices as well as other private practices in the health field and then concluded with management functions that relate to the day-to-day administration of these health institutions. To provide this description cognisance was taken of some questions namely:

➤ **Why do radiographers choose to enter private practice?**

The answer to this question is found in theme one, and the outcomes of this theme describe certain personality traits that lead a person to go into private practice. This includes:

- A Clear sense of practising independently- refers to the individual's sense of independence and the mindset of "*I can do better on my own*", this is rooted in an individual's personality, and one is born with it, or it is developed over time.
- Entrepreneurial spirit- this is a personal gift that inspires one to strive for more, and it is drawn from an individual's passion, positivity, leadership, and ambition. These characteristics make the individual strong and

determined to achieve more in their quest of becoming a private practice owner.

- Trend recognition- also known as opportunity identification, this is what makes an individual an entrepreneur, and without this quality, one would not be called such because this quality becomes the driver for business opportunities and usually, translates to income.

Through this research study, the above is a clear indication that the answer to “why radiographers go into private practice?” lies in the personal qualities possessed by these private practitioners.

➤ **How are private practices managed within health disciplines?**

The answer to this question is found in theme three of this research project where the participants speak of business acumen, which refers to the individuals’ understanding of the private health business regarding how to position themselves within the health community and the business knowledge required for running and sustaining a successful private practice.

The objectives of the study were as follows:

- *To explore and describe the views of private radiographic practitioners concerning the management of their practices:*
- *To make recommendations on how radiographers can better manage their practices to ensure sustainability.*

Theme 3.2 gives a clear answer to any questions that may arise through these objectives by describing the business skills that are required in the health sector to achieve sustainability:

- Understanding the need for capital to purchase equipment – This relates to the understanding that to purchase equipment for a radiography practice one needs to have capital and this capital can be acquired through private investments, loans, etcetera. The important thing is that one needs to be aware of the equipment needs of the practice and purchase the right equipment.

- Diversification of investments makes radiography practices more sustainable. This in turn relates to the different ways in which money made from the private practice can be saved and invested. One element is that money needs to be saved in such a way that it generates interest, which will then allow it to generate more money and that will then mean that the company expenses can be covered by the interest while the original profit is saved to accumulate further interest. The other element is investments, which relates to money being placed in safe long-term investments like property, shares, unit trusts and government bonds. The outcome of this is a financial backup of knowing that these assets generate more money over the years and when the need arises they can be dissolved to provide cash for future projects or ventures.
- Practices sound administrative management – Proper administration means that the management practices applied in the practice are practical and relevant enough to allow the department to run smoothly and this is done by ensuring that all staffing, equipment, claims and paperwork are in place and working adequately to achieve the desired outcome.
- Practices sound financial management – this relates to ensuring that costs are kept to a minimum and profit is maximised. This is done by ensuring that the practice does not spend unnecessarily and ensuring that there is an adequate financial backup for those quiet days when the numbers drop.
- The importance of lessons learnt through reading in business – this relates to how many of the participants have not had any formal business training, but they have ensured that by reading they acquire the necessary business knowledge to be able to run their businesses adequately.
- Legal support alongside financial support to sustain the practice – this is a very important heading which put into perspective the fact that there cannot be a financial agreement without a legal contract. A good example is one of the participants who works for a mine and is a service provider. Should the mine go bankrupt the only way they can get paid if the mine is liquidated is if they have a legal document that proves that there is a financial relationship between the practice and the mine. Hence, there can be no financial agreement without a legal contract.

The outcomes mentioned above from the research give a clear indication of sustainable management strategies that can help transform a private practice into a sustainable business that can be around for generations to come.

4.3 SUMMARY OF THE RESEARCH METHOD

For the purpose of answering the research question, the researcher has chosen to carry out a qualitative, exploratory, descriptive and contextual research design in order to explore and describe the detailed experiences and views of private radiographic practice owners and how they manage their practices.

The population for this study was radiographers who own private practices because they are the best sources of the information that would help the researcher understand the fundamentals of managing a radiographic private practice and what additional skills are required to make these practices sustainable.

Sampling in this study was based on the participants' expert knowledge and experience in the field of radiography private practice as well as their availability at the time scheduled for interviews that are; a purposive sample was used. Nine participants were recruited for the interviews

Interviews were conducted with the nine respondents using a prepared structured pre-tested interview schedule. The interview schedule was coded for easy analysis and analysed using the ATLAS.ti qualitative data analysis (QDA) software. The findings were presented and discussed in chapter three by making use of a table of the themes and sub-themes followed by a detailed analysis of the findings presented in correlation with literature.

The findings revealed that the majority of the respondents' age were between 30 and 55 years and both genders almost equally represented in the sample. All of the respondents were self-employed. The respondents could, therefore, be considered as business people as they all run private businesses.

4.4 INTERPRETATION OF FINDINGS

The findings revealed three main themes while exploring the views of these private practice owners and these were:

- Personality traits that became the catalyst – These traits refer to the individual characteristics that an individual possesses which drive them to want to be independent and to achieve things on their own. This study then revealed that to be an independent practising radiographer one needs to possess the following qualities:
 - A Clear sense of practising independently – This refers to the individual’s sense of wanting to do things on their own that is also referred to as the “I can do it on my own” characteristic. In the context of this research, this then propels the individual into starting their own practice and practising independently.
 - Entrepreneurial spirit – This is a personal gift that inspires one to strive for more, and it is drawn from an individual’s passion, positivity, leadership, and ambition and in the context of this research it becomes one of the personal characteristics that drive an individual into practising independently.
 - Trend recognition - also known as opportunity identification and refers to the individual’s ability to identify and recognise the opportunity. In the context of this study, this personality trait allows the individual to recognise the opportunity to provide radiography as a private service and to generate a profit from it. It is then one of the personal characteristics that drive an individual to practice independently.
- Knowledge and experience - Knowledge is defined as facts, information, and skill acquired through experience or education, or as the theoretical or practical understanding of a subject, while experience is defined as the skill or knowledge that you get by doing or experiencing something. It means that in the context of this study knowledge and experience refers to all that is learned by the radiographer while working and practising as an employed radiographer. The research then revealed some elements of knowledge

and experience that help equip the radiographer for what is to come when practising independently and they are as follows:

- Understanding private practice radiography - this refers to that knowledge that a radiographer acquires in private practice radiography/radiology that empowers them to be able to run their own private practice and be independent. The understanding of a radiographer is important in preparation for private practice because it enables them to handle the day to day challenges that come with running a private practice. Hence, there are many levels at which a radiographer has to acquire knowledge within the sphere of private practice. Examples are, administrative work (data capturing, examination coding, claiming and authorisation of examinations), equipment knowledge (types, functions, licensing and maintenance) departmental management (staff, money, security, bookkeeping, etc.) that will enable them to be private practice owners
- A clear sense of how a private practice works - Private practice is defined as the work of a professional practitioner who is working independently for themselves or/and their partners. This definition clearly puts into perspective the mindset a professional must have before going into private practice and these words “independently for themselves” ensure that the practitioner clearly understands that private practice works by providing a good quality service and ensuring that the income made keeps your practice sustainable. This study has revealed that through this clear understanding of how a private practice works the outcome then becomes the ability to deal with the challenges as and when they come in a private practice setup.
- Relationship management required in private practice – this refers to how one conducts and behaves around fellow professional, colleagues and patients, in other words, this refers to the quality of the output of the practice meaning patient care, quality of service, staff attitude and presentation of the department. These are vital in preserving a good image in the health community and creating good relations with fellow health professionals.

- Understanding the business side of private health (Business acumen) – this refers to the keenness and quickness in understanding and dealing with a business situation in a manner that is likely to lead to a good outcome. In the context of this study, this then becomes the output of the characteristics of the individual and the knowledge gained while working in private practice. Which then enables the individual to undertake independent practising using the following skills:
 - Positioning within the health system - this means that a private practice owner needs to position the practice in the health context in a space where there is a market for the kind of service he/she is giving. In doing so he/she positions the practice in the best place to receive the most number of referrals to keep the practice sustainable. It also relates to ensuring that when providing a service in an area one does not duplicate a service that is already available in that area. This uniqueness gives the practice a competitive edge within the health community.
 - Business management skills for health sector- refers to the business management qualities required in private practice and how they can be used to make the company more sustainable. This is then the culmination of all that has been said in this research because it is the ultimate output of all businesses and that is profitability and ultimately sustainability.

4.5 CONCLUSIONS

The main conclusions derived from this research can only be described by highlighting the outcomes of the information provided by the research participants and how it clearly identifies the private practice environment and the people involved in keeping it in existence (sustainable). The first part described the type of individual who is destined for private practice and that they should possess the entrepreneurial qualities that are required to make a success of a business. These qualities are a clear sense of practising independently, an entrepreneurial spirit and trend recognition.

The second part focused on the type of experience and knowledge that are needed to be prepared for private practice. These include an understanding of private practice radiography, a clear sense of how a private practice works and the ability to manage relationships that are required in private practice.

The final part discussed is the business acumen or the understanding of the business side of private health and how this knowledge can be used to manage a sustainable practice. It includes positioning within the health system and the business management skills needed for the health sector.

These themes are all interdependent, and one cannot exist without the other, but the end result paints a clear picture of what a private practice radiographer is and what qualities and knowledge they need in order to manage a sustainable private practice that will benefit future generations.

4.6 RECOMMENDATIONS

The recommendations are divided into two categories, Management in radiographic Training and Research into radiography management.

4.6.1 Management in radiographic training

The field of radiography has evolved, and so should the content within the radiography curriculum, especially management in radiography because it is much generalised and subjects that need to be dealt with in detail are covered in one page. Based on the outcomes of this research the researcher has the following recommendations regarding introducing management in radiographic training:

- The subject of private radiography should be dealt with in much more detail
- Management in radiography departments should deal with specifics that arise in x-ray departments e.g. equipment licensing, procurement and ordering of materials, suppliers of materials, consignment and non-consignment items, loan equipment, demo equipment, etcetera.
- Books and notes should be compiled and published dealing with private

practice radiography.

- Lecturers should be in touch with what's going on in the field of radiography especially private practice because it's always changing.
- Societies should have equal representation of both private and government radiographers to avoid old ideas being translated into the syllabus.

4.6.2 Research into radiography management

The outcomes of this research have led the researcher to the recognition of the need for the following research:

- The exploration of characteristics needed in order to be eligible for private practice radiography.
- The exploration of the medical aid related knowledge needed by private practice radiographers.
- The exploration of further education needed by radiographers in order to equip them for private practice.

4.7 LIMITATIONS OF THE STUDY

Some limitations have been identified and these were mainly caused by the fact that this subject has not been researched much leading to a limited literature review. This has limited triangulation ability, which in turn has an impact on the trustworthiness of the research.

- Limited literature on the subject – There were a few articles on private practice radiography online and due to this the researcher had to supplement that information with information from other professions in the health field.
- The absence of previous research on the subject – there was no research found on the subject of private practice radiography, and this affected the project negatively.
- Radiographers with failed private practices refused to be interviewed – these individuals did not want to be interviewed hence the research lacks information on how failed practices can be assisted.

- The absence of a budget (funding) – this affected the research project negatively as it took time for the researcher to raise funds.
- Lack of availability of private practice owners – this affected the research project negatively because the researcher had to wait long periods for the participants to be available.
- Distance from research supervisors – this affected the research project negatively as it is costly to travel from Gauteng to Port Elizabeth.
- The area to be covered to access respondents – this affected the research project negatively due to the cost of travelling between the two provinces.

4.8 SUMMARY OF THIS CHAPTER

The objectives of this research have been identified and the findings of the data collected and discussed. The conclusion of this research is that based on the knowledge provided by private practice radiographers in the Limpopo and Gauteng province the reader will have a clear understanding of the following:

- The type of individual that should practice independently.
- The knowledge required for a person to be able to run and sustain a private practice.
- The business acumen required in order to achieve profitability and ultimately sustainability.

It is the researcher's belief that the above information is sufficient to answer the research question which is: *How can radiographic practitioners be assisted to manage sustainable private practices?* The researcher further believes that the research objectives have been achieved.

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ANNEXURES

Annexure 1: FPGSC Research Approval letter



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Contact person: Ms M Afrikaner
1 September 2015

RE: OUTCOME OF PROPOSAL SUBMISSION
QUALIFICATION: MA (Health and Welfare Management)
FINAL RESEARCH/PROJECT PROPOSAL:

MANAGING A SUSTAINABLE PRIVATE RADIOGRAPHIC PRACTICE IN GAUTENG AND LIMPOPO PROVINCES

Please be advised that your final research project was approved by the Faculty Postgraduate Studies Committee (FPGSC) subject to the following amendments/recommendations being made to the satisfaction of your Supervisors:

COMMENTS/RECOMMENDATIONS

1. References (text)

"van" should be capitalised in "Van Rheed" on, for example page 6.

2. REC-H form

- Revise the rationale and methodology. Remove "see proposal" and provide a summary.

- Privacy to protect

Yes was indicated. Indicate how provisions will be made to protect the participants.

FPGSC grants ethics approval. FPGSC reference number: **H15-HEA-NUR-016**.

Please be informed that this is a summary of deliberations that you must discuss with your Supervisors.

Please forward a final electronic copy of your appendices, proposal and REC-H form to the FPGSC Secretariat.

We wish you well with the project.

Kind regards,

Marilyn Afrikaner
FPGSC Secretariat
Faculty of Health Sciences

Annexure 2: Participant consent form

NELSON MANDELA METROPOLITAN UNIVERSITY
INFORMATION AND INFORMED CONSENT FORM

IMPORTANT INFORMATION FOR RESEARCHERS APPLYING FOR ETHICS

APPROVAL:

You are not compelled to use this pro-forma. It is provided as a convenience to those applicants who do not already have an informed consent form. *Feel free to design your own form!*

Please delete any information not applicable to your project and complete/expand as deemed appropriate. The intention is that you make sure you have covered all the aspects of informed consent, as applicable to your work.

<u>RESEARCHER'S DETAILS</u>	
Title of the research project	
Reference number	
Principal investigator	
Address	
Postal Code	
Contact telephone number (private numbers not advisable)	

A. <u>DECLARATION BY OR ON BEHALF OF PARTICIPANT</u>		<u>Initial</u>
I, the participant and the undersigned	(full names)	
ID number		
<u>OR</u>		
I, in my capacity as	(parent or guardian)	
of the participant	(full names)	
ID number		
Address (of participant)		

A.1 HEREBY CONFIRM AS FOLLOWS:		Initial
I, the participant, was invited to participate in the above-mentioned research project		
that is being undertaken by	(name of researcher)	
from	(affiliation e.g. department/school/faculty)	
Of the Nelson Mandela Metropolitan University.		

THE FOLLOWING ASPECTS HAVE BEEN EXPLAINED TO ME, THE PARTICIPANT:			Initial	
2. 1	Aim:	The investigators are studying The information will be used to/for		
2. 2	Procedures:	I understand that		
2. 3	Risks:			
2. 4	Possible benefits:	As a result of my participation in this study		
2. 5	Confidentiality:	My identity will not be revealed in any discussion, description or scientific publications by the investigators.		
2. 6	Access to findings:	Any new information or benefit that develops during the course of the study will be shared as follows:		
2. 6	Voluntary participation / refusal / discontinuation:	My participation is voluntary	YES	NO
		My decision whether or not to participate will in no way affect my present or future care / employment / lifestyle	TRUE	FALSE

3. THE INFORMATION ABOVE WAS EXPLAINED TO ME/THE PARTICIPANT BY:		Initial							
(name of relevant person)									
in	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Afrikaans</td> <td style="width: 20px;"></td> <td style="text-align: center;">English</td> <td style="width: 20px;"></td> <td style="text-align: center;">Xhosa</td> <td style="width: 20px;"></td> <td style="text-align: center;">Other</td> </tr> </table>		Afrikaans		English		Xhosa		Other
Afrikaans			English		Xhosa		Other		
and I am in command of this language, or it was satisfactorily translated to me by									
(name of translator)									
I was given the opportunity to ask questions and all these questions were									

answered satisfactorily.	
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4.	No pressure was exerted on me to consent to participation and I understand that I may withdraw at any stage without penalisation.	
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4.	No pressure was exerted on me to consent to participation and I understand that I may withdraw at any stage without penalisation.	
----	---	--

4.	No pressure was exerted on me to consent to participation and I understand that I may withdraw at any stage without penalisation.	
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A.2 I HEREBY VOLUNTARILY CONSENT TO PARTICIPATE IN THE ABOVE-MENTIONED PROJECT:

Signed/confirmed at	on	20
Signature or right thumb print of participant	Signature of witness:	
	Full name of witness:	

B. STATEMENT BY OR ON BEHALF OF INVESTIGATOR(S)

I,	(name of interviewer)	declare that:								
1.	I have explained the information given in this document to	(name of patient/participant)								
	and / or his / her representative	(name of representative)								
2.	He / she was encouraged and given ample time to ask me any questions;									
3.	This conversation was conducted in	<table border="1"> <tr> <td>Afrikaans</td> <td></td> <td>English</td> <td></td> <td>Xhosa</td> <td></td> <td>Other</td> <td></td> </tr> </table>	Afrikaans		English		Xhosa		Other	
	Afrikaans		English		Xhosa		Other			
And no translator was used <u>OR</u> this conversation was translated into										
	(language)	by	(name of translator)							
4.	I have detached Section D and handed it to the participant	YES	NO							
Signed/confirmed at	on	20								
Signature of interviewer	Signature of witness:									
	Full name of witness:									

C. STATEMENT BY OR ON BEHALF OF INVESTIGATOR(S)	
1.	(name of interviewer) declare that:
2.	I have explained the information given in this document to (name of patient/participant)
	and / or his / her representative (name of representative)
2.	He / she was encouraged and given ample time to ask me any questions;
3.	This conversation was conducted in Afrikaans English Xhosa Other
	And no translator was used <u>OR</u> this conversation was translated into (language) by (name of translator)
4.	I have detached Section D and handed it to the participant YES NO
Signed/confirmed at _____ on _____ 20__	
Signature of interviewer	Signature of witness:
	Full name of witness:

D. DECLARATION BY TRANSLATOR (WHEN APPLICABLE)	
I,	(full names)
ID number	
Qualifications and/or	
Current employment	
confirm that I:	
1.	Translated the contents of this document from English into (language)
2.	Also translated questions posed by (name of participant) as well as the answers given by the investigator/representative;
3.	Conveyed a factually correct version of what was related to me.
Signed/confirmed at _____ on _____ 20__	
I hereby declare that all information acquired by me for the purposes of this study will be kept confidential.	
Signature of translator	Signature of witness:
	Full name of witness:

E. DECLARATION BY TRANSLATOR (WHEN APPLICABLE)	
I,	(full names)

ID number			
Qualifications and/or			
Current employment			
confirm that I:			
1.	Translated the contents of this document from English into	(language)	
2.	Also translated questions posed by	(name of participant)	as well as the answers given by the investigator/representative;
3.	Conveyed a factually correct version of what was related to me.		
Signed/confirmed at			
		on	20
I hereby declare that all information acquired by me for the purposes of this study will be kept confidential.			
Signature of translator		Signature of witness:	
		Full name of witness:	

Annexure 3: Participant Invitation letter

78 Bosch Street
Rustenburg
North West Province
0299

To whom it may concern

This letter serves to invite you as a private practicing radiographer to participate in my research project that seeks to explore and describe the management of a sustainable radiography private practice.

The research subject is MANAGING A SUSTAINABLE PRIVATE PRACTICE IN THE GAUTENG AND LIMPOPO province. The objectives of the study are to:

- Identify the skills needed to manage a radiographic private practice
- Determine what strategies are needed to develop the radiographers' skills to ensure a sustainable, successful private radiographic practice.
- Provide guidelines to support radiographers in private practice

Your participation will be much appreciated.

Yours sincerely
Chuma Siyongwana