EVALUATING A MASTERS PROGRAMME IN HEALTH INFORMATION MANAGEMENT

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ABSTRACT

Health Information Management (HIM) is an essential health administration component for the organising, coordinating and distribution of health related information, for the benefit of all its recipients. HIM professionals combine some medical and business disciplines to perform their duties. This research was aimed at evaluating the outcomes of an academic Master's programme in HIM, to assess whether it equiped Health Information Managers with the competences in multicultural communication, leadership and management, as well as whether it contributed theoretical knowledge about the composition of academic Masters' programmes, and their significance towards the development of competences in HIM. The evaluation was conducted through a qualitative and quantitative survey. This approach enables the researcher to adopt an observer's approach to the research exercise, and the participants/respondents are treated in a more equal manner. Essentially, this is done to limit the researcher's bias, as well as encourage equal treatment of the participants/respondents.

The researcher employed the Kirkpatrick Model of evaluation, a model that is commonly used to evaluate training and educational programmes. The findings of this research revealed that the participants/respondents considered the programme mostly satisfactory. However, the sub-Saharan participants/respondents considered the programme more relevant, as opposed to the German participant, and inferred that it enhanced professional competences.

Information-systems-related content was preferred the most, without any content being censured. However, the programme was regarded as inadequate in statistical analysis and epidemiology content, which are essential components of health data analysis and monitoring. Epidemiology is perceived as a valuable addition because the participants/ respondents consider it important in practice, as well as academic research. Additionally, the development of an undergraduate module was suggested, to develop HIM professional and relevant competences, including more technical aspects.

This research was limited to participants/respondents' insights; therefore, a future comprehensive study, comprising other stakeholders, excluding students, should be conducted to gain more in-depth and overall outcomes of the programme, as well as its impact in practice.

KEY WORDS

eHealth

Evaluation

Healthcare

Health Information Management

Kirkpatrick Model

Leadership

Management

Multi-cultural

Postgraduate studies

Survey

ABBREVIATIONS

CIPP – Context, Input, Process, Product Model

G – German

GDP – Gross Domestic Product

GTS – Graduate tracer studies

HI – Health Informatics

HIM – Health Information Management

HIT – Health Information Technology

HNU – Neu-Ulm University of Applied Sciences

ICT – Information and Communications Technology

IM – Information Management

IPO – Input, Process, Output, Outcome Model

IS – Information Systems

IT – Information Technology

K – Kenya

KeMU – Kenya Methodist University of Kenya

MHIM – Masters in Health Information Management

MI – Medical Informatics

MIS – Management of Information Systems

MUHAS – Muhimbili University of Health and Allied Sciences

PhD – Doctor of Philosophy

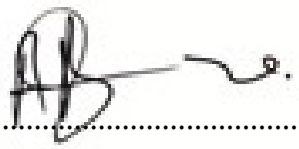
SA	–	South Africa
T	–	Tanzania
ToC	–	Theory of Change
TVS	–	Training Validation System
UWC	–	University of the Western Cape
WHO	–	World health Organisation

DECLARATION

I hereby declare that the thesis entitled "*Evaluating a Masters programme in Health Information Management*" is my own work. It has not been submitted, previously, for any degree or examination at any other university, and all the sources used, or quoted, have been indicated and acknowledged.

Arthur Bhekimpilo Chikware

Date: August 2019

Signed:  .....

DEDICATION

I would like to dedicate this thesis to my mother. She raised me to be a strong and independent person. May God bless her, forever.

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This work would not have been possible without my supervisors, Dr James Njenga and Prof José Frantz. Your guidance, support and astuteness, rendered towards this study, is forever appreciated.

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Above all, I would like to thank God for the opportunity and privilege He has granted me, to make it this far in life and academia.

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Kind regards

Arthur Chikware

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CHAPTER ONE

INTRODUCTION

1.1. Background

The use of information, as well as the volume thereof, has grown extensively over time, and is, arguably, the most fundamental resource for informed decision-making in most organisations (Nath, 2017). In order to understand information, and its importance, it is necessary to understand its constructs. The terms, information and data, tend to be used randomly, as if they are interchangeable; however, they differ in context (Morabito, 2013).

Data is considered unprocessed information that comprise raw facts, numbers or signals (Morabito, 2013). Data, in isolation, tends to lack meaning; however, meaning is achieved, when applied in a context, or setting (Cooper, 2016). The basic form of data is meaningless, until processed, consequently, becoming information (Bernstein, 2009). On the other hand, information is considered a construct of expressive facts, numbers, or signals, which are meaningful to people, or processed data that have contextual meanings (Morabito, 2013). Information description is more complicated in business, or organisational contexts, compared to the world's common use of the word (Adeoti-Adekeye, 1997). It is considered abstract ideas, or products, characteristic of informing documents, reports and other similar means (Adeoti-Adekeye, 1997). It is an important strategic resource in organisations that can be used to portray organisational image, formulation of knowledge and informing decision making, or actions (Morabito, 2013). It is an essential component of almost all organisations' activities, and failure to manage it could impact the vision, image, or operations, negatively (Morabito, 2013). In healthcare, information is important to inform health service contributors on health regression and progress of patients, as well as the populace at large (Sheikh, 2014). Overall, information is a resource, and an asset to organisations, and needs to be managed appropriately (Morabito, 2013).

Information Management [IM] is a systematic process of collecting, storing, organising, manipulating, using and disposing of information, to derive value therefrom (Cackett, Bond, & Gouk, 2013). It provides a means of enhancing value in the competences of organisations (Mithas, Ramasubbu, & Sambamurthy, 2011), which enables organisational effectiveness.

Society and the economy are reliant on information to function, and healthcare organisations are not exempt from depending on information for their operations; therefore, it is important to manage and process information at their disposal, to draw value therefrom (Kostagiolas, 2006). Information is an essential resource for any organisations' productivity, as well as the development of other resources (Adeoti-Adekeye, 1997), such as knowledge creation that supports instruction through the transformation of information (Bernstein, 2009).

Data and information conversion to usable, or a required form, is dependent on processing systems. Information systems [IS] provide methodical structures for the input of raw data that is processed to provide the required information as output (Adeoti-Adekeye, 1997). There is no specific definition for IS, while other definitions place more emphasis on information and communications technologies [ICT] (Boell & Cecez-Kecmanovic, 2015; Paul, 2010). However, an IS can be described as a collection of people, activities, procedures and technologies, used to process data and information (Paul, 2010). It is not solely dependent on ICT; instead ICT is part of the resources that work in conjunction with other relevant components, to process information (Boell & Cecez-Kecmanovic, 2015). ICT systems enable the solving of complex problems that cannot be comprehended through human intuition and intelligence (Adeoti-Adekeye, 1997). Information systems and management are essential, to derive value from data, for the benefit of individuals with interest therein.

As mentioned previously, the field of healthcare, like other industries, is dependent on information and needs effective information management (Kostagiolas, 2006). The administrative section responsible for IM in healthcare is identified as Health Information Management [HIM] (Makinde, Mami, Oweghoro, Oyediran, & Mullen, 2016). HIM comprises the coordinating, organizing and distribution of health related information for recipients, namely, patients, healthcare professionals, health institutions, government and organisations with interest therein (Bath, 2008). HIM professionals are individuals who combine management disciplines and clinical competences for healthcare data and information management, although they are not expected to be technical experts in both fields, necessarily (Zeng, Reynolds, & Sharp, 2009). They form part of the health administrative roles, at different levels, namely clerical or administrative, managerial, as well as executive levels in healthcare (Haddock, McLean, & Chapman, 2002). They are the custodians of healthcare information (Makinde et al., 2016), and are expected to manage health information for the reliability and convenience of healthcare service delivery (Zeng et

al., 2009). However, their training does not always include the technical aspects of information technology, such as programming/development and hardware/software maintenance (Zeng et al., 2009).

Some of the HIM training programmes include: Electronic Health/Medical Records [EHR/EMR]; database management; Health Informatics [HI] (Makinde et al., 2016); information protection and privacy; formulation of data and information policy and data mining and analytics (Bates et al., 2014). However, Zeng et al. (2009) state that the increased use of ICT applications in healthcare information management, necessitates that competences in ICT be added to the list of required HIM capabilities. Makinde et al. (2016) add that, funding in health systems, necessitates Monitoring and Evaluation [M&E] competences, for HIM professionals to gauge the value of the IM systems. In addition, there is a need for professionals to engage in developmental and learning activities, for career development, as well as to keep abreast of professional changes, which is essential for continuous service delivery improvements and personal development (Burrow, Mairs, Pusey, Bradshaw, & Keady, 2016).

This current study evaluated an academic programme that was aimed at developing HIM competences, namely, a postgraduate educational Masters programme in Health Information Management [MHIM]. One of the important aspects of academic programmes, is the imparting of knowledge for the personal, social and economic development of participating individuals (López-Yáñez, Yáñez-Márquez, Camacho-Nieto, Aldape-Pérez, & Argüelles-Cruz, 2015). Ultimately, a highly educated workforce is important to the economy, as it adds intellectual significance to the services and products being supplied (Moloi, Gravett, & Petersen, 2009).

There are numerous structured Masters' degree programmes across the world, for the professional development of healthcare professionals, designed to improve expertise in public health, health management and health education (Tekian & Harris, 2012). In this current study, the MHIM programme under evaluation is aimed at improving competences in health information management, intercultural communications, leadership and management in health. This programme meets some professional boards' expectations that professional biased, structured Masters' programmes, incorporate leadership, management and communication content, as primary components of the programmes (Drennan, 2012). The

programme under evaluation, is designed to counter modern day complexities, which include diversity, migrations and pandemics, among others that are emerging (Wiek, Withycombe, & Redman, 2011; Brodnik & Houser, 2009). In addition, the aim of the Masters academic programmes is to encourage, or nurture professionals, who are capable of doing academic research and publishing (Tekian & Harris, 2012), which, ultimately, leads to more knowledge generation.

1.2. Opportunities for a Masters' programme in Health Information Management

The MHIM programme is a joint academic curriculum, conducted across three universities, per enrolment from four different countries. The University of the Western Cape (UWC) in South Africa, Neu-Ulm University of Applied Sciences (HNU) in Germany, Muhimbili University of Health and Allied Sciences (MUHAS) in Tanzania, and the Kenya Methodist University of Kenya, with support from the German Academic Exchange Service (DAAD) have been involved in the programme. The institutions are from countries that are diverse in both socioeconomic statuses and cultures.

According to Frenk et al. (2010), there is increased interdependence in major healthcare resources across the world, and a demand for highly skilled professionals. "Global movements of people, pathogens, technologies, financing, information, and knowledge underlie the international transfer of health risks and opportunities and flows across national borders are accelerating" (Frenk et al., 2010, p. 1926). Countries are encouraged to engage in collaborations, to confront the challenges associated with this intermingling and dispersal (Mason, Lipworth, & Kerridge, 2016). However, these collaborations need to be mutually beneficial, and leveraged on the core capabilities, or competences of countries, irrespective of their economic statuses (Kerry, Ndug'u, Walensky, Kayanja, & Bangsberg, 2011).

Lenz, Peleg, and Reichert (2012) assert that there are various challenges in healthcare, with some arising from the increased focus on personalised healthcare approaches, more specialised medical practices, and increasing costs in engaging chronic ailments, which require different approaches to healthcare. However, there are limited healthcare resources, which are more accessible to beneficiaries of well-equipped private healthcare facilities; therefore, the demand for strategies to improve the distribution of basic healthcare, especially to under-resourced areas across the world, is escalating (Kim, Farmer, & Porter, 2013).

Evidently, the countries involved in the MHIM programme collaboration, apply different approaches to health information management, due to their varying socioeconomic statuses, cultures and administration methods. Sub-Saharan countries tend to be encumbered with insufficient economic, human and infrastructural resources, while fighting considerably more pandemics, compared to developed countries (Nilseng et al., 2014). In contrast, Germany has a high aging population that challenges healthcare, with patients requiring long hospital stays, long-term care, multiple ailments, and considerable long-term disability issues (Destatis, 2016). In addition, healthcare in Germany experiences a shortage in healthcare staff, to meet the healthcare demands of an aging population, often attracting migrant professionals (Cooke & Bartram, 2015). Bates et al. (2014) highlight that part of the HIM focus is to provide quality information to aid the reduction of health costs, for better care and the improved health of the populace. This underlines the potential of HIM to improve services in under-resourced environments, as it is the subset of health systems, responsible for the coordination and management of data in healthcare, as highlighted by Zeng et al. (2009).

1.3. Programme evaluation

Academic programmes exist to effect change for those who participate in them, namely, funders, organisers, institutions of higher learning and other participants (Frye & Hemmer, 2012). There are various expected outcomes from these programmes; however, the development of skills and knowledge is paramount for the participating individuals (Allan, 1996). Evaluations are essential to determine the outcomes of programmes, to provide feedback to the relevant stakeholders, and to improve the programmes (Rajeev, Madan, & Jayarajan, 2009). In feedback from evaluations and assessments, both intentional and unintentional outcomes should be considered, to provide insights that support continuous improvement of the programmes (Frye & Hemmer, 2012).

Evaluations of programmes originate from the business field, where efficient utilisation of resources is at the core of organisations (Tasca, Ensslin, Ensslin, & Alves, 2010). Brooks (2003) advocates strongly for programme assessments and states that their outcomes could aid the quality improvement of services and products. Business organisations usually conduct evaluations through their customers; therefore, students, as beneficiaries of academic

programmes, are essential in programme evaluations, even though there are differing views on their statuses, as customers of learning institutions (Brooks, 2003).

1.4. Problem statement

Health information management [HIM] professionals need to be leaders in healthcare settings, who use information to assist in decreasing healthcare costs, as well as improving healthcare and the health of the population (Bates et al., 2014). The inadequacies of personnel, who possess HIM specific training, has led to the employment of other professional practitioners, to fulfil the role of health information managers, namely, statisticians, nurses, or computer scientists, who lack full HIM composite competences (Makinde et al., 2016). HIM professionals' competences are multifaceted, and include some clinical knowledge and administration competences (Callen, 2001). This highlights the need for specialised training, to meet the multi-disciplined nature of the profession. Therefore, in this current study, the researcher discusses the compatibility problem of academic programmes, in the development of professional competences.

In this current study, the researcher goal was to evaluate the outcomes of a Masters in the HIM programme, aimed at developing the participants' leadership, management and multicultural communications competences, to determine its relevance in the four countries, where it was being offered. As previously mentioned, the existence and importance of academic programmes is to effect change in, or the development of, the participants (Frye & Hemmer, 2012). Change is realized when the participants of the programmes project knowledge and competences, as a result of the programme (Saks & Burke, 2012). Therefore, the evaluation in this current study was conducted, to comprehend the outcomes of the MHIM programme and contribute new literature in relation to HIM, which is compounded by limited HIM related programmes and research.

Evaluations are important to ascertain the relevance and impact of programmes, thereby determining whether they should be abandoned, improved or continued (Saks & Burke, 2012). Evaluations should be a main feature of academic programmes, considering their constant need to evolve, in order to meet the continuously changing environment, including social, economic and educational (Frye & Hemmer, 2012). They also contribute insights that are important for decision making, feedback and marketing (Saks & Burke, 2012), for the

benefit of the respective stakeholders, namely, education institutions, graduates, prospective students, funders, employers and the general population, according to their academic programme needs (Nusche, 2008). In this regard, this current research provides a summation of the programme's outcomes for interested stakeholders, who, consequently, could extrapolate their own conclusions about the MHIM programme.

1.5. Research questions

In order to address the problem statement, the following research questions were considered in this current research:

1. Is the Masters' in HIM a relevant programme, to meet the training needs of participants from different socioeconomic environments?

2. Does the Masters' in HIM enhance leadership, management, and multicultural competences in health information management?

3. What are the essential qualities of academic programmes in HIM?

1.6. Aim of the study

The aim of this current study was to explore and describe the experiences of participants in the Masters in Health Information Management programme, to determine whether the programme was relevant to the development of HIM competences.

1.7. Objectives of the study

The objectives of this current research were:

1. To assess the programme's relevance towards the needs of the participants in health information management;

2. To explore and describe the programme's developed competences in leadership, and management, as well as the multicultural competences for healthcare information management; and

3. To explore and describe the most important qualities of a Masters' academic programme in HIM.

1.8. Methodological Framework

1.8.1. Evaluation Model

In this current research, the researcher proposed the Kirkpatrick Four Level Model to support the study. The model was initiated in 1959, over a sequence of articles by the pioneer, Donald Kirkpatrick, for training evaluations (Kirkpatrick, 1959). The model comprises four components of analysis, namely, reaction, learning, behaviour and results, which are also identified as levels one to four, respectively (Rajeev et al., 2009). The model's first two levels assess the learning, or training related experiences, while the third and fourth assess the outcomes, and end results of education, or training programmes (Praslova, 2010).

Kirkpatrick (1979) highlights that the future continuity of training programmes lies in incorporating evaluations for constant improvement. Kirkpatrick's model was selected for this current study, because it is adaptable and flexible in its assessment of training outcomes (Moldovan, 2016). The model's strength lies in how it clearly describes the programmes' impact, beyond learning outcomes (Frye & Hemmer, 2012). In addition, it considers the participants' learning or training experiences, which are essential to the improvement of the teaching, training or education aspects of the programmes (Rajeev et al., 2009). Ultimately, its popularity is evident in its use in various training instances, including education programmes, and workplace training programmes (Frye & Hemmer, 2012).

1.8.2. Methodology

There are various approaches to qualitative methods, namely descriptive, narrative, grounded theory, phenomenology and ethnography (Sandelowski, 2000). However, the aims of qualitative approaches are similar in nature, in that they seek to find identical results through different methods (Vaismoradi, Turunen, & Bondas, 2013). The researcher in this current study employed a descriptive and exploratory design, because of the uniqueness of the programme, and the limited research on the topic. A descriptive design is essential to address new social incidents, and enable less complicated explanations (Thomlison, 2011). It tends to adopt a more observational approach, inclined towards the presentation of facts, with limited theoretical view bias

(Sandelowski, 2000), which was important in this current study, to express the participants' deliberations on the impact of the programme, with limited restrictions.

The objectives of exploratory research are to present new ideas on a subject, which helps to create new propositions (Jaeger & Halliday, 1998). Exploratory research has no rigid methodology adherence; therefore, it is flexible and practical in application, enabling broad and thorough research of the study (Davis, 2006). This was essential to the current study, in which the researcher was attempting to understand the MHIM programme's relevance to the development of the participants' HIM competences.

This current study adopted a survey approach for the evaluation study. Surveys are a common approach used in research, to comprehend the results of a project, or undertaking, at a specific stage (Kelley, Clark, Brown, & Sitzia, 2003). A survey is considered an approach, rather than a method (Kelley et al., 2003). Evaluation studies apply common social sciences research methods, qualitative and quantitative, because they do not have specific dedicated methods (Kelly, 2012), hence they are conducted through any applicable approach. Research data was collected through a survey tool, which comprised both qualitative and quantitative questions.

Qualitative research aims to acquire information of occurrences as described, experienced and perceived by the participants, to enable the scholar to understand, analyse, and draw rational explanations on the issue (Gorman, Clayton, Shep, & Clayton, 2005). Qualitative data was essential to gather the participants' different opinions, in more detail, which is an attribute of qualitative research (Hoepfl, 1997). Quantitative research is based on examining numeric data, to address the research questions (Muijs, 2004). It was essential in this current study to assess the components of the study, with limited response options that could be explained through simple numeric means (Walliman, 2011). The programme is in its infancy, and therefore, has a small population size. A qualitative bias was adopted to gain deep insights from the participants' perspectives (Hoepfl, 1997).

A total population sampling approach, which is variant of purposive sampling, was adopted in this current study, implying that the entire group of individuals, affected by the phenomena, are approached to particpate in the research (Etikan, Musa, &

Alkassim, 2016). The population size and total number of subjects, who participated in the programme, was limited and identifiable. The population size of this current study comprised thirty-two participants in the HIM programme; however, only twelve participants availed themselves for this current research study.

1.9. Study Layout

This current research study adopted the following presentation layout:

- **Chapter 1 – Introduction**

  In the introduction chapter, the researcher provides the background of the research concept. A brief induction of what the study entailed, problem statement, as well as the aims and objectives of the study, are the major components of this section.

- **Chapter 2 – Literature review**

  The researcher unpacks the key components of the study in this chapter, based on the available literature. Firstly, health information management is explained, to provide the context, which highlights the importance of health information managers. The key components of health information are probed, with a focus on the attributes of the programme, being evaluated. Subsequently, the researcher explorees academic programmes, as means of training. Finally, the evaluation and assessment of training programmes, theories, models and frameworks of evaluation are discussed.

- **Chapter 3 – Research Methodology**

  In this chapter, the researcher provides a background to the Masters in Health Information Management (MHIM), as well as a discussion of the research settings, in terms of universities and countries. The applied model is unpacked, in detail, as well asits benefits. The methodology approach, applied in conducting this research, are presented, as well as the reasons for their use, as opposed to other available approaches and methods. The researcher discusses the population/sampling, ethic considerations, as well as the reliability and validity/credibility of the study.

- **Chapter 4 – Results**

  In this chapter, the researcher presents the demographics of the subjects and highlights the research findings, as per the data collected, without incorporating empirical evidence.

- **Chapter 5 – Discussion of the results**

  The researcher discusses of research findings, relevance and meaning, in relation to empirical research.

- **Chapter 6 – Conclusion and recommendations**

  In this closing chapter, the researcher provides a brief overview of the findings, as well as limitations of the study, and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

In this chapter, the focus is on empirical research, regarding Health Information Management, academic education and training, and the evaluation of the outcomes of academic training, in relation to the Masters in HIM programme. Through the literature discussed, the researcher aims to validate the importance of conducting this research. Additionally, the different views of other researchers are highlighted, to provide insights on the world of research that could inform future research.

2.2. Health Information Management

There is no one distinctive definition for the term, information (Madden, 2000). It could be considered under various constructs, which include its existence through the compilation of data, composition to form knowledge, communication process, and as a resource (Madden, 2000). However, the most common definition is that it is a construct of processed data (Ackoff, 1999; Ball, Weaver, & Kiel, 2004).

Data can be desrcibed as characters that make up an object, or occurrence (Ackoff, 1999). These characters could be unorganised facts, numerals, as well as signals of objects and events, which they supposedly portray (Morabito, 2013). They are usually meaningless in raw format; however, when applied in context, they gain meaning (Cooper, 2016). The difference between information and data is not entirely physical, but functional (Ackoff, 1999). Morabito (2013) states that data and information are part of a spectrum, commencing from singular facts, figures and/or signals, relating to humans, actions, activities and objects, which, through purposeful organisation, become significant concepts. However, information comprises facts, relevance and interpretation of data from a setting, or background (Morabito, 2013).

Information, at knowledge level, is considered instructive, which enables the answering of inquiries (Ackoff, 1999). Knowledge is a product of information and logic, which includes

beliefs and experiences (Morabito, 2013). Knowledge can be contextual, as it could be qualified by aspects that include beliefs and experiences, which are relative to individuals and organisations (Bernstein, 2009). It is usually split into two categories, namely, tacit and explicit (Cooper, 2016). Tacit knowledge tends to be acquired through experience, not tangible, and not easily communicable, or documented; while explicit knowledge can be documented and easily shared (Morabito, 2013). Information can be a strategic resource that could be used to generate knowledge, as well as inform decision-making (Morabito, 2013). Therefore, it needs to be managed for the wellbeing of people and organisations with vested interests (Adeoti-Adekeye, 1997).

Information management is the systematic processes of collecting, storing, organising, manipulation, usage and disposing of information, to derive value from it, in order to enable organisational effectiveness (Choo et al., 2006; Cackett et al., 2013). Therefore, Health Information Management comprises activities that are responsible for the organization and aggregating of healthcare data and information resources, to ensure the availability of the best information, to improve decision-making in healthcare (Zeng et al., 2009). HIM professionals are the overseers of health information and data, and therefore, an essential part of administration in healthcare (Zeng et al., 2009).

The profession does not operate in isolation, usually, but coexists with Health Information Technology [HIT] (Zeng et al., 2009), Health Informatics [HI], and Medical Informatics [MI] (Bath, 2008). Zeng et al. (2009), as well as Bath (2008), view these roles as complimentary, with overlaps in some instances. ICT expansion in health information systems is accredited with the merging, or overlapping, of the roles, because they enable information sharing beyond the confines of institutional departments or units, up to national level (Bath, 2008). Other areas of common interest among the roles, are research and public policy, with regards to information management, because of the evolving delivery of healthcare, and the growing IT systems use in health (Dorsey, Clements, Garrie, Houser, & Berner, 2015). The overlapping of roles is common in various HIM related professions that require multifaceted skills, which include “joint educator or trainer, project manager, work flow analyst for clinical systems, privacy and security officer, EHR program manager, and data management and analytics professional” (Zeng et al., 2009, p. 2).

HIT specialists roles and responsibilities cover hardware, software, intellectual property, infrastructure and architecture, access and associated licencing for healthcare use, as well as support activities, including procurement and maintenance (Zeng et al., 2009). There is no generally recognised definition of HI; however, it is focused on ICT use in healthcare, to improve information management for the wellbeing of the populace (Bath, 2008). In principle, Bath's (2008) HI description is similar to the description of HIT by Zeng et al. (2009), which suggests different terminology for similar concepts. MI has no distinct definition, but it relates to the use of IT in clinical practices, specifically, tasks that include decision support, as well as the prediction of clinical outcomes among other clinically inclined practises (Bath, 2008).

Health information systems (HIS) comprise the convergence of people, procedures, technology, data, and information, while HIM professionals require specialised competences to coordinate all the resources in health information administration (Zeng et al., 2009). Continuous technology and administration advancements in healthcare have led to the HIM profession's significant evolution and portfolio growth, since its inception (Bates et al., 2014). Due to ICT advances in health, HIM professionals are not confined to records rooms any longer, but have expanded to the management of information, as well as other information infused roles in health, as well. They are required to use computer technology to coordinate information, in order to link healthcare facilities, public health establishments, research institutions and intended beneficiaries of health information, to improve information quality, accessibility and dependability (Houser, Manger, Price, & Hart-Hester, 2009). Their competences should combine clinical understanding, including epidemiology, with administrative competences, which include computer skills, management and leadership competences (Callen, 2001).

2.3. HIM and Information and Communications Technology (ICT)

The application of ICT in healthcare is associated with the term, eHealth (Oh, Rizo, Enkin, & Jadad, 2005). EHealth embodies governance, education and technologies that include ICT systems applied in health for service delivery (Weeks, 2012). In most definitions of eHealth, technology is viewed as an enabling component, to enhance productivity of human resources in healthcare delivery (Oh et al., 2005). EHealth technologies include, eEducation, mHealth, Telemedicine, ePrescriptions, and other similar technologies that are usually cited with an 'e-

', or electronic prefix (Weeks, 2012). EHealth advances, in their adaptability and flexibilities, have the potential to improve healthcare services; however, they also present challenges (Sheaff, 1995; Nilseng et al., 2014).

The use of ICT in health information systems has shown potential to be an effective tool towards improving healthcare, especially in low income countries (Braa, Heywood, & Sahay, 2012). In spite of infrastructure challenges in developing economies, mobile technology coverage and adoption is promising, which provides a basis for mHealth application and practices, as an alternative (Nilseng et al., 2014). MHealth based systems have been piloted in underserved communities, in drugs distribution (Nilseng et al., 2014), healthcare training (O'Donovan, Bersin, & O'Donovan, 2015), and rehabilitation (Beratarrechea, Willner, Ciapponi, & Rubinstein, 2014). In addition, other subdivisions, including Telemedicine and eEducation have shown promise in healthcare service delivery and training, by remote control, to improve healthcare accessibility and competences (Weeks, 2012), with positive outcomes. However, ICT applications and implementations in healthcare have not always yielded the expected outcomes, due various factors that include, limited collaborations and mutual appreciation of professional variances, socioeconomics differences, ill-equipped professionals and fragile managerial leaderships (Frenk et al., 2010).

Patel and Kannampallil (2014) note that, although ICT is expected to mitigate some human errors, they also provide a different set of challenges, which include trained and capable users to operate the systems, systems and actual processes alignment, and the lack of mental support, a quality inherent to humans. Braa et al. (2012) cites the lack of strong leadership, complexity of healthcare organisations, systems compatibility and standardisation, as well as socioeconomic issues, as some of the challenges that have affected most implementations, negatively. However, there was also the issue of inadequate infrastructure, especially in developing countries, which included, electricity and ICT infrastructure that are essential for ICT driven systems (Nilseng et al., 2014). Some of the challenges were caused by the implementation of inappropriate models and evaluations that, eventually, interrupted health and technology developments in the long-term (Van Gemert-Pijnen, Wynchank, Covvey, & Ossebaard, 2012).

Health Information Management has also subjected healthcare to Big Data trends. Big Data can be explained as large and multifaceted data volumes that cannot be manipulated easily

with common statistical applications (Snijders, Matzat, & Reips, 2012). Besides its massive volumes and assortment, its accumulation and transmission can be extremely rapid (Ventola, 2018). Additionally, similar to any ICT applications and implementations, it is dependent on human contributions, which include vision and insights (McAfee & Brynjolfsson, 2012). The Big Data phenomena is attributed to growth in computing power, computer usage and accessibility, which has led to numerous streams of data creation, formal, as well as informal (Bollier, 2010). The increasing use of computing technologies in healthcare, has led to the growth of health information that has created potential for Big Data in healthcare (Chen & Lee, 2013).

There are various areas of healthcare, namely, patient care, pharmacology and health related biology that can benefit from Big Data analytics (Chen & Lee, 2013; Wing & Langelier, 2004). Health information can benefit from the storage and analytic applications, which could assist in records management and the prediction of health risks, to improve healthcare (Cano, Tenyi, Vela, Miralles, & Roca, 2017). The field of biomedicine has already experienced vast improvements in statistical analysis and data interpretation timeframes that, previously, took much longer to yield results (Chen & Lee, 2013). These are some of instances, in which Big Data has the potential to impact healthcare, or has already initiated positive contributions towards it.

The success and effectiveness of eHealth is dependent on the involvement of human resources, as well as their abilities, organisational infrastructure and availability of resources (Ammenwerth, Graber, Hermann, Burkle, & Konig, 2003). This highlights the importance of competent personnel with capabilities to meet operational demands and technology for effective healthcare service delivery (Yusofa, Kuljis, Papazafeiropoulou, & Stergioulas, 2008). Health information managers need to improve their ICT competences to meet the demands of technology evolution, as well as enhance data integrity and information processed through ICT systems (Ambage, 1995). Considering the growing convergence between HIM roles and ICT, there is a need for strong leadership, to improve administrative and operational processes in healthcare, for effective ICT infrastructure (Zeng et al., 2009).

2.4. Healthcare Management and Leadership

Administrative activities are part of healthcare organisations that are important for the availability and quality of healthcare services (Haddock et al., 2002). They are also part of the clinical professions' daily activities, with some health professionals eventually becoming fully fledged managers, or administrators, in health organisations (Bode & Maerker, 2014). This is not a new issue, as, initially, hospital administrators were known as superintendents, comprised mainly of clinical staff, who had transitioned into administration, although they had limited, or no prior administrative training (Haddock et al., 2002). However, the growing administrative aspects, with commercial connotations that include accounting, financial management and legislative issues in healthcare, has precipitated an imminent need for more specialised competences (Haddock et al., 2002; Bode & Maerker, 2014). This has necessitated specialised programmes to equip, or train, health administrators with competences in health, social and commercial sciences comprehension (Haddock et al., 2002).

There is perceived scepticism among some clinicians, towards non-clinical administrative occupations in the healthcare sector, which is partly attributed to their business management origins, with a focus on targets, performance and revenue driven achievements (Ezziane, Maruthappu, Gawn, Thompson, Athanasiou, & Warren, 2012). Some of the challenges in the application of administrative management concepts in healthcare are that management methods are not conceived in healthcare settings, but mainly derived from business sciences for healthcare management purposes (Al-Sawai, 2013). However, the integration of business sciences in healthcare was meant to administer intricate operational processes in healthcare organisations that require multifaceted capabilities, adept at coordinating diverse resources, technology and staff supervision, to provide organisational direction, towards achieving set objectives for the wellbeing of people (Buchinder & Thompson, 2010). The field is still growing, and research is not yet conclusive on the overall impact of business conceived administrative and management practices in health, especially in hospitals; however, there are studies, which suggest that administrative managers from clinical backgrounds are more capable of influencing fellow peers, compared to business-oriented managers (Lega, Prenestini, & Spurgeon, 2013).

Management and leadership are usually perceived as similar, but they differ to a certain degree (Stoller, 2013). Management is the action of controlling resources, in form of economic, human and other relevant resources, to achieve predetermined objectives of the organisation (Bradley, Taylor, & Cuellar, 2015). Leadership is considered an individual's behavioural approach in coordinating people's actions towards set goals (Al-Sawai, 2013; Bush, 2008). Leadership has strong emphasis on inspiring and engaging people through relationships and commitment to continuous learning, while management has strong emphasis on coordination of technical aspects (Stoller, 2013). Some of the management aspects include "human resources management, financial management, cost accounting, data collection and analysis, strategic planning, marketing, and the various maintenance functions of the organizations" (Haddock et al., 2002, p. 6). However, leadership leverages on management aspects, with emphasis on soft skills that include, team building, communication and negotiation skills (Stoller, 2013). Management and leadership are distinct concepts, but, in practice, they are correlated with an individual, or group, capable of possessing both qualities (Bradley et al., 2015). The World Health Organisation (WHO), however, denotes that management sciences are fundamental for the improvement of service delivery in healthcare, and are essential to improve the administrative aspects of healthcare (Bradley et al., 2015).

Effective management is considered to be behind good performances of organisations and industries (Bradley et al., 2015). It is essential for the leveraging of technology, human, financial and other resources in most organisational structures and levels, to advance health organisations towards sustainable goals (Bradley et al., 2015). With growing efforts to improve efficiency and healthcare quality, reducing costs, as well as attempts to strengthen research around healthcare, data and information demand, has rapidly increased to become an important resource of organisations (Brodnik & Houser, 2009). Therefore, there is a fundamental need for healthcare managers to be people with relevant competences that are appropriate to address healthcare administration challenges (Lega et al., 2013).

Leadership can be classified as a behavioural sciences attribute (Al-Sawai, 2013), which is essential for those in management to possess (VanVactor, 2012). The emphasis of leadership is on fostering engagement, interdependence and collaboration, as well as acknowledging people's different qualities, towards a common goal (VanVactor, 2012). Some of the major attributes of leadership are collaboration, decision-making, conflict management and team orientation (Al-Sawai, 2013; Ezziane et al., 2012). These attributes are essential for the

development of a team, or teams, which works, or work together towards achieving shared goals (Ezziane et al., 2012). Leaders, or managers, should be able to distinguish between management and leadership attributes, to be effective (VanVactor, 2012).

Previously, leadership in healthcare was clinical-biased, with limited management aspects of governance and economic sciences attributes (Bode & Maerker, 2014). Stoller (2013, p. 12) highlights that an effective leader's qualities should include "technical competences (e.g., finance, accounting, legislative issues in medicine, regulatory environment), team-building skills, communication and negotiation skills, and a commitment to lifelong learning". Numerous successful corporate organisations have been known to invest resources on staff development, towards leadership competences, and of late, health institutions, in recognition of the value of leadership, are following suit (Stoller, 2013). A leadership development programme, aimed at emerging managers/leaders should incorporate mentoring, didactic training and experience-focused development, in a beneficial environment (Stoller, 2013). However, regardless of where leadership techniques are acquired, they should be adaptable to any administrative settings, including healthcare, to augment management skills (Al-Sawai, 2013).

In addition, it is necessary to observe leadership in conjunction with cultural contexts (Offerman & Hellman, 1997). Jogulu (2010) asserts that leadership qualities is predisposed to cultural influence, but acknowledges schools of thought, which dispute this notion, and subject it to universal teachings, as well as those, who associate it with natural human traits. However, Al-Sawai (2013) states that leadership is essential in the exploitation of diversity, when directing management practices towards the attainment of organisational objectives.

2.5. Global interdependency and Multi-cultural management

One critical aspect of reducing health disparities, is improving the cultural competence of health care providers, staff, administrators and clinical practices (O'Connell, Korner, Rickles, & Sias, 2007). Culture, generally, is defined as the people's social construct of shared traditions, languages, values, conduct and philosophies (Arbour, Kaspar, & Teall, 2015). Therefore, multicultural competences are defined as appropriate mannerisms, approaches and accompanying policies, applied in practice by professionals, for the management of cross-culture variances in the workplace (Arbour et al., 2015). However, there is limited research

that explores multi-cultural management; instead, the focus is on diversity management, which envelopes cultural diversity, as well as gender and disability diversities in the workplace (Madera, 2013). Diversity commands varied definitions, and, in some contexts, it is observed on a cultural basis, while in others, with connotations to commercial effectiveness, social trust and collective wellbeing (Faist, 2010). Diversity management refers to the harnessing of human and organisational resources, to derive value from people's distinctiveness (Trenerry & Paradies, 2012).

There is a growing rationale that effective management of diversity is the foundation of productivity growth in establishments, in the global community (Sultana, Rashid, Mohiuddin, & Mazumder, 2013). Trenerry and Paradies (2012) state that mismanagement of diversity is the bedrock of staff conflicts, inefficiency and low morale in the workplace. Diversity management acknowledges that people are unique, with different needs and expectations, which is important for the encouragement of non-discriminatory, and tolerance behaviour in healthcare (Razum & Spallek, 2014). However, despite the high attention dedicated to *cultural competences* and *diversity management*, there are still strong traits of methodical racism, or segregation, in offices and social settings (Trenerry & Paradies, 2012). Some of the cultural conflicts and tension stem from people's perceptions of others, on the basis of their own cultures (Almutairi, Dahinten, & Rodney, 2015). However, it is argued that diverse groups tend to be effective in solving complex challenges, compared to homogenous teams, and they regularly reflect the communities they serve (Madera, 2013).

Globalisation has caused demographic changes in most countries, which has led to governments' introduction of policies that accommodate equities over diversity and culture (Sultana et al., 2013). Globalisation, is a term used to describe the assimilation of economies and societies, on a worldwide scale (Irani & Noruzi, 2011). Its impact has reformed views around social, economic and political issues across the world, from local, or country focus, to international contexts, with the realisation that no country operates in isolation (Moloi et al., 2009). According to Mason, Lipworth, and Kerridge (2016, p. 48), "Globalisation does not, in reality, lead to uniformity, but rather to reconfigurations of labor and human resources, technological capabilities, capital and finances, information and information technology, as well as ideologies and epistemologies." It has improved access to knowledge and information across the world, regardless of economic status (Moloi et al., 2009). Therefore, organisations that are inclined to embrace diversity and different ethnicities, are setup to realize

globalisation benefits, which accompany the open market of knowledge, labour markets and other associated resources (Sultana et al., 2013; Trenerry & Paradies, 2012).

In academia, there are various means of equipping students with multicultural competences, which include, imbedding competences into programmes, thereby, globalising or internationalising institutions (Deardorff, 2011). Programmes need to incorporate teaching means that enhance awareness and improve cultural competences in the class (Arbour et al., 2015). It should not be a *once-off* class or lesson, but rather, a component imbedded across the whole programme (Deardorff, 2011). According to Arbour et al. (2015, 436), "Development of cultural competence begins with the basic understanding that culture is beyond a reference to ethnicity, race, religion, or creed", and it is a continuous competence development process (Deardorff, 2011).

2.6. Programme Assessment/Evaluation

Evaluation is a process of determining the worth of an entity, based on the available data (Frye & Hemmer, 2012). Therefore, educational evaluation is judging the value of an academic programme, based on the information at hand (Frye & Hemmer, 2012). Evaluations are useful in the exploration of dynamic social factors, and tend to be descriptive in nature (Walliman, 2011). They are usually conducted to determine the impact of policies, to address resource allocations, for accountability purposes, to gauge service delivery, as well as assist in decision-making, with regards to progams and interventions (Tilley, 2006).

There are various methods of conducting programme evaluations, for example, Graduate Tracers Studies [GTS], and Theory of Change [ToC]. Graduate Tracer Studies [GTS] are commonly used to assess the experiences and progression of higher education graduate students from academic settings, to work life, or employment (Badiru & Wahome, 2016). They are usually conducted through survey research of alumni and students of the programme under evaluation, or employers (Schomburg, 2003). The goal is to determine, from the participants, the impact and value of education and training programmes in institutions of higher learning (Schomburg, 2003), in order to improve the programmes, as well as the institutions' value-delivery of the programmes (Badiru & Wahome, 2016). GTS data usually cover the professional outcomes of the participants' competences, acquired from the programmes, review the education conditions under which they studied, as well as the

employers' perceptions of the graduates' competences employed, depending on the evaluation focus (Schomburg, 2003).

The advantage of GTS is that they provide streamlined guidelines, to evaluate the impact of graduate programmes, with specific objectives for precise results, if appropriate rigor is applied (Badiru & Wahome, 2016). However, they are susceptible to some survey challenges, for example, low participants' response rates (Egesah, Wahome, Langat, & Wishitemi, 2014). The results are most credible with a high percentage response from partcipants, and are reflective of most, or all participants' observations (Egesah et al., 2014). There is also no well-defined theory-based methodology for GTS, only suggested guidelines (Schomburg, 2003; Badiru & Wahome, 2016).

The ToC methods are adopted from behavioural sciences, where they are used to instigate change in individuals, groups of people and organisations (Zand & Sorensen, 1975). They could be defined as assessments of the connections among activities, outcomes and contexts, in a methodological and progressive approach (Connell & Kubisch, 1998). Dyson and Todd (2010) define the ToC as a methodical approach to evaluation, which assumes that predetermined activities require specific applicable actions, to acquire projected results. They are commonly associated with other theories that include programme, action and implementation theories, logic models, result chains and outcome pathways (Mayne, 2015). In addition, they comprise numerous approaches to interventions development, management and appraisals, or assessments (Mayne, 2015). Their approach to evaluation constitutes methodical and cumulative research of connections concerning the activities, results and backgrounds of initiatives (Dyson & Todd, 2010). ToC concepts help to articulate the aims, objectives, or ideas, set to achieve a specific goal, so that they can be measurable (Harries, Hodgson, & Noble, 2014). According to Mayne (2015, p. 20), there is general consesus on the expectations from Theories of Change, but "there is a proliferation of different interpretations of just what in practice a theory of change entails, how to develop one, and how to depict it."

The main advantage of ToC is that they are suited for complex interventions with uncertainty (Dyson & Todd, 2010). They are useful in multifaceted progammes, with numerous possible, undetermined outcomes and variables that are difficult to control (Dyson & Todd, 2010). They require identification of all activities, and are evaluated, progressively, from the

beginning, which provides consistent feedback that enables changes to be made throughout the programme cycle (Mayne, 2015). They do not assume a linear approach to evaluation, but consider all relevant facets of the programme (Dyson & Todd, 2010). They employ various theories, in an attempt to meet different evaluations needs (Mayne, 2015). However, since ToC do not consist of a singular theory, and do not comprise prescribed packages, they are labour intensive in development for programme relevance (Dyson & Todd, 2010).

Evaluations in higher education provide information about programmes, which could be used to comprehend their impact and value for the interested stakeholders, namely, institutions, funders, governments, participants, employers and people, at large (Schomburg, 2003; Praslova, 2010). Educational institutions engage in evaluations for various reasons, both internal and external (Frye & Hemmer, 2012). Evaluations provide institutions with information about the impact of their programmes, which helps them to keep the programmes relevant and applicable to demand, including students and employers (Schomburg, 2003). The relevance of programmes to professional requirements is one of the key factors shared by the students and employers, and the solutions for alignment could be pursued through feedback from assessments, or evaluations (Badiru & Wahome, 2016).

Academic institutions are also liable to funders, namely, governments, parents and independent organisations, or donors, who are interested in the outcomes of their funding initiatives (Paradeise & Thoenig, 2013). Funding initiatives tend to be subjective to accountability, where individuals with vested interests have expectations that include student completions on time, service delivery, social contributions and programme sustainability (Badiru & Wahome, 2016).

Additionally, the higher education fraternity is not exempted from internal competition for students, as clients of the organisations, who need to be satisfied with quality programmes (Brooks, 2003). Competition has been further enhanced by improved access to international education, which has caused a market-driven environment that empowers the student with more university options to choose from (Arambewelaa & Hall, 2013). Feedback from evaluations could assist institutions in their quest to improve the quality of their programmes, as well as their services (Badiru & Wahome, 2016).

The growing interest in evaluations has led to outcomes assessments in educational establishments, and new terms have gained prominence, including, *student learning outcomes*, *competency and student learning* outcomes assessments (Anderson, Moore, Anaya, & Bird, 2005). Learning outcomes are considered knowledge, or capabilities, acquired by participants, as a result of education, but a clearer definition is determined by set objectives, which are multidimensional (Allan, 1996). Therefore, the objectives need to be clear, to provide context to learning outcomes, under evaluation (Allan, 1996). Outcomes assessments are not limited to basic results, but is rather a purposeful attempt to determine specific results, based on prior set and recommended criteria (Anderson et al., 2005). They are not limited to academic learning components only, but include experience gained in participating in higher education that include employment prospects, social status and opportunities for further studies, which should not be mistaken for acquired skills and competences attained through the learning experience (Nusche, 2008). Outcomes are differentiated from competences, because they are aligned with students' results, as consequences of engaging in the programmes, while competences encompass practical applications of what was learnt (Anderson et al., 2005).

Assessments of student learning outcomes is one method, among other ways, of evaluating the impact of educational establishments, and their effectiveness (Anderson et al., 2005). There are two paradigms in assessment formulation that help to distinguish the assessment context; formative and summative (Ewell, 2007). Formative assessments are considered ongoing evaluations that tend to influence ensuing actions during the progression of the programmes (Nusche, 2008). At individual level, they inform on the progress, development, knowledge and capabilities of the students, and at programme level, the feedback helps to continuously improve the programmes (Nusche, 2008). Summative assessments tend to focus on performance evaluation for records, or decision-making, and are mainly for accountability purposes (Nusche, 2008). They are used to determine the value, or effectiveness, of programmes (Eseryel, 2002), and could be conducted at various levels of the programmes (Nusche, 2008). At individual level, they are used to distinguish competent from non-competent students, and at programme, or organisational level, for reporting purposes, as part of accountability to a higher authority (Nusche, 2008).

Some academics have defined learning assessments as procedural gathering and analysing of educational programme data, for the continuous development and learning of students (Kezar,

2013). However, there is no clear definition of learning outcomes assessment and the definition tends to be based on the focus of the reviewer (Anderson et al., 2005). When the assessment is focused on the academic aspect, there is not sufficient evidence to suggest which specific data suffice; therefore, it should rather focus on data from collective sources, which include classrooms, departments and institutions, to enhance the teaching and learning aspects, and meet the stakeholders' endorsement (Kezar, 2013).

Training is a human resource investment, and the ability to transfer learnt competences to practice, is of fundamental importance to stakeholders with invested interests (Saks & Burke, 2012). The transfer of training has to be taken seriously, because of the investments involved, to realise behaviour change, improved competences, and other desirable outcomes (Saks & Burke, 2012). However, it has been demonstrated that only partially learnt competences are transferred to practice, or to application (Saks & Burke, 2012). Therefore, evaluations are essential, to identify the gaps and opportunities, through informed resolutions, to enhance the transfer of learnt competences to practice (Wankhede & Gujarathi, 2012).

2.7. Assessment/Evaluation Theory and Frameworks

There are various frameworks for evaluation and assessments that provide methods to assist in ascertaining the value of programmes (Dahiya & Jha, 2011). Older models tend to adopt a linear focus to the evaluation of programmes, mainly outcomes oriented, limited to those specific evaluation objectives, and are still functional solely for that purpose (Frye & Hemmer, 2012). Newer evaluation models are usually more dynamic in approach, to counter the multifaceted nature of programmes, as well as the contributing factors that impact them (Frye & Hemmer, 2012). It is advisable that the selection of a model should be determined by what information is required from the programme under assessment, so that data collected would be accurately collected and processed (Wankhede & Gujarathi, 2012).

Evaluation models are categorised according to their approach to assessment, and the most common models for training are goal-based and systems-based approaches (Eseryel, 2002). Goal-based evaluations mainly investigate whether the programmes under assessment meet their objectives (Wankhede & Gujarathi, 2012). The systems-based approach to evaluation have a more holistic approach, and requires the contexts and circumstances under which the assessments are conducted; however, they tend to have less depth (Dahiya & Jha, 2011).

Some of the most prominent evaluation models are the Kirkpatrick Four Levels Model, a goal-based model, as well as the Context, Input, Process, Product (CIPP) Model, Training Validation System (TVS) approach, and the Input, Process, Output, Outcome (IPO) Model, which are systems-based (Dahiya & Jha, 2011). A brief overview of these models is contained in Table 2.1.

Table 2.1: Models of Evaluation

Kirkpatrick (1959)	CIPP Model (1987)	IPO Model (1990)	TVS Model (1994)
1. Reaction: to gather data on the participants reactions at the end of a training programme.	1. Context: obtaining information about the situation, to decide on the educational needs, and to establish the programme objectives.	1. Input: evaluation of system performance indicators like trainee qualifications, availability of materials, appropriateness of training, etc.	1. Situation: collecting pre-training data to ascertain the current levels of performance within the organization and define a desirable level of future performance.
2. Learning: to assess whether the learning objectives for the programme were met.	2. Input: identifying educational strategies, most likely to achieve the desired result.	2. Process: embraces planning, design, development, and delivery of training programmes.	2. Intervention: identifying the reason for the gap between the present, and the desirable performance, to establish whether training is the solution to the problem.
3. Behaviour: to assess whether job performance changes, as a result of the training.	3. Process: assessing the implementation of the educational programme.	3. Output: gathering data resulting from the training interventions.	3. Impact: evaluating the difference between the pre- and post-training data.
4. Results: to assess costs vs. benefits of training programmes, namely, organizational impact, in terms of reduced costs, improved quality of work, increased quantity of work, etc.	4. Product: gathering information, regarding the results of the educational intervention, to interpret its worth and merit.	4. Outcomes: longer-term results associated with improvement in the corporation's bottom line - its profitability, competitiveness, etc.	4. Value: measuring differences in quality, productivity, service, or sales, all of which can be expressed in terms of dollars

(Eseryel, 2002)

2.7.1. The Kirkpatrick Four Level Model

In this current research, the researcher used the Kirkpatrick Four Level Model to evaluate the MHIM programme (Frye & Hemmer 2012). This model has become one of the most used evaluation models in organisations' training (Wu, Hu, Gu, & Lim, 2016). Kirkpatrick (1979) states that the future continuity of training programmes lie in the incorporation of evaluations for constant improvement. This model provides an easy, identifiable and systematic process for the evaluation of learning outcomes in workplaces (Yardley & Dornan, 2012). The model comprises four components of analysis, namely, *reaction*, *learning*, *behaviour* and *results* (Praslova, 2010). The model's first two levels assess the education/training related factors, while the third and fourth levels assess the outcomes of education, or training.

Level one of the model is *reaction*, which assesses the participants' perceptions of the intervention programme (Praslova, 2010). Basically, it assesses the feelings of the participants towards the programme (Kirkpatrick, 1979). This level tends to cover the participants' opinions on presentation, organisational arrangement and methods, incorporated in the delivery of learning experience, or service (Yardley & Dornan, 2012). The level does not measure any form of learning, but rather, the perceptions of the participants (Kirkpatrick, 1979). Some critics of the model state that there is a weak link between reaction level and the other three levels, and is mostly the least relevant level (Praslova, 2010). However, the importance of the level is to determine the impact of the training programme on the participants, without engaging the learning experience (Rajeev et al., 2009). In this current study, the participants had to reflect on what they deemed relevant and less relevant to their professional development, as well as their general satisfaction of the programme. Therefore, the level was essential to estimate the participants' overall perception of the programme for professional and personal development.

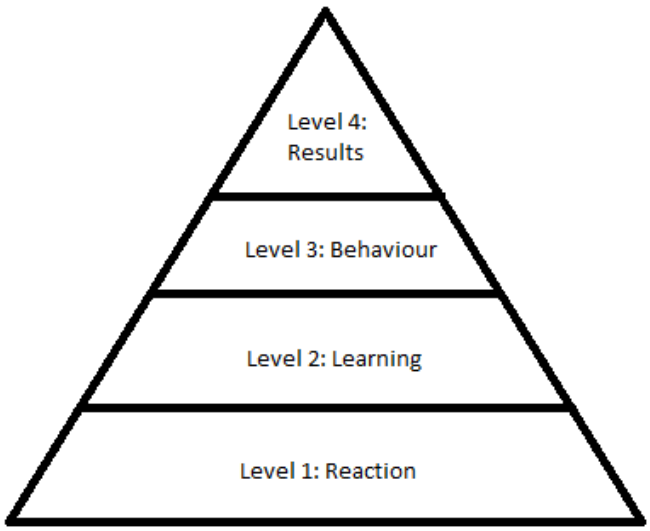

Figure 2.1: Kirkpatrick Model of Evaluation (Adedokun-Shittu & Shittu, 2013)

The second level is *learning*, which assesses knowledge retention by the participants, or to determine what the participants acquired from the training (Praslova, 2010). It engages the changes in attitude and the acquisition of skills, or knowledge, influenced by the learning process (Yardley & Dornan, 2012). However, the *learning* level does not assess the transfer of acquired theory to practical work application (Kirkpatrick,

1979). In this current study, it covers knowledge gained, since it is an evaluation of an academic programme, with limited focus on practical skills. The participants stated what they found meaningful in the programme, which aided in the development of their competences, relevant to their work.

The third level is *behaviour*, which assesses the application of knowledge acquired during training in practical work (Praslova, 2010). In this current study, *behaviour* is assessed as *on the job behaviour*, which covers the participants' experiences, or expected changes, post-participation in the programme. The evaluation of this level is considerably difficult, and usually requires pre- and post-training assessments, for more holistic evaluations (Kirkpatrick, 1979). Since this current study was conducted post-participation, it considered the participants' perceived development, rewards, promotions, and other evident progressions made, as a result of development through the programme.

Lastly, the fourth level is *results*, which gauges the outcomes of behavioural change (Praslova, 2010). Post-training results are best measured against desired outcomes, subject to pre-training set objectives, for example, improved cost reduction, or staff morale, and customer satisfaction (Kirkpatrick, 1979). Experienced changes and potential changes were assessed in this current study, to accommodate both delayed and immediate evaluation tools, used in this study. The participants were expected to influence their organisations with the knowledge gained from the programme. Therefore, the results were essential, to determine whether any meaningful outcomes were derived from the programme.

The model's reputation in evaluating training programmes in organisations led to its adoption in educational programme evaluations (Wu et al., 2016). Wu et al. (2016) state that it is considerably more dynamic, compared to some of the models, commonly used in higher education. Praslova (2010) highlights that limited rigor in most educational evaluation tools, led to the adoption of this model. Its applicability in both educational and workplace environments was significant for this current study. The academic Masters in HIM programme admissions requirements considered the professional background of the participants, which highlighted potential skills, or competence development, in information health management. In human capital, qualifications are

one of the key components, and an individual who holds them, is of value, if they can apply the knowledge rendered by their qualifications (Blundell et al., 1999). The Kirkpatrick model's applicability in the outcomes evaluation of workplace training and academic settings, makes it relevant for this current study, which assessed whether the outcomes of the programme matched the participants' needs.

Various publications have either reviewed, or applied, the model on their studies and expressed their judgements. Moldovan (2016) states that the Kirkpatrick model offers simplicity and a flexible approach to the assessment of training outcomes. This is highlighted by Praslova (2010), who states that it provides an understandable systematic approach through templates and categories, which provide context for assessments. Rajeev et al. (2009) suggests that the Kirkpatrick model is a goal-based approach to evaluation, and is the most influential model for training evaluations, either as it is, or with adaptations. In addition, the Kirkpatrick model is suitable for resource-constrained conditions, and less complicated in application (Frantz et al., 2015). Frantz et al. (2015), Wu et al. (2016), Frey and Hemmer (2012), as well as Rajeev et al. (2009) adopted, or supported the model use in an academic setting, and demonstrated its compatibility in the evaluation of educational programmes. However, regardless of its practicality in academic evaluation, it has shortcomings and critics.

The critics of the model highlight that it is an outcomes catalogue, instead of a framework, because its components lack experimental foundation and constructing concepts (Tamkin, Yarnall, & Kerrin, 2002). This current study is fundamentally focused on the outcomes of the programme, and does not deal with these concepts; therefore, this criticism does not affect these concepts. The other criticism is that there are limited relationships between all the levels, especially reaction and performance (Rajeev et al., 2009). The model is not conceptually hierarchical, despite its visual presentation structure, but is setup to deliver the necessary outcomes (Yardley & Dornan, 2012). Additionally, there is the expectation that learning and behaviour are supposed to be interrelated, which does not consider that the workplace environments do not necessarily provide a suitable environment for the application of what was learnt (Praslova, 2010). Regardless of all criticism, it has not deterred adopters and users of the model from its use (Tamkin et al., 2002).

This current study used a survey tool, designed, developed and recommended by the organisation founded by Kirkpatrick (Kirkpatrick Partners, 2009). The organisation provides evaluation consultancy services, based on the works and findings of the founder. The tool consists of two questionnaires, which assess either *delayed*, or *immediate,* evaluation. The *delayed* evaluation focuses on assessments that happen after the participants were able to apply what they had learnt; while the *immediate* assessment is the evaluation immediately after training. The questionnaires comprise both qualitative and quantitative questions. Regardless of the structure of the data collection procedure, the study, relatively, used a qualitative approach and analysis. Evaluations employ generic research propositions, but not completely in their rigid composition, because they are set to investigate in specific scopes of projects, as required (Neuman, 2007).

2.7.2. Context, Input, Process, Product (CIPP)

The Context, Input, Process, Product [CIPP] Model was initially designed to support the improvement of training programmes, rather than the proof of outcomes (Frye & Hemmer, 2012), on the basis that evaluations were essential for the improvement of the performance, or functionality of programmes (Topno, 2012). It is a proactive evaluation method that could provide continuous opportune information to improve decision-making throughout the programme cycle (Stufflebeam, 1971). Additionally, it is considered a systems-based approach of evaluation (Dahiya & Jha, 2011).

The model comprises four assessment components, namely, *context, input, process* and *product* evaluation (Wankhede & Gujarathi, 2012). The evaluation components are distinct, and can be used, either independently, or together, for a complete assessment, based on the required feedback (Johnson & Dick, 2012). The model's first three components are formative, with a major focus on improvement;, while the last component is summative (Frye & Hemmer, 2012).

Context evaluation explores the strengths and weaknesses of the entire training system, to assist device improvement strategies, for all levels of the system (Stufflebeam, 1971). The *input* evaluation determines strategies that could be selected to achieve the set objectives, regarding strength and weaknesses (Stufflebeam, 1971), in recognition of the skills, resources and strategies on hand (Wankhede & Gujarathi, 2012). The *process*

evaluation stage assesses the strength and weaknesses of the selected strategies, to ascertain their suitability for the programme under evaluation (Stufflebeam, 1971). It is an ongoing monitoring process that assesses potential success, or failure of the implemented strategies (Topno, 2012). Finally, the *product* evaluation is to determine whether the intended results were achieved, and depending on the outcomes, the way forward; whether to continue, amend or abandon the changed element (Stufflebeam, 1971). In addition, it assesses intentional and accidental outcomes of applied solutions (Topno, 2012).

The strength of the model is its comprehensive approach to evaluations, because the components have non-linear relationships, which makes it a dynamic evaluation model (Frye & Hemmer, 2012). The evaluation components are complimentary, which enables the assessment of beneficial, but easy to omit, aspects of programmes (Frye & Hemmer, 2012). The model's main criticism is that it is abstract, and, practically, difficult to apply (Passmore & Velez, 2012). It also lacks detailed guidelines on its application process, evaluation tools, as well as clarity on people's positions and responsibilities in the evaluation exercise (Dahiya & Jha, 2011)

2.7.3. Input, Process, Output, Outcome Model [IPO]

The *Input, Process, Output, Outcome* [IPO] Model, by Bushnell (1990, cited in Passmore & Velez, 2012), explains evaluation as a recurring process, which starts by determining inputs, assumed influential for the success of the training programme (Passmore & Velez, 2012). The *input* process assesses the required resources, including the trainers' experience and the learners' aptitudes (Wankhede & Gujarathi, 2012), training venue, equipment and curricula (Passmore & Velez, 2012). The *process* evaluation assesses the activities for training delivery, including the outline and delivery conduct of the training programme (Rehmat, Aaltio, Agha, & Khan, 2015).

The last two elements of evaluation is the *output*, which is concerned with immediate results and outcomes, and distinguishes long-term results (Passmore & Velez, 2012), and *outcome*. The *output* considers participants' development, while the *outcome* engages benefits, realised at organisational level (Passmore & Velez, 2012). Typical outputs include the participants' productivity, skills and knowledge, as a result of training (Wankhede & Gujarathi, 2012), and the *outcomes* assess the organisation's

improvement, regarding service delivery, competitiveness and profitability, through the efforts of the participants, after training (Rehmat et al., 2015). The IPO Model is mainly criticised for its limitations in information, pertaining to factors that influence results, and lacks clarity on where programmes fail, because of the lack of impact (Passmore & Velez, 2012).

2.7.4. Training Validation System [TVS]

The Training Validation System [TVS], by Fitz-enz (1994, cited in Dahiya & Jha, 2011), is based on the approach to evaluation (Dahiya & Jha, 2011). It consists of four steps, namely: Step 1: Situation analysis; Step 2: Intervention; Step 3: Impact; and Step 4: Value (Wankhede & Gujarathi, 2012). The first step is the *situation analysis*, which is considered a pre-training assessment to determine the required competences at the training (Eseryel, 2002). It requires thorough investigations to determine the required outcomes, before training commences, and is mainly focused on work matters, rather than actual training (Wankhede & Gujarathi, 2012).

The second step is the *intervention*, which distinguishes whether there are variances in the actual and required performance, to determine whether the training is an appropriate intervention, to improve performance, to the expected levels (Eseryel, 2002). It is also the level where an appropriate training approach is determined and designed (Wankhede & Gujarathi, 2012). The third step is *impact*, which assesses factors that influence performance (Wankhede & Gujarathi, 2012). It involves the assessment of before and after training data, to determine whether there was any change (Eseryel, 2002).

The fourth and last step is the *value*, which is used to determine the outcomes, including changes in the form of service, quality and productivity (Eseryel, 2002). Changes in performance are generally represented in monetary value (Wankhede & Gujarathi, 2012). It is mainly criticised for its basic approach to evaluation, which lacks depth, and does not account for other stakeholders' impact, which is a criticism levelled at most of systems-based models (Eseryel, 2002).

2.8. Postgraduate Education

Masters programmes are postgraduate qualifications that precede Doctoral degree (PhD) qualifications, which are conducted through either full research, or coursework, offered by institutions of higher learning, or universities (Drennan, 2012). In most countries, they are a highly rated degree programmes, because they are deemed professional qualifications, which improve competences for better employment opportunities, as well as for the acquisition of knowledge and scientific research capabilities (Ginevičius & Ginevičienė, 2009). However, they are not merely professional qualifications, but bearers of the qualifications can venture into research, teaching applied sciences and analytics careers (Ginevičius & Ginevičienė, 2009).

Postgraduate qualifications are alleged to improve knowledge, skills development, professional self-assurance (Perry, Green, & Harrison, 2011), leadership development and participants' reasoning skills (Massimi et al., 2016). These attributes closely mirror the makings of quality academic programmes that, understandably, stimulate elementary competences in pluralistic and critical thinking, research competences, communication skills, data management and other related capabilities, according to Wiek et al. (2011). Consequently, there is a demand from stakeholders, for quality programmes, from the populace, which include students, graduates, prospective students, taxpayers, donors, government, accreditation boards, as well as the generally interested populace (Nusche, 2008). In addition, the quality of academic programmes is realised in its adaptability to universal responsiveness, to develop globally adept students (Moloi et al., 2009). Academic institutions need to develop academic programmes that influence a mind-set shift, knowledge generating, and develop competences in awareness of globalisation (Moloi et al., 2009).

The impact of globalisation on education is not only limited to the confines of physical structures and curricula, but includes the development of research aspects, from a one-dimensional approach to multi-disciplinary (Blumenfield, 2012). Research has affiliations to governments, non-governmental organisations, corporate organisations or industry, local, global, as well as the general population at large, in a bid for a practical impact (Blumenfield, 2012). Globalisation necessitates a worldwide focus to improving health, rather than a localised and individualistic approach (Bradley et al., 2015); therefore, university collaborations across countries have increased, to offer academic programmes, aimed at

influencing global health (Kerry et al., 2011). In addition, there are educational partnerships between institutions in developed and developing countries, to enable the mutual exchange of beneficial resources and knowledge, for the engagement of common objectives (Kerry et al., 2011).

Academic programmes are designed to effect change, and stakeholders, namely, participants, facilitators, administrators, or any other individuals with vested interests, engage in them with expectations (Frye & Hemmer, 2012). These expectations necessitate the need to assess the outcomes of these programmes, to determine whether they meet the intended objectives, and whether the participants acquire the skills, expertise, or knowledge, they anticipate to gain, by participating in them (Rajeev et al., 2009).

2.9. Conclusion

The chapter discussed literature in regards to the programme's components under evaluation, evaluation models and the impact of academic programmes. The key development areas of the programme, which are ICT, leadership and management and multicultural competences were discussed and their importance in health information management. Then various evaluation models, included the model applied in the study, were discussed and their strengths and weaknesses were noted. Finally the importance and value of postgraduate studies was discussed.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

In this chapter, the researcher engages with the processes and measures, employed in the study, to obtain the results.The researcher provides a brief background to the Masters in Health Information Management (MHIM), as well as a discussion of the research settings, in terms of universities and countries. The applied model is unpacked, as well as how it benefits the current research. The approaches and methods, used in this current study, are presented, as well as the reasons for their use, compared to other available approaches and methods. In addition, the researcher discusses the population and sample, as well as the reliability and validity/credibility of the study, concluding this chapter with the ethic considerations.

3.2. Background to the Masters in Health Information Management (MHIM)

The MHIM is a Master's academic programme offered as a part-time course, in three blocks, for a duration of up to six weeks, with each institution hosting a block. The programme consists of eight modules that could be categorised into information systems management, management and leadership, and research in healthcare management (University of the Western Cape [UWC], 2015). The modules are: Health Systems; Health Data Management; Healthcare Information Systems; Information Systems Planning and Implementation; Management and Leadership in Health Organizations; Intercultural Management and Communication; Health Research; and Master's Thesis. All the modules in the programme are compulsory (UWC, 2015).

The programme is offered in partnership with three institutions, partly funded by German Academic Exchange Service [DAAD]. It was initiated in 2014, as a collaboration between the University of the Western Cape [UWC] in South Africa, The Neu-Ulm University of Applied Sciences [HNU] in Germany, and Kenya Methodist University [KeMU] in Kenya. For the second intake in 2016, UWC and HNU were retained, but KeMU was replaced by Muhimbili University of Health and Allied Sciences [MUHAS] in Tanzania (UWC, 2015).

3.3. Research Settings

Four universities were involved in this current research. UWC was established in 1960, at its current location in the City of Cape Town, Western Cape Province of South Africa (University of the Western Cape [UWC], 2013). UWC offers a wide range of academic programmes in the fields of Arts/Humanities, Health Sciences, Business Sciences, Natural Sciences and Education, at undergraduate and postgraduate levels. The MHIM programme is offered by the Information Systems Department, under the Faculty of Economics and Management Sciences, in an inter-university partnership with the School of Public Health, under the Faculty of Community of Health Sciences (UWC, 2015). The institute has been involved since the programme's introduction in 2014.

The German partner institution is HNU, which was established in 1994, and is located at Neu-Ulm (Neu-Ulm University of Applied Sciences [HNU], 2017). The institution specialises in Information Management, Business Studies and Health Management Studies at undergraduate level, with some programmes at postgraduate level (HNU, 2017). The institution is considered an international university, with partnerships in academia on various continents, as well as business organisations and non-profit-making organisations (HNU, 2017). HNU has been part of the collaboration since its introduction, with 2014 and 2016 admissions.

The Kenyan partner institute is KeMU. It is a privately owned Christian academic institute that had its first admissions in 1997 (Kenya Methodist University [KeMU], 2017). It consists of three campuses, located in Mombasa, Nairobi, and the main campus in Meru (KeMU, 2017). The programme was offered under the School of Medicine and Health Sciences. The institute was involved in the partnership when it was introduced in 2014; however, it was replaced by MUHAS in 2016.

The programme partner institute in Tanzania is MUHAS. The institution was founded in 1963, in Dar es Salaam (Muhimbili University of Health and Allied Sciences [MUHAS], 2017). The institution specialises in Biomedical Studies, Medical and other health related programmes at postgraduate and undergraduate levels (MUHAS, 2017). The MHIM programme is offered under the School of Public Health and Social Sciences at the Muhimbili

Campus in Dar es Salaam. MUHAS was not involved in 2014, when the programme was introduced; however, it replaced KeMU in 2016, for the second cohort.

3.3.1. South Africa

South Africa is regarded as a middle-income country (Egger & Ollier, 2007). The country's health systems endure a relatively high burden of disease, with the prevalence of HIV/AIDS, the main concern (Mayosi & Benatar, 2014), as an estimated 19% of the population lives with HIV/AIDS infection (Statistics South Africa [Stats SA], 2018). In addition, high migration activities are prevalent, as a result of citizens moving to provinces and cities with better fiscal wealth prospects, as well as international migrants, because of financial constraints, or being displaced by political conflicts/war (Vearey, Modisenyane, & Hunter-Adams, 2017). Amid these challenges, there are high disparities in economic distribution. It is estimated that 53% of South Africans have access to affordable and satisfactory quality healthcare, despite government's attempt to readdress inequalities, which resulted from the apartheid period (Burger & Christian, 2018).

As previously noted, the wealth of a nation is reliant on the health of the potential productive population, and South Africa's healthcare suffers gross maldistribution, with the poor at the receiving end of poor services (Mayosi & Benatar, 2014). South African healthcare has considerably poor health outcomes, contrary to the investment ploughed into healthcare (Cline & Luiz, 2013), which is attributed to poor leadership and management of healthcare resources (Mayosi, Lawn, Van Niekerk, Bradshaw, Abdool Karim, & Coovadia, 2012). Health information technologies could help alleviate some of the challenges that include, access to healthcare, resources distribution and health personnel, which are the main challenges faced by most developing economies (Cline & Luiz, 2013).

Some of the competences to be derived from the MHIM, could equip the human resources to meet the challenges in the South African healthcare setting. Practically, the programme is aimed at empowering health personnel, to fully exploit considerable healthcare investments for the improvement of service delivery in healthcare (UWC, 2015). Mayosi and Benatar (2014) assert that advancements, leadership development,

and sustainable strategic plans implementation, are fundamental to transform the ailing public services, to efficient and productive services.

3.3.2. Germany

Germany is a highly industrialized Western European country, which is renowned for its technological accomplishments (British Broadcasting Corporation [BBC], 2016). The country's health system provides considerably affordable and accessible services, because of extensive funding of healthcare (Organisation for Economic Co-operation and Development [OECD]/European Observatory on Health Systems & Policies, 2017). However, changes in German health organisations and cultures, initiated by technology advancements, medical innovations and social factors, have affected management roles in healthcare, creating an emergent need for redressing (Bode & Maerker, 2014).

Germany has a high population of aged people, as an estimated 25% of the population are over 60 years of age (Destatis, 2016). A high aging population necessitates different strategies for healthcare information management (Lenz et al., 2012). The main challenges are that aged people require longer hospital stays, suffer from multiple ailments simultaneously, and are more prone to chronic conditions, compared to younger people (Destatis, 2016). The German healthcare sector is also partly dependent on migrant workforce, which presents cultural diversity complexities in organisations (Cooke & Bartram, 2015).

The aim of the HIM programme is to develop leadership, management and multicultural communications competences. It could benefit the German healthcare system, by coordinating health promotion, as well as ailments prevention information, to the general population for respective ailments (Pieper et al., 2015). In addition, the multicultural communications aspects of the programme could be crucial in the assimilation of immigrant health professionals (Cooke & Bartram, 2015).

3.3.3. Tanzania

Tanzania, like most developing economies, has severe disparities in health distribution, where the poorer people fare much worse than the privileged, unlike developed economies (Howe et al., 2012). The country is plagued by HIV/AIDS, malaria, as well as other poverty-related conditions (World Health Organization [WHO], 2015), with the

poor people bearing the worst effects. In addition, most healthcare workers flock to urban areas, thereby creating maldistribution of skills, with rural areas being drained of much needed competences and resources (Shemdoe et al., 2016).

The major challenge in developing economies is providing timely, low cost and efficient health services in underprivileged areas (Marchant et al., 2014). The availability of timely and relevant information is one of the core resources that enables effective decision-making, needed to help alleviate some of the healthcare challenges in the country (Marchant et al., 2014). Information systems could assist the improvement of healthcare in that regard; however, while the government of Tanzania acknowledges the potential, financing, ICT infrastructure and human resources skills are still lacking (WHO, 2015). Therefore, the HIM programme could aid in developing skills, to alleviate some of these challenges in Tanzania.

3.3.4. Kenya

In 2014, Kenya earned the status of middle-income country (Gathigah, 2014). However, the new status did not infer the eradication of poverty, considering that 4 out of 10 Kenyans were still living in poverty (Gathigah, 2014). The health information systems are considerable poor, plagued by weak infrastructure, poor management, and poor ICT adoption (Gatero, 2011). Additionally, there is the reported discrimination of non-natives and cultural backgrounds plaguing the countries healthcare centres (Arnold, Theede, & Gagnon, 2014), besides the fact that Kenya is part of United Nations pledge to protect refugees and asylum seekers, who seek sanctuary in the country (Arnold et al., 2014). Furthermore, the country's healthcare suffers from inadequate and maldistribution of human resources, with rural areas being the most affected (The Netherlands, Ministry of Foreign Affairs, 2016).

Some of these shortcomings have been associated with poverty (Awiti, 2014). However, Rwanda, a less developed country, compared to Kenya, performs much better in some healthcare indicators, despite Kenya's higher investments into healthcare (Awiti, 2014). This could be an indication of maladministration, whereas leadership and management development, as well as training in healthcare, could be fundamental to the improvement of healthcare delivery, especially in underprivileged areas (Seims et al., 2012). The MHIM programme core features in intercultural management, leadership

and ICT management in health could fulfil some of the needs of the Kenyan healthcare administration.

3.4. Research Methodology

3.4.1. Research Approach

In this current study, the researcher adopted a survey approach for the evaluation study. A survey method enables the investigator to adopt a more observational approach to research (Walliman, 2011). It enables the assessment of multiple variables, provides a consistent approach to data collection, and allows more uniform treatment of the respondents (Kelley et al., 2003). This was essential for this current study, because the participants/respondents were located in different countries, which limited physical accessibility; therefore, the need for an approach that had the potential of accessing all the respondents, in a relatively equal manner, as, in a survey study, they respond to the same questions (Neuman, 2007).

Using this approach, the researcher could collect relatively large quantities of data, within a short period of time, and at a low cost, compared to other approaches (Kelley et al., 2003); however, there is potential for a very low response from the respondents (Walliman, 2011). The researcher approached the accessible participants/respondents and corresponded with them via emails, to recruit as many as possible, with several follow-ups to physically inaccessible participants/respondents. This approach produced more practical, or realistic, observations, with minimal investigator's influence (Kelley et al., 2003), which was valuable for the researcher to gather realistic outcomes that were essential for effective decision-making.

Surveys are common in social sciences, to study people and their activities (Walliman, 2011). The method is generally used to investigate common characteristics in a group of people, rather than social engagements, or communications (Jansen, 2010), which was essential to this current evaluation, as it investigated the relevance of an academic programme, set to develop the participants/respondents' competences, with the outcomes of the programme, a subject of interest. However, it is not considered a methodology, but rather a research strategy, used in conjunction with research methods, which include evaluation, descriptive and analytic methods (Kelley et al., 2003).

Evaluations are usually conducted quantitatively, because of the focus on outcomes in assessments (Kelly, 2012). However, quantitative methods approaches have practical limitations, because of some social bearings that are not easily quantifiable; therefore the need for a qualitative approach application in evaluations (Kelly, 2012). Tilley (2006) states that quantitative methods tend to investigate what *is*, or *is not* successful, while qualitative methods attempt to understand what is relevant for whom, its context and how. Kelly (2012) states that qualitative approaches in evaluations enable the consideration of the social drivers behind the outcomes of evaluations.

Qualitative research attempts to acquire information of occurrences, as described, experienced, and perceived by the participants, to enable the scholar to understand, analyse, and draw rational explanations on issues (Gorman et al., 2005). They are grounded on the fact that the social realm is multifaceted and dynamic, with some occurrences unquantifiable through numbers and statistical numerations (Hoepfl, 1997). The approach draws on the experiences and interpretations of the participants, regarding the phenomena in question, considering that an occurrence derives different explanations, relative to background or context (Neuman, 2007). For this current study, these facts were essential, as the participants/respondents emanated from four different countries, as well as diverse professional backgrounds. Consequently, their experiences were essential to understand the impact of the programme, or lack thereof, with limited generalisation, regarding the participants/respondents' backgrounds. The programme under evaluation was unique, and had not been evaluated, previously; therefore, it was essential to engage a less generalising approach, to gain a deeper understanding on the outcomes of the programme.

Quantitative research is based on examining numeric data, to address the research questions (Muijs, 2004). There are two distinct types of quantitative designs, namely, experimental and quasi-experimental designs (Muijs, 2004). Experimental is considered scientific in approach, and generally conducted in controlled environments, such as laboratories; whereas non-experimental, or quasi-experimental designs, closely simulate scientific procedures, and are mainly used in social sciences (Muijs, 2004). Mujis (2004) further states that quasi-experiments are mainly associated with survey-based research. Quantitative surveys are designed to convey numeric, statistical analysis and accuracy of information, within set variables (Jansen, 2010). Therefore, in research, it is

a methodical approach for the collection of quantitative data (Hox, De Leeuw, & Dillman, 2008). Since the questionnaire had quantitative components, as well, it was essential to engage some of the elements of quantitative analysis. Ultimately, it was important to use an approach that would accommodate qualitative and quantitative facets of data, to tackle the complexity of evaluations.

3.4.2. Research Design

This current study was an evaluation exercise of a programme with complex elements that could not be addressed easily, through a single dimensional approach. The main contrast between evaluations and basic research is that the aims and objectives are usually predefined, relative to the entity of evaluation (Kelly, 2012). The selection of a design in this current study was influenced by the general complexity of evaluations. The Kirkpatrick Four Level Model for evaluating a programme was applied, in the execution of this research, with the aid of questionnaires, developed by Kirkpatrick Partners (Kirkpatrick Partners, 2009), in an attempt to exploit the model, as much as possible. The study used descriptive and exploratory designs to accommodate the multidimensional nature of evaluations (Neuman, 2007).

A descriptive design is essential to address new social incidents and enable less complicated explanations (Thomlison, 2011). Descriptive research does not subscribe to rigid theoretic constructs, as opposed to other qualitative designs (Sandelowski, 2000). According to Thomlison (2011, p. 131), “Although the level of knowledge generated from descriptive studies is less than ideal, it provides data that identifies variables, describes relationships, and contributes to increasing our understanding of the question being asked”. The questionnaires used in this current study comprised quantitative questions; however, the population size was too small to generalise, or draw conclusive findings, through statistical analytic methods only; therefore, a descriptive approach was employed for basic discussion on the quantitative data.

Exploratory research provides benefits by collating information on relatively indefinite topics, and is commonly used in the formulation of new ideas (Manerikar & Manerikar, 2014). Jaeger and Halliday (1998) assert that the objective of exploratory research is to present new ideas on a subject, which helps to create new propositions. The exploratory component of this current study assists in expounding on the insights derived from the

descriptive postulations. The use of descriptive and exploratory designs is to present a summary of the quantitative information, and draw insights from the participants' perceptions on the outcomes of the programme, considering their different backgrounds. Evaluation can be very complicated, and necessitates the use of various methodological approaches, simultaneously (Kelly, 2012).

3.4.3. Population and Sampling

Population in research refers to all possible candidates, or people, who possess the required traits of the research investigation (De Vos, Strydom, Fouché, & Delport, 2011). The population size of this current study comprised 32 participants/respondents from all four countries (Kenya 8, Tanzania 8, South Africa 10 and Germany 6), who had enrolled in the HIM programme. The researcher opted for total population sampling (TPS) because the study population size was so limited, and input from all the participants/respondents was deemed essential (Etikan, Musa, & Alkassim, 2016). TPS is a form of purposive sampling, where the entire population of the study is considered for research (Etikan, Musa, & Alkassim, 2016). Purposive sampling is a non-probability sampling technique that relies on the researcher's judgement, when considering participants, events or objects, based on their association to the research undertaking (Sharma, 2017). It is commonly associated with qualitative studies, but its use is expanding in survey methods, in an effort to reach difficult-to-access populations (Barratt, Ferris, & Lenton, 2015), which was significant for this current research, with participants/respondents located in four different countries.

All the alumni and candidates of the Masters in HIM programme were approached to complete a semi-structured questionnaire, based on their enrolment year, with the 2014 cohort completing a delayed evaluation questionnaire, and the 2016 group, the immediate evaluation questionnaire. The two questionnaires used, were specifically designed to collect delayed and immediate training evaluation data, respectively, as provided by the Kirkpatrick Partners (2009). The first part of both questionnaires, collected the demographics of the candidates.

To gain the trust and attention of the participants/respondents, the researcher corresponded through the programme coordinators for the initial introductions. In addition, the researcher sent follow up emails to the participants/respondents, over a

period of three months, after the last group had been contacted, to persuade more participants to engage. Consequently, in Kenya, four respondents/participants availed themselves for this current study. In Tanzania, three respondents/participants consented. From the South African cohort, four participants availed themselves for this current study. However, in Germany, only one participant/respondent agreed to participate, while two had participation reservations. Ultimately, a total of eight (8) subjects for the delayed evaluation, and four (4) for the immediate evaluation, of a possible 32, participated in this current study, being a response of approximately 38%.

3.4.4. Data Collection

To ensure the ethical standards of this research, ethics clearance was obtained from the University of the Western Cape Senate Research and Ethics Committee (Project number HS/17/7/4, Appendix C). There are various acceptable means of data collection that provide reliable data, namely, interviews, observation, and the examination of documents (Creswell et al., 2014). Data collection for this current study was conducted through two semi-structured questionnaires (Appendices A & B) that were obtained from the Kirkpatrick Partners website (Kirkpatrick Partners, 2009). Both comprised quantitative and qualitative questions to describe and explore the experiences of the participants/respondents.

Semi-structured surveys are conducted within the parameters of set standard questions, but flexible enough to gather unpredicted insights, by allowing the participants to express themselves further with predetermined open-ended questions (Mitchell & Jolley, 2010). Responses from close-ended questions could allow participants/ respondents to respond to sensitive questions, and the list of multiple-choice answers provide and limit the context of possible answers for the participants (Neuman, 2007). The open-ended questions could add depth to the data, through further elaborations (Adams, 2015), and the participants are encouraged to express themselves freely, which could lead to unexpected findings (Neuman, 2007).

In this current study, data collection was conducted through self-administered, and researcher-tended-self-administered surveys. During self-administered surveys, the researcher is not present; the participants/respondents read and answer the questions, unaided (De Leeuw & Hox, 2008). The most common methods of conducting surveys

are via mail, online and computer-aided means (Neuman, 2007; De Leeuw & Hox, 2008).

Therefore, in this current study, for the first method (self-administered), the questionnaires (Delayed to the 2014 cohort & Immediate to the 2016 cohort) were sent to the participants for completion via email and Google: Forms Online surveys (Kelley et al., 2003), with instructions on how to complete the questionnaires, and no interference from the researcher (De Leeuw & Hox, 2008). Correspondence was sent to the South African participants/respondents. Subsequently, the Kenyan and Tanzanian subjects were included, a month later, and finally, the German participant/respondent, five months thereafter. The survey questionnaire with instructions (in Microsoft™ Word format), ethics clearance, consent forms and information sheets (in PDF format), as well as a link for the Google: Forms Online survey, as an option, were sent to the participants/respondents. This was done to provide options, even for those with limited internet access, considering that the online survey had to be completed on the internet (Neuman, 2007).

The participants were invited to read the information sheet and sign the consent form. All the prospective participants/respondents submitted signed consent forms. Four completed the word copy, while another two completed the online survey. The questionnaires took approximately ninety minutes (one-and-a-half hours) to complete. The response rate was low, which is common in this form of data collection (De Leeuw & Hox, 2008), with a total of six responding; four from South Africa (3 delayed and 1 immediate), one from Kenya (delayed) and one from Germany (delayed). This could be attributed to the participants/respondents ignoring email correspondence, the emails being directed to their less active addresses (Neuman, 2007), or being filtered to their spam mail folders.

The second survey method (researcher-tended) was used in Kenya and Tanzania; a group self-administered survey, in the presence of the researcher, at a pre-arranged location, in their respective countries. All the questionnaires were completed on computers. Each subject completed the questionnaire independently, with very limited interference from the researcher (De Leeuw & Hox, 2008). A total of six participants/respondents (3 delayed from Kenya and 3 immediate from Tanzania)

engaged in the survey. The main advantage of this method was that the participants could ask for clarity, when they did not understand the questions, which enhanced the data quality (De Leeuw & Hox, 2008). The processes were time efficient, because all questionnaires were completed and submitted within two hours per group. However, the process was considerably expensive (Neuman, 2007), because of travelling costs.

3.4.4.1. Delayed Evaluation Questionnaire

In this current research, the delayed questionnaire catered for participants/ respondents, who had completed programmes, and had had the opportunity to apply the acquired skills. It was aimed at evaluating the 2014 MHIM student cohort. The researcher collected data about the programme's relevance to the participants/respondents' development needs, via the survey questions, in order to determine its benefit to them.

The *Reaction level* was an attempt to assess the participants/respondents' learning experience throughout the training programme cycle, including the learning environment, teaching methods and organisational processes (Yardley & Dornan, 2012), as well as whether, or not, the programme was a pleasant experience (Praslova, 2010). Kirkpatrick (1996) asserts that participants/respondents tend to gain more knowledge and understanding, when the learning experience and environment are pleasant. The *Customer satisfaction* section was included, to ascertain whether the participants/respondents were content with the programme, overall, and comprised 1-10 rating scale questions, as well as open-ended questions.

The *Learning level* was incorporated to determine whether *knowledge* was acquired through the training programme (Praslova, 2010). This assessment was aimed at establishing whether the participants/respondents gained some knowledge, regardless of whether it developed competences, which they required in practice (Kirkpatrick, 1979). In addition, this level assessed changes in *attitude* and *views*, as a result of acquired knowledge, which informs thought processing and social skills (Yardley & Dornan, 2012). This is usually done by conducting assessment exercises, to determine knowledge gained from the programme (Rajeev et al., 2009); however, in this current study, the participants/respondents

highlighted the content they remembered most, as well as their understanding of the programme's relevance. The acquired *knowledge* questions were open-ended, and the participants/respondents' understanding of the reasons for this type of programme, comprised 1-10 rating scale questions, as well as open-ended questions. This enabled the researcher to gauge whether the participants/ respondents understood the reasons for the programme, as well as comprehend whether their perceptions were aligned with the programme's objectives.

The *Behaviour level* assessed whether there was change in behaviour, as a result of the training (Kirkpatrick, 1996). This section was essential to determine whether a transfer of learnt competences into practice had transpired, which is the fundamental part of training and development (Saks & Burke, 2012). The participants/respondents were required to rate the extent to which they were applying what had been learnt through the programme, on a 1-10 rating scale, open-ended. Subsequently, on a nominal scale, they were requested to highlight the extent to which the programme was relevant to the improvement of leadership, management and multicultural communications competences. Thereafter, the Likert scale was used to determine how long each participant/ respondent took to apply what s/he had learnt. How specific motivating factors contributed in encouraging them to apply what they had learnt was requested next, rated on a 1-10 rating scale. Lastly, they were required to state the challenges they had faced, when applying what they had learnt, as well as the support needed to improve the application of learnt competences to practice, through open-ended questions.

The *Results level* assessment comprised leading indicators and desired results related questions. The leading indicators denoted the ongoing transformation, showing changes as a result of change in behaviour (Yardley & Dornan, 2012). This section involved a 1-10 rating scale to determine the extent of the impact, a list to select specific areas that were improving, and open-ended questions to state the expected outcomes, as a result of the change. The desired results confirmed positive outcomes, as a result of behaviour changes (Praslova, 2010). This section included a 1-10 rating scale to determine the extent of the results, according to

their expectations, and open-ended questions to highlight successful outcomes, as a result of behaviour change, in their respective organisations.

3.4.4.2. Immediate Evaluation Questionnaire

The immediate survey was aimed at evaluating participants/respondents, who were either in the completion phase, or had just completed the programme, for this current study, the 2016 admissions cohort. At the *Reaction level*, the participants/respondents' engagement with being attentive and dedicated to their studies, the relevance of the course towards their competences development, and customer satisfaction, were assessed. This enabled the researcher to determine whether the participants/respondents were keen and focused on learning, in order to derive the maximum benefits from the experience (Kirkpatrick, 1979). Each component of the section comprised a 1-10 rating scale, as well as open-ended questions.

The *Learning level* involved the assessment of knowledge, attitude, confidence and commitment components. The *knowledge-related* questions consisted of open-ended questions for participants/respondents to state what they had experienced as meaningful in the programme. The *attitude-related* questions, aimed at understanding the programme's significance to the participants/ respondents, as well as their own perceptions of what they intended to achieve, involved a 1-10 rating scale and open-ended questions. The *confidence* questions were focussed on gauging whether the participants/respondents were confident about exploiting the knowledge they had gained from the programme, as well as determining the resources limitations. The questions were rated on a 1-10 scale, with a list of possible limitations that could hinder the successful application of acquired competences, to select from. The participants/respondents were also required to highlight the perceived improvements regarding the development of specific competences, via the programme, on a nominal scale. The *commitment* questions were aimed at determining whether the participants intended to use the acquired knowledge. A 1-10 rating scale was used to gauge this commitment, with a dropdown list of possible hindrances to select from, for those who pledged low commitment, and open-ended questions to state their objectives, concerns and possible solutions, to enhance their commitment.

This immediate evaluation questionnaire did not include a *Behaviour level* section rating, because it was assumed that the participants/respondents had not been able to exploit their newly acquired knowledge, as they were still busy with their studies. Therefore, the *Results level* of this section measured predictive results, rather than actual results. The questions are made up of open-ended and nominal type questions, to determine the participants/respondents' expected outcomes, as a result of applying the knowledge, or competences, acquired via the programme.

3.4.5. Data analysis

Data analysis was conducted with computer-aided tools, Microsoft Excel™ 2010 for the quantitative analysis section, and the analysis tool, Atlas *T.i.*™ version 8.0., for the qualitative section. Microsoft Excel is easily accessible and useful software to collate data from a variety of sources (Bazeley, 2009). Atlas *T.i.*™ is an analysis software tool that enables processing and assessing of qualitative collected data (Scales, 2013). However, software does not conduct the work, but rather assists in collating data, without interfering with the intellectual contribution (Hwang, 2008).

The quantitative data were analysed, employing a descriptive statistics approach. This form of statistics involves processes of arranging and summarising data, to acquire discussable and important aspects, without exploring all the elements of it (Heiman, 2011). In this current study, the researcher used frequency distribution to present nominal and ordinal data. All numeric data were collated through Microsoft Excel. The 1-10 rating questions were converted into percentages, since the questionnaire had no defining values. The data were simplified into graphs and charts, for more clear and simple presentation.

For the qualitative data, the researcher used the Thematic analysis approach, which is a systematic descriptive form of qualitative method (Vaismoradi et al., 2013). Thematic analysis is considered a flexible and basic analytic approach to qualitative studies; however, it still provides a systematic and rigorous approach to research, capable of producing superior, thorough and intricate explanations of data (Braun & Clarke, 2006). Though a tool was engaged, the steps recommended by Braun and Clarke (2006) were followed closely, as follows:

1. **Step one,** requires thorough *familiarisation with the data*, which can be acquired through the transcribing of recorded material, as well as taking notes to formulate codes (Braun & Clarke, 2006). Since all the data were collected through survey questionnaires, there was no transcribing; therefore, the researcher was familiarised with the dataset, while capturing the quantitative data onto a spreadsheet. Thereafter, the data questionnaires were uploaded onto Atlas *T.i.*™ to extract the open-ended answers, for qualitative data collation and analysis.

2. **Step two,** involves *formulation of codes and collating data*. The codes can be determined by data, or theoretic framework, depending on whether the intention is to look for prescribed trends, or the whole dataset (Braun & Clarke, 2006). This study used the levels one to four of the Kirkpatrick Model of evaluation, as themes headings to simulate the flow of the questionnaire (Jansen, 2010). Subsequently, the constructs of each level, which had at least one question in the questionnaire, were used as sub-codes. This was done to maintain consistent categories of the dataset, to avoid distortions during analysis. Considering that the responses were specific to relative questions, and were consistent across all surveys, since there was no probing, or interviewer interference, collating was done to group responses under relevant codes.

3. **Step three** is referred to as the *themes identification stage*. Codes are rearranged into relating themes to gather constructive meaning; some codes will be important and useful, while others might be rejected (Braun & Clarke, 2006). The codes were grouped together according to the relevant levels of the model. The outcome was exported from the Atlas *T.i.*™ for easy of manipulation and analysis. The data were regrouped within the codes, according to relevant themes. Most of the data were retained, as all the responses addressed relative questions across all surveys.

4. **Step four** involves the *evaluation of themes*. At this stage, the subjects are reviewed for meaning and coherence; therefore, at the end of the step, there should be a clear narrative about the data (Braun & Clarke, 2006). This current study was a programme evaluation, and was bound to elicit relatively similar responses. The themes were regrouped, according to the number of responses

the theme elicited; from the most, to the least. However, the codes, or model levels, were maintained for the report.

5. **Step five** entails *naming and defining themes*. At this stage, the themes are analysed and discussed, to establish how they fit into the overall research, for a formative story, and relabelling, for the final report (Braun & Clarke, 2006). Since the codes and sub-codes matched the survey questionnaires, there was no renaming, as they had already been defined in the Kirkpatrick Model of evaluation, and data collection sections.

6. **Step six** is *report compilation*. The report should be compiled in such a manner that it does not merely narrate the obvious, but provides insight, meaning, examples and evidence, to support the themes (Braun & Clarke, 2006). The final report was compiled. Information from quantitative data was incorporated to provide additional insight. The findings were arranged according to the Kirkpatrick model's four level.

3.4.6. Reliability and Validity/Credibility

Evaluators of research require a balance, impartiality and comprehensiveness in a study to substantiate its quality (D'Cruz & Jones, 2006). However, it is a challenge to justify qualitative findings, as the same data is subject to different interpretations; therefore, the need to prove the trustworthiness of the study (Mandal, 2018). Qualitative research signifies that experience has value to those who were involved in the occurrences, and the researcher can only ask that the participants represent the facts correctly (D'Cruz & Jones, 2006).

Reliability and validity are factors used to determine whether measures to conduct research are appropriate for the constructs (Neuman, 2007). These terms are usually associated with quantitative research, to determine whether the tools used, are set to achieve the intended objectives (Bolarinwa, 2015), which is an attempt to improve rigour in research (Creswell, 2007). Reliability in quantitative studies signifies the potential replicability of the results, if the same measures were applied; while in qualitative research, it is an attempt to determine whether the data collected about an occurrence, or an individual, is an accurate representation of the phenomenon (Neuman, 2007). However, replicability, is unattainable in qualitative research, because various

important factors, including the participants' views, and the contexts, are prone to change (Neuman, 2007). It is meant to determine the consistency that an individual will repeat the same answer at different periods, or the similarities in answers of different individuals in the same context (Fowler, Jr. & Cosenza, 2008). There are various means of testing the reliability of a questionnaire, namely: a pilot test of the questionnaire, or tool, to assess its consistency towards its intended purpose; getting experts' opinions on the comprehensiveness of the questionnaire (Campanelli, 2008) and repeat collection with the same participants (Bolarinwa, 2015).

Qualitative research applies different strategies that are more flexible, because data collection is not considered a rigid process (Creswell, 2007). The strategies are influenced by the context and a changing environment that require distinct methods, which cannot be easily repeated at times, but enable multifaceted and different interpretations (Neuman, 2007). This current research adopted a qualitative bias, because of the limited number of participants; however, data collection was conducted through survey questionnaires, developed by the organisation, Kirkpatrick Partners (2009), founded by the model's founder, Donald Kirkpatrick. Changes made to the questionnaires were superficial, and not scope-affecting. The questionnaires were designed to accommodate various evaluation exercises; therefore, the researcher had to narrow down the scope of the questions, to meet the requirements of this particular research. However, the questionnaires were not tested through conventional quantitative methods, such as a pilot study, which eventually use statistical analysis, because of the small number of participants, and the relatively low participation. Regardless, the results were analysed through a qualitative approach and basic descriptive statistics.

The research data collection was conducted progressively with one group at a time. After each group's responses were obtained, the surveys were checked to verify whether there was consistency in the answers, within the respective group, and across countries. The responses portrayed a relatively similar understanding of the questions and a consistency in the answers. The other means of improving reliability in qualitative research is by recording the research interview proceedings, and verbatim transcriptions of the data, to capture the exact participants' responses (Creswell, 2007). This current study was conducted through surveys, which implies that all documented data was according to the participants' narratives. This current study was only limited to the

MHIM participants, to maintain credibility, as they participated in the programme, and were, potentially, the only reliable source of data for the study (Neuman, 2007).

Even though reliability is an important aspect of research, it does not imply that the responses are valid, unless the questions represent reality (Fowler, Jr. & Cosenza, 2008). Validity in quantitative research expresses how closely related the constructs of the tool are to the actual reality that the research is attempting to comprehend (Neuman, 2007). However, in qualitative research the preferred term is credibility (Creswell, 2007). It is considered to be measures taken to represent the results accurately, as portrayed by the participants and researcher (Creswell, 2007). Neuman (2007) asserts that it is the certainty in the researcher's accurate data and analysis representation of reality.

There are various means of conducting research validity, including face, construct, content and criterion-related validity (Bolarinwa, 2015), member validation, natural history and ecological validity (Neuman, 2007). Although the questionnaires were developed the Kirkpatrick group, to exploit the model used in this current study, academic validation was required. In this current study, the researcher opted for face validity and member validation. Face validity is another form of content validity, where an expert's opinion is requested to review the research tool's compatibility for the study (Bolarinwa, 2015). Consultation of even a single expert is considered a positive contribution towards validity, although more than one expert is recommended (Campanelli, 2008). In this current study, the supervisor and co-supervisor approved the survey questionnaires, used to conduct data collection.

Member validation is attempted through the participants/respondents' reassessment to affirm that the data correctly described their accounts (Neuman, 2007). It is also considered to be the participants/respondents' debriefing to ascertain their understanding of the survey, after completion (Campanelli, 2008). In this current study, the researcher opted to reaffirm responses after the completion of the surveys, through an open discussion with the participants/respondents, and by recording the sessions of the interviewer-monitored, self-administered surveys (Kenya and Tanzania). The participants reasserted their responses, and there were no changes.

3.5. Ethical Considerations

Ethics are principles and regulations designed to provide a general acceptable and desirable approach of conduct and behaviour towards subjects of research (Creswell, 2007). The first priority before commencement with data collection was to obtain permission from the relevant institutional authorities (Creswell, 2007). This was a primary research study, and involved written surveys; therefore, permission to access the participants/respondents was requested from the University of the Western Cape, Senate Research and Ethics Committee (Appendix C). Studies with human participants need to observe human rights, and the following assertions, which are relevant to this current study, were followed, as suggested by Creswell (2007):

1. The participants were not harmed, physically or emotionally, in this current study. The experiences of participants, regarding their participation in the MHIM programme, were of interest to the researcher.
2. Participation in this current study was voluntary, and the participants/respondents could revoke their participation, whenever they wished to do so.
3. The participants/respondents were informed justly with relevant information regarding the study (Appendix E), totally void of deception. Subsequently, informed consent was obtained from the participants/respondents, as they signed off the consent forms (Appendix D).
4. The participants/respondents were guaranteed anonymity and confidentiality to protect their privacy. Their names were not used in any part of the study. All the data were collected electronically, and the data sheets they completed were safely stored in a cloud file, only accessible by the researcher.
5. There participants/respondents were not compensated for participating in this current study.

3.6. Conclusion

The section discussed the study background and methodology used to conduct the study. The study comprised of participants from South Africa, Germany, Tanzania and Kenya. The study was conducted through a survey methodology, comprising of qualitative and quantitative qualities and thematic analysis was the preferred method of analysis.

CHAPTER FOUR

RESULTS

4.1. Orientation of the Chapter

In this chapter, the researcher presents a summary of the participants/respondents' demographics, followed by the findings, in sequence, as per the Kirkpatrick Model of evaluation, commencing with *reaction*, *learning*, *behaviour*, and finally, *results*. The results are presented in quantitative and qualitative formats.

4.2. Demographics of the participants

A total of 12 participants/respondents, four from South Africa, one from Germany, three from Tanzania and four from Kenya, were involved in this current study.

Table 4.1: Demographics

	Immediate phase (N=4)	Delayed Phase (N=8)
Country		
Kenya	-	4
Germany	-	1
South Africa	1	3
Tanzania	3	-
Gender		
Female	1	2
Male	3	6
Age		
30-34	2	-
35-39	-	4
40-44	2	1
45-49	-	3
Profession		
Health Information Officer	2	-
Health Information Manager/Specialist	-	3
Computer System/Data Analyst	1	1
M&E Advisor	-	1
Managing Director	-	1
Pharmacist	-	1
Primary Healthcare Facility Manager	-	1
Teacher	1	-

Two students from Germany refused to participate in the study, in its current format. The final study sample comprised nine male and three female participants/respondents, aged between 30 and 49 years. Their professions were categorized into eight different specialization fields. A summary of the their demographics is illustrated in Table 4.1. The 2014 cohort (delayed evaluation) comprised 8/16 participants/respondents, and the 2016 cohort (immediate evaluation), 4/16 participants/respondents.

4.3. Findings Level 1: Reaction

At the reaction level, the perceptions of the participants/respondents after the programme are assessed (Rajeev et al., 2009). The delayed evaluation concerned *relevance* and *customer satisfaction*, while the immediate evaluation focussed on *engagement*, *relevance*, and *customer satisfaction.*

4.3.1. Delayed evaluation

A total of eight participants/respondents from the 2014 academic year participated in this current study (three from South Africa, four from Kenya, and one from Germany).

4.3.1.1. Relevance

Relevance engaged the alignment of the programme to the participants/ respondents' developmental needs. The participants were requested to rate the courses as follows: (1) timing appropriateness; (2) relevance to their profession; and (3) content regarding skills-development.

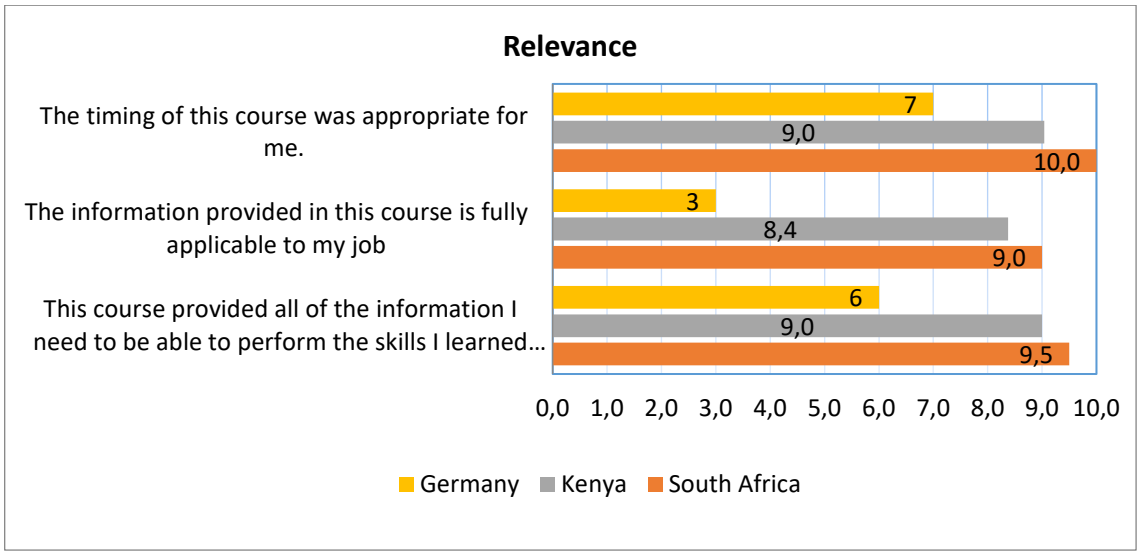

Figure 4.1: Programme relevance

The results are summarised in Figure 4.1. Regarding the timing appropriateness of the course, the scores ranged from 7-10; thereby indicating that the participants/respondents considered that the course was offered at the most opportune time for them. The South African participants/respondents scored the highest average rating of 10, and the German, the lowest, at 7. For the applicability of the course at work, the scores ranged from 3 to 9. Once again, the South African participants/respondents achieved the highest average rating of 9, and German, a lowly 3. On course skills development, the participants/ respondents rated the course between 6 and 9.5, with the South Africans scoring the highest average rating of 9.5, and the German, a rating of 6. Evidently, most of the participants/respondents experienced the programme as strongly relevant, to provide the necessary competences.

In addition to the above observations, the participants/respondents indicated which content they considered most useful, or less relevant, and offered suggestions to improve the course. One South African and Kenyan, respectively, considered all the content relevant, while the participants who had preference for specific content, highlighted what was most relevant (see Table 4.2).

Table 4.2: Relevant content

Country	ICT	Multicultural	Leadership and Management	Other
South Africa	Infrastructure Business Intelligence Service Management Data management Data Security	Intercultural	Financial Management Human Resource Management Project Management Quality Management Health Systems Management	Health Planning Health Policy
Germany	Business Intelligence Information Management		Health Management Leadership	
Kenya	Infrastructure Database Management Information Management Business Intelligence Electronic Medical Records Data Classification	Intercultural	Health Systems Management Health Information Management Financial Management Leadership	Research Methods Policy Development

However, participants/respondents also had to highlight the least relevant content to their professions. Two Kenyans and one South African were satisfied with all the content. Three participants/respondents considered certain specific content, less relevant, as follows:

> *"…Service management, IT Infrastructure management, Data management & Security…"* ***(SA-1)***.

> *"…Financial management in health…"* ***(G-1)***.

> *"…Risk management and knowledge translation…"* ***(K-1)***.

Additionally, some of the participants/respondents appreciated the content, regardless of its relevance as per the following extract:

> *"Not really although information of procurement is important am not currently involved in procurement issues."* ***(K-2)***.

With regards to the content, or aspects of the programme that needed improvement, two South African and one Kenyan participants/respondents had nothing to add. However, the others stated that the programme could be improved through the addition of practical analytic software packages, for example, SAS and STATA, as well as programming content for developing/coding skills. The following extracts refer:

> *"The health management information was adequate but the health IT information needs to be strengthened in order to have more hands on sessions alongside the theory sessions i.e. developing skills. Again there is need for more data management (data analysis and interpretation) sessions."* ***(K-2)***.

> *"Add epidemiology, Health analytics and Predictive analytics"* ***(K-3)***.

4.3.1.2. Customer satisfaction

The participants/respondents are the customers of the institutions that offer the programme. In this section, the researcher engages their perceptions regarding the value of the programme and the service received. The participants/respondents

rated the customer satisfaction of the course, as value for their expended time. The South Africans had the highest averaging rating of 8.8, and the German, a rating of 7. With regards to whether they would recommend the programme to their peers, the Kenyans recorded a 9.3 high average, and the German, the lowest, at 7. The results are illustrated in Figure 4.2. All the participants/respondents considered the expended programme time worthwhile and recommendable to their peers, with above average ratings (the South Africans and Kenyans presenting the higher ratings), which translate to relatively good customer satisfaction, overall.

Figure 4.2: Customer satisfaction

Even though customer satisfaction ratings were favourable, there was still room for improvement. The participants/respondents highlighted areas that needed improvement, namely, *time*, *programme structure*, as well as *administration and financial assistance*.

- **Time Management**

  The participants/respondents considered the time, allocated for classes and learning, very limited, and suggested various times, as well as some teaching and learning dimensions, to help in alleviating these concerns. The following extracts refer:

  > *"The programme needs more time span and addition of on eLearning platforms would improve it….."* ***(K-4)***.

"Increasing the time by an additional week to allow time for compact modules" ***(SA-2).***

"Each session to be at least 2 months, instead of 6 weeks." ***(K-1).***

- **Programme Structure**

The participants/respondents indicated that the course required some improvements, in oreder to be more effective. Some suggestions included increasing interactivity, and reducing the number of examinations; however, the major suggestions were: to introduce programming/coding; strengthening of the health systems and IT concepts; and restructuring the research modules, or content. The following extracts refer:

"Add some basic programming and Monitoring and evaluation." ***(SA-1)***.

"Health IT is very crucial part of health information management and therefore we need to have more hands sessions." ***(Opinion shared by K-4 & K-2 highlighted).***

The above suggestions were aimed at improving the programme's practicality, while the following extract considered the research content lacking in diversity appeal:

"Thesis writing was country specific however should have been standardized for all candidates regardless of the country and Thesis supervisors should be from any country not specific to the students own country to allow students to benefit from diversity" ***(K-1).***

- **Administration and Financial assistance**

Lastly, one participant/respondent offered the following comment regarding financial aid:

"I was partly funded, and would have been nice to cover all financial aspects." ***(SA-3)***.

However, this was not a major concern. Additionally, there was at least one participant/respondent who considerd that everything was adequate, with no additions required.

Even though the South African participants/respondents had the highest average ratings, the Kenyan participants/respondents were the most satisfied. More than the rest of the participants/respondents, they expressed that the programme was compatible with their professional backgrounds, as per the following comment:

> *"This was in line of my professional line and duty that enhanced my skills and practice to allow me improve my work outputs for the health sector. It also enhanced my practical skills in management of the Health information systems as well as optimal performance (an asset to the ministry)."* ***K-3***.

Consequently, the significance of enrolling students with the relevant professional backgrounds emerges, as they reap the most benefits, and are more inclined to utilise what they had learnt. The Kenyan participants/respondents appeared to appreciate the programme more, especially when applying competences learnt in the programme, as the following extract implies:

> *"I applied in various publications, development of the various policy briefs and instruments for health system management, training and mentorship for others and leadership, coordination and management of resources."* ***K-3***.

4.3.2. Immediate evaluation

A total of four participants/respondents from the 2016 academic year participated in this current study, three from Tanzania, and one from South Africa.

4.3.2.1. Engagement

Engagement relates to issues that interfered with the learning experience of the participants/respondents. The participants/respondents were required to rate the *programme's intrigue value, facilitator contribution, classroom environment, participants' engagement* and *responsibility of involvement* during the

programme. The Tanzanian participants/respondents had an average rating of 10 on most the factors, with 9.7 on the *classroom environment* and *engagement* factors. The South African participants/respondents averaged 10 on most factors, with 5 on the *engagement* factor. The results suggest that the participants/ respondents were nearly, fully engaged. The results are illustrated in Figure 4.3.

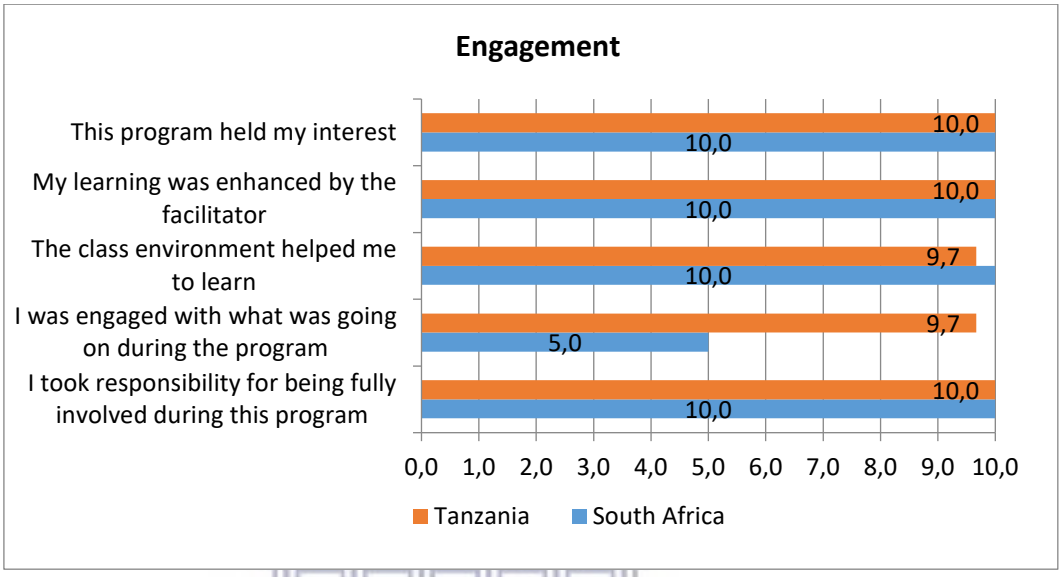

Figure 4.3: Programme engagement

The participants/respondents, however, highlighted a number of factors that could have enhanced engagement. The main issues that affected the Tanzanian participants/respondents were the *time factor*, *research module structure* and *lack of epidemiology content* in the programme. The following extracts refer:

> *"…The programme is missing Epidemiology Module that makes us difficulty in writing our dissertation."* ***T-1***.

> *"Yes, differently guideline in research proposal interferes with my learning. Also time is very short which led to fail in completing the research module."* ***T-2***.

In addition, the participants/respondents highlighted that no standardised procedures existed, which affected their proposal submissions.

The South African participant/respondent's major concern was the feedback of results, which were not issued timeously; therefore, the subjects were never sure

of how they performed in assignments. The Tanzanian participants/respondents offered the following suggestions on how to improve the programme:

> *"Epidemiology, biostatistics, Monitoring and Evaluation in health need to be added in the course curriculum…."* ***T-1***.

> *"I suggest research development topic should be taught by lecture from three university so as student should understand the guideline of their university."* ***T-3.***

In addition, participant/respondent T-2 added that more time should be allocated to the research module.

4.3.2.2. Relevance

Regarding relevance, the participants/respondents were requested to rate the following factors: *clarity on expectations*; *relevance of the programme*; *why the programme was offered*; *improvement in their jobs, by applying what they had learnt*; *ability to apply what they had learnt, immediately*; *potential for future success*; and *understanding how to apply, what they had learnt, in their jobs*. The results are illustrated in Figure 4.4.

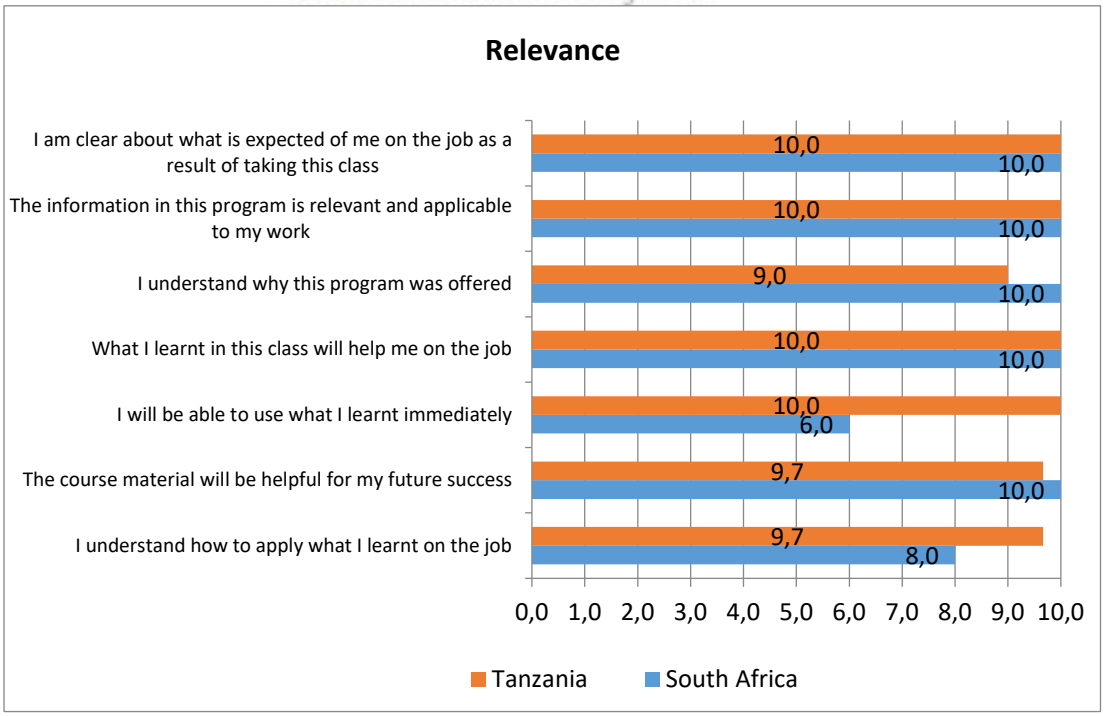

Figure 4.4: Programme relevance

The South African participant/respondent rated 10 for most factors, except the *ability to apply what they had learnt, immediately* (6) and *understanding how to apply, what they had learnt, in their jobs* (8). The Tanzanian group rated 10 for most factors, except *why the programme was offered* (9), *potential for future success* (9.7) and *understanding how to apply, what they had learnt, in their jobs* (9.7). The results suggest that the participants/respondents considered the programme strongly relevant.

The South African participant/respondent considered most of the content, relevant to the profession, while the other participants highlighted the following content as most relevant:

> "*Health data classification, Health Policy and Information Management in Health.*" ***T-1.***
>
> *"Hospital information system, IT resource management, Intercultural management and IT security management"* ***T-2.***
>
> *"IT resource management, Health care information system, Electronic medical records, Hospital information system and Health data management."* ***T-2.***

The South African participant/respondent suggested that IT and research modules were less relevant, while the Tanzanians considered all the modules, relevant.

4.3.2.3. Customer satisfaction

The participants/respondents were asked to rate the following factors: *the facilitators' contribution towards the learning experience*; *the need of follow-up to help apply what they had learnt*; *their desire to help others*; *would they recommend the programme to peers*; *time worthiness of the programme*; and *whether helpful information was received prior the commencement of the programme*. The results are illustrated in Figure 4.5. The South African participant/respondent rated all the factors as 10, except *recommending the programme to peers*, which was rated 7. The Tanzanian group rated most of the factors as 10, except receiving helpful information before commencement of the

programme (7) and the contribution of the facilitator (9.7). The average rating suggests relatively high customer satisfaction.

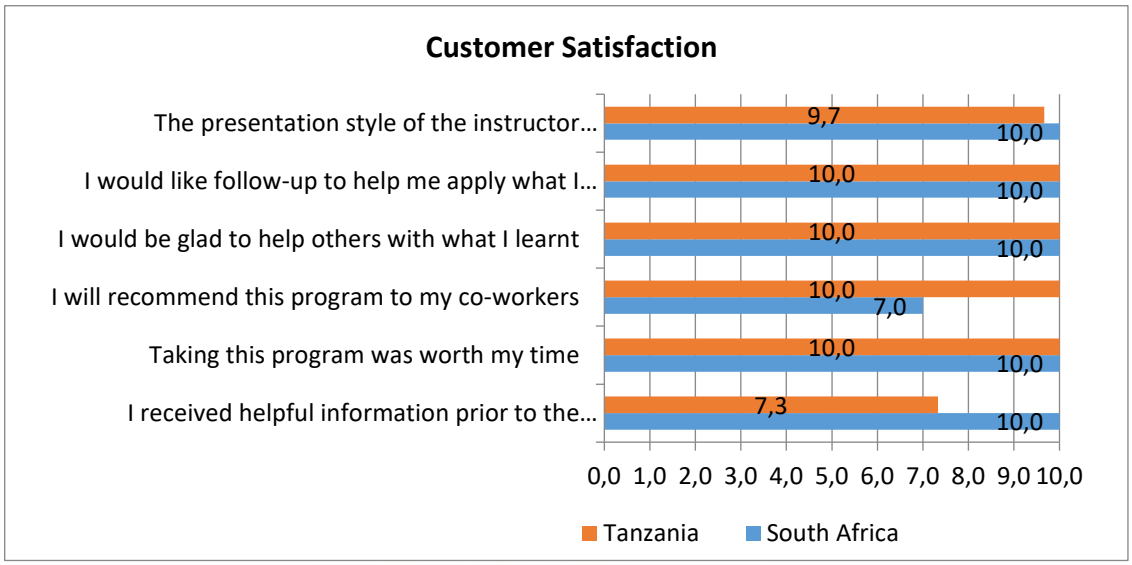

Figure 4.5: Customer satisfaction

The participants/respondents' suggestions to improve the programme's teaching and learning experience included: *time*; *feedback*; and *research module lecturing*. The following extracts refer:

> *"Giving students feedback at all times will help improve the programme."* ***SA-4***.

> *More time to be allocated in face to face lectures i.e. six weeks instead of allocated four weeks per semester."* ***T-1***.

> *"They should allocate enough time in modules, provide funds for research study and provide feedback on time."* ***T-2.***

> *"The results feedback should be on time. Research development program should have mixture of lecturers from all three universities so as to understand guideline of their home country university. Giving students feedback at all times."* ***T-3***.

Besides teaching and learning, the participants/respondents offered the following to recommendations,

"Following the importance of the course, I recommend it to be fully offered at home university to allow more students to attend or sponsors to assist by supporting more students. I also recommend the organizers to plan for succession plan for us to come and introduce Bachelor program for the same in our home university as there is no link since no university offering such course." ***T-1***.

"They should provide internship placement. The primary objective of the internship placement is to learn and gain experiences." ***T-2.***

"Certificate should include all three logos from three universities so as to show that we receive the knowledge from all three universities we need to appreciate the effort done by all three universities. The program is best in terms of curriculum and the contents." ***T-3***.

4.4. Findings Level 2: Learning

At this level, knowledge, skills or competences acquired, because of training or learning, are assessed (Frye & Hemmer, 2012).

4.4.1. Delayed evaluation

The delayed evaluation concerned *knowledge* and *attitude.*

4.4.1.1. Knowledge

In the knowledge evaluation section, the researcher attempts to assess the competences acquired, or developed because of participation in the programme. The initial stage the participants/respondents are required to highlight the content that they remembered predominantly. Information systems and their application in health-related content, were the most preferred. Management, leadership and multicultural content were the second most favoured. This was evident in their comments, as per the following extract:

"Majority of the topics especially on HMIS, Health system strengthens building blocks, Health policy and Health system…. Improve communication skills in conducting research. Data management tools, use of Tableau, Rapidminer… Improve

interpersonal, cultural across various organization…. Improve organization view on transformation and adoption of IT infrastructure and its services." ***K-4***.

This summarised most of the participants/respondents' views.

Regarding the content that they would have prefered to be included in the programme, the participants/respondents suggested *programming*, *more focus on the databases and research methodologies*, *statistical analysis packages* and *epidemiology*. It was evident that the preferred more practical applications as stated in the following extract:

"More practical stuff, databases, programming…" ***SA-3***.

4.4.1.2. Attitude

Attitude relates to the participants/respondents' perception of the programme's importance. The were requested to rate the clarity, or their understanding of why it was important to engage in the programme. The outcomes are illustrated in Figure 4.6. The South Africans submitted an average rate of 9, the German rated it at 7, and the Kenyans at 8.8, which suggests that all the participants/respondents were fairly clear on the importance of the programme.

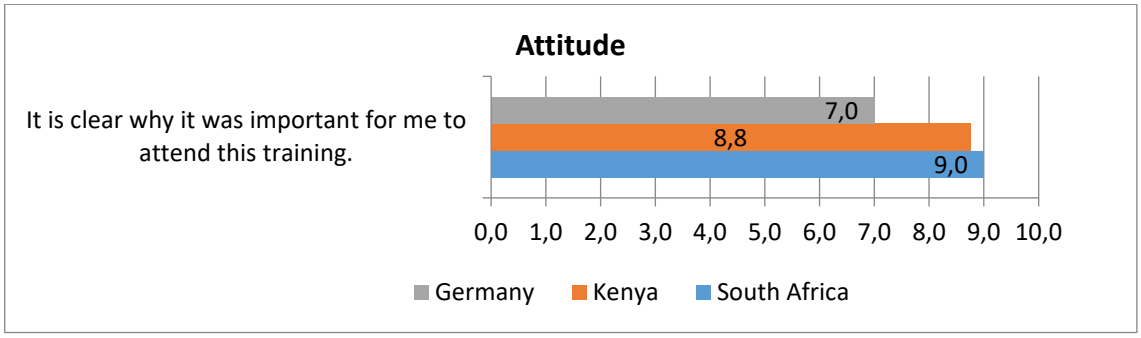

Figure 4.6: Attitude (Delayed evaluation)

To further emphasise their understanding of the programme's importance, the participants/respondents expressed their various reasons, which included, *developing competences in health management*, *professional development*, and *improving service delivery*, as reflected in the following extracts:

"Understand the importance of data usage in healthcare planning." ***SA-1.***

"This course gave me a broader perspective of health Information Management. It underscored the importance of accurate data for decision making in all areas of health." ***SA-2***.

"This has been a major learning experience for me; this has put me on another level in the job market." ***SA-3***.

"I learned new things, was able to foster my knowledge, had contact with people from different areas of work and multicultural and a degree in MSc." ***G-1***.

"What I learnt is going to improve my job performance." ***K-1***.

"Am a health information manager by profession and attending this course really added value to my performance." ***K-2***.

"This was in line of my professional line and duty that enhanced my skills and practice to allow me improve my work outputs for the health sector. It also enhanced my practical skills in management of the Health information systems as well as optimal performance (an asset to the ministry)." ***K-3***.

"Gain knowledge and skills to add value to improve organization service delivery." ***K-4***.

4.4.2. Immediate evaluation

The immediate evaluation focussed on *knowledge*, *attitude*, *confidence* and *commitment*.

4.4.2.1. Knowledge

The immediate cohort expressed more diverse views regarding the content that they remembered best, than the delayed evaluation group did. The following extracts refer:

"…Human resources management, Personal management, intercultural concepts and leadership…" ***SA-4***.

"…various ways/means of presenting information to the mass or governing board, like Ministry of Health…" ***T-1***.

"…IT security in health care management, hospital information management, data management for patient's information..." ***T-2.***

"…leadership and Management of the Hospital information system by using electronic systems…" ***T-3.***

In addition, they highlighted the content they considered the most meaningful, as per the following extracts:

"…human resources management…" ***SA-4***.

"…leadership and management…" ***T-1***.

"…IT security in health care management and IT resources in health care management…" ***T-2***.

"…coding of the disease so as to improve reporting system, to understand KEY PERFORMANCE INDICATORS by using dashboards… Understanding hospital workflow is important so as to provide the needed requirement on implementation of hospital information system." ***T-3***.

This group had very different interests, compared with the delayed group; however, health information systems, management- and leadership-related content, were the most preferred.

4.4.2.2. Attitude

The participants/respondents' attitude ratings of the course reflected high averages. The South African rated the factors, worthwhile to apply what they had learnt, and, the importance of the course content, as10, while the Tanzanians rated these factors as 9.7, which implied that they regarded the programme as relevant

to their professions, as indicated in Figure 4.7..

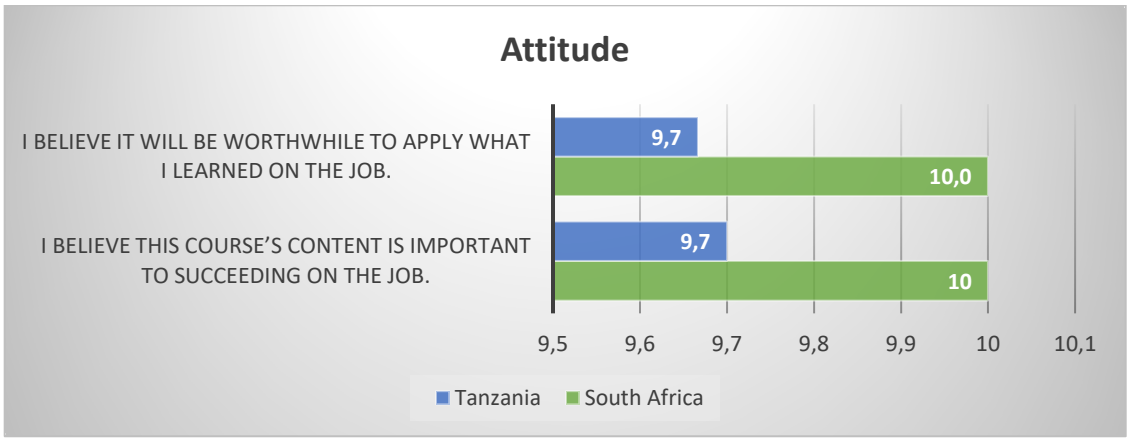

Figure 4.7: Attitude (Immediate evaluation)

Regarding the importance of the programme, the participants/respondents' views inclined towards improving service delivery, as well as competences in health information management, by stating the following:

> *"Improve service delivery in a working environment."* ***SA-4***.
>
> *"To improve information system in Health in our country and globally, to eliminate the existing gap in the reporting system in health."* ***T-1***.
>
> *"The primary objective is to gain skills, knowledge based on management of patients."* ***T-2***.
>
> *"The general issue is to improve the quality of services. In order to increase customer satisfaction we need to have best patient scheduling, transparency, how to maintain confidentiality and integrity of data."* ***T-3***.

Compared to the delayed group, the immediate evaluation participants/ respondents, apparently, were in the process of applying what they had learnt,. The delayed cohort had a longer period to apply what they learnt, since they had completed the programme already, when the immediate group were still busy, or had just finished. Consequently, the participants/respondents were required to

divulge the importance of applying what they had learnt. The following extracts refer:

> *"Improve communication in a working environment and improve management and leadership."* ***SA-4***.

> *"Error free health information management, timely reporting, training other on information management in health.* ***T-1***.

> *"It will help me to manage the IT resources in healthcare organization, Also it will help to insure the securities of patients' information in healthcare organization."* ***T-2***.

> *"Before doing any processing of deployment the ELECTRONIC HIS we need to get the system requirement from the personnel who are direct involved in the daily activity so as to capture the manual system flow."* ***T-3***.

Lastly, the participants/respondents were required to state their thoughts on applying what they had learnt, and highlighted improved service delivery and data management, as per the following comment, which covered most of their views:

> "*Increase of productivity, Customer satisfaction, improved health care data, Planning and management in health."* ***T-1***.

4.4.2.3. Confidence

Confidence relates to the belief of the participants/respondents in their capabilities and competences. The participants were required to rate their confidence to apply what they had learnt, as well as to recognize the resources at their disposal. The results are summarised in Figure 4.8. The South African participant/respondent rated both factors as 10, while the Tanzanians rated the factors as 10 and 9, respectively. Evidently, the participants/respondents were positive about the factors, which suggests strong confidence in their capabilities to apply what they had learnt, as well as in their understanding of the available resources at their disposal.

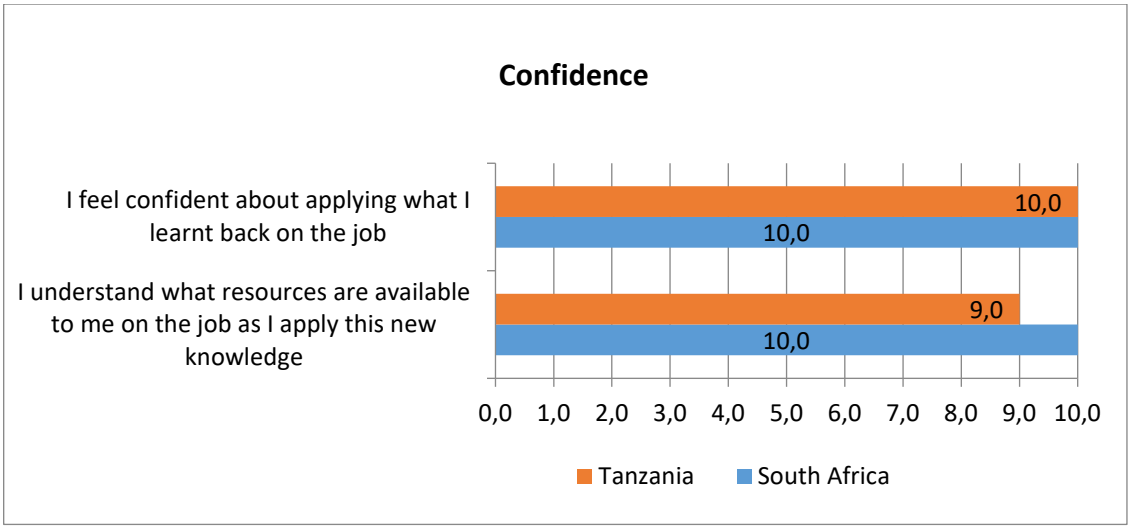

Figure 4.8: Confidence

The participants/respondents attested to their growth in confidence, with some highlighting the calibre of work they were engaging in, as proof of their competence and confidence. The following extracts refer:

> *"The improvement in my communication skill and leadership skills give me that confidence and assurance that I can do it."* ***SA-4.***

> *"I am involved in several programs on improvement of health care data… Involved on the strategies of improving civil registration of vital events e.g. Death and birth information… I started documentation improvement strategies in my institution as we have just moved in to paperless records of which we started with outpatients clinics."* ***T-1***.

> *"Am very confident in applying the knowledge in healthcare management to improving the data quality in healthcare management."* ***T-2***.

> *"The nature of the classes were most participatory method .We have been presenting, work in the class, online discussion these make us more confident… In the working setting I have been selected to several area so as to present the knowledge of the HIS which I receive so as to make them understanding of the concept."* ***T-3***.

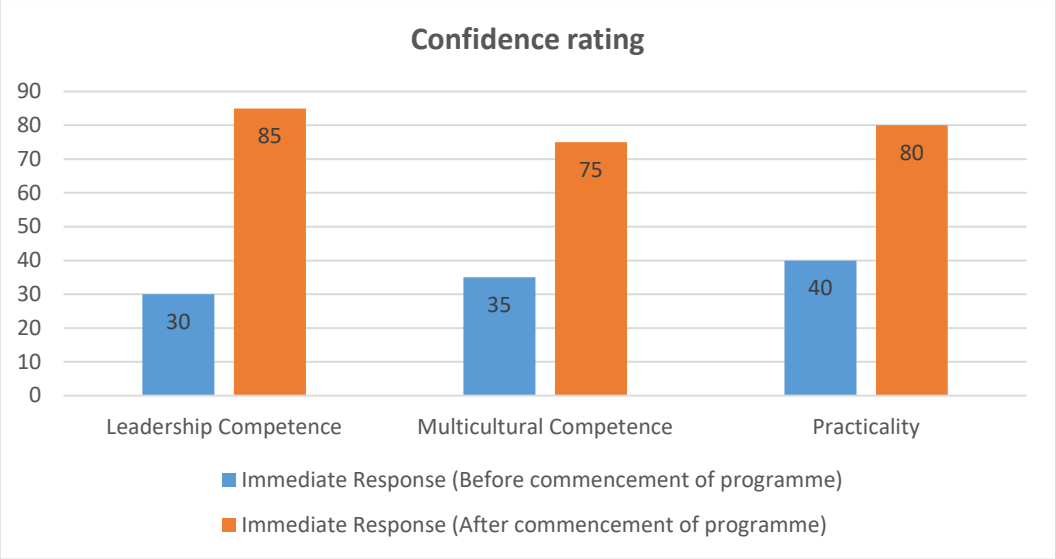

Figure 4.9: Confidence rating

In addition, the four participants/respondents, from two countries, were requested to rate leadership and multicultural competences, as well as the programme practicality, before commencement and after completion. Their ratings averaged 30, 35 and 40 percent, respectively, before commencement, compared to 85, 75 and 80 percent, respectively, after completion. This suggests that they had basic leadership knowledge, limited application of the competences, and low expectations from the programme. However, significant percentage increases in confidence were evident in leadership and multicultural competences (55 and 40 percent, respectively), and 40 percent assuredness in the practical applicability of the programme. Consequently, this suggests that they could perform and help others, perform with no assistance, and had confidence in the practicality of the programme.

4.4.2.4. Commitment

Commitment relates to the participant/respondents' pledge to apply what they had learnt from the programme. The Tanzanian participants/respondents rated their commitment at 10, while the South African rated a 6. The results are presented in Figure 4.10. The results suggest that the Tanzanians expressed high levels of commitment, while the South African expressed a fairly average level of commitment to apply what had been learnt.

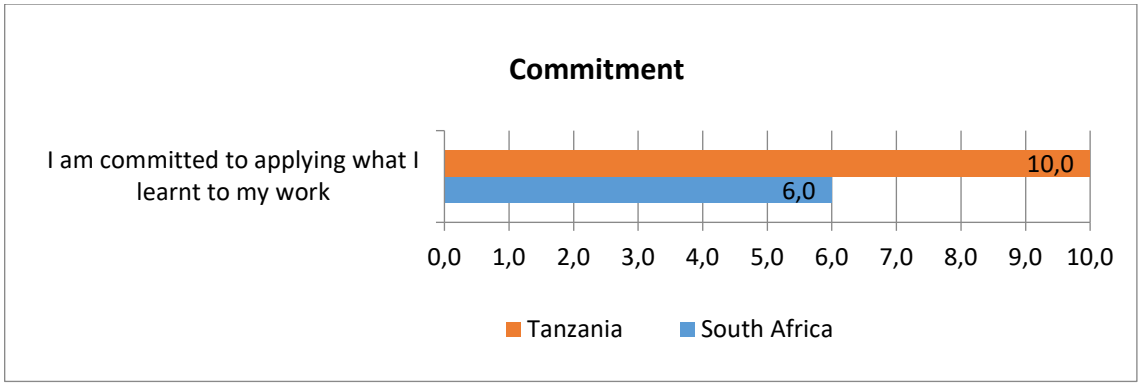

Figure 4.10: Commitment

The South African participant/respondent asserted that the lack of resources, to enable the application of what had been learnt, was a major hindrance; however, s/he expressed commitment to exploit the available resources. The Tanzanian participants/respondents expressed full commitment, as evidenced by the following extract:

> *"I'm fully committed as I am currently involved in all committee and national team of heath care and information system… Involved on decision making at the institutional level based on the health information management."* ***T-1***.

Additionally, the participants/respondents had to highlight potential challenges that would affect the application of what had been learnt. The South African participant/respondent stated the following:

> *"Shortage of staff and equipment in my other sectors… Workload – operating alone in the office instead of team and Lack of support from my colleagues"* ***SA-4***.

The Tanzanian participants/respondents highlighted the shortage of ICT resources, limited professionals with sufficient training, and limited budgets, as potential challenges. One participant/respondent summarised their concerns as follows:

> *"Shortage of professionals on health information across the country… Little awareness on the advancement of technology… Few*

ICT based facilities and Lack of universities that offers bachelor in HIM." ***T-1***.

Regardless of the limitations, there were still expectations that the participants/respondents would try to, or would have tried to, apply some of the competences learnt. The South African participant stated that s/he would try to improve communication in the organisation, while the Tanzanians stated the following:

"Implementation of EMR… Introduction of undergraduate program in our universities… Training of my colleagues on basic issues on HIM… Security of health care data." ***T-1***.

"Medical records skills, Archiving processing, Data management, Security of data and Health classification system." ***T-3***.

In anticipation of potential challenges, the participants/respondents highlighted the areas in which they would have needed support. The Tanzanian participants/ respondents suggested the introduction of short-courses, online programmes, conferences, and workshops, as measures of continuous development, as well as keeping abreast with changes in the field. The South African participant/ respondent stated the following:

"Financial support from my employers… Support from my lecturers – engaging them when experiencing problems when applying what I have learnt from this programme" ***S-4***.

4.5. Findings Level 3: Behaviour

This level evaluates changes in practise, generated though the application of new competences, due to training (Rajeev et al., 2009). This level only involved the delayed evaluation cohort, regarding *on the job behaviour* and *performance drivers*.

4.5.1. On the job behaviour

There was an expectation of change in behaviour, as a result of new skills and competences, learnt via the programme. The participants/respondents were required to

rate their ability, as well as success in the application of what they had learnt in the programme. The summary of the results are presented in Figure 4.11. The South African participants/respondents averaged 9.3, the Kenyans averaged 9, and the German rated 8 across both factors. Consequently, this indicates that all the participants /respondents considered themselves equipped enough to apply what had been learnt.

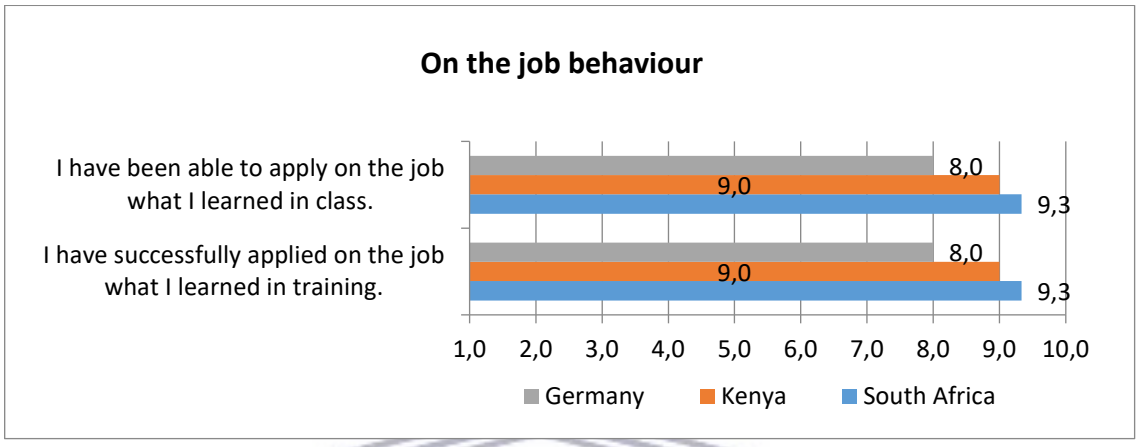

Figure 4.2: On the job behaviour

Some of the soft-skills that were meant to be developed through the programme were leadership and multicultural competences, as well as the practicality of the programme to develop these competences. The participants/respondents had to rate their improvement in these competences, after attending the programme. The results are illustrated in Figure 4.12.

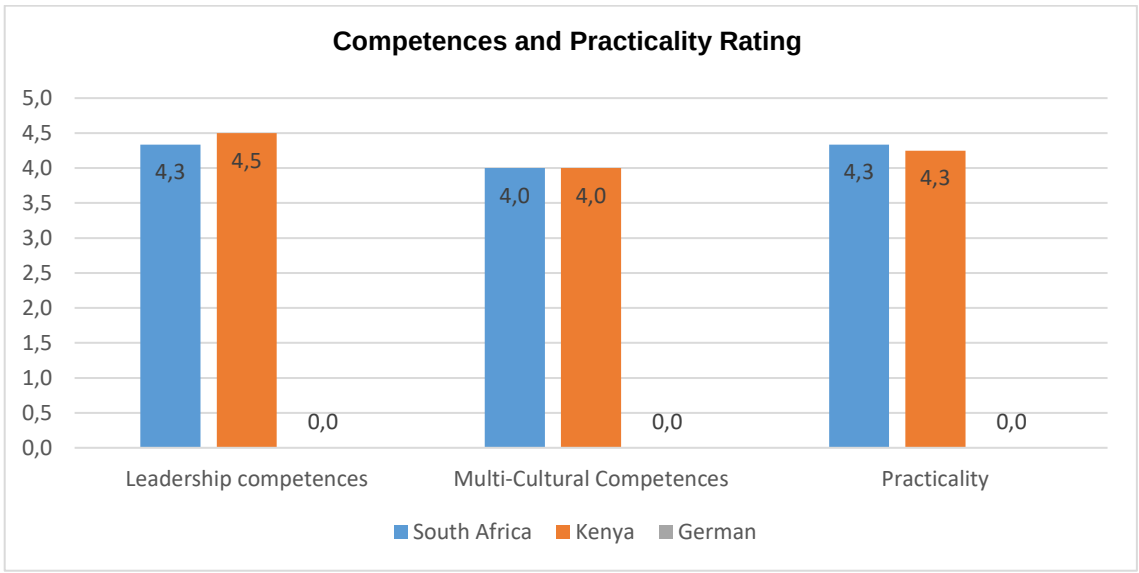

Figure 4.12: Competences and Practicality Rating

Of the 8 participants/respondents, 7 responded in this section, with 1 omitting the section. The South African participants averaged a rating of 4.3 on leadership, 4 on multicultural competences, and 4.3 on the practicality of the programme. The Kenyans averaged 4.5, 4, and 4.3, respectively, and the German refrained from responding to this section. Consequently, this indicates that the participants/respondents experienced improvements in leadership and multicultural competences, and confirms practicality of the programme to develop these competences. Ultimately, all the participants/ respondents acknowledged having applied what they had learnt. Their time-frames to application, after participation in the programme, are illustrated in Figure 4.13.

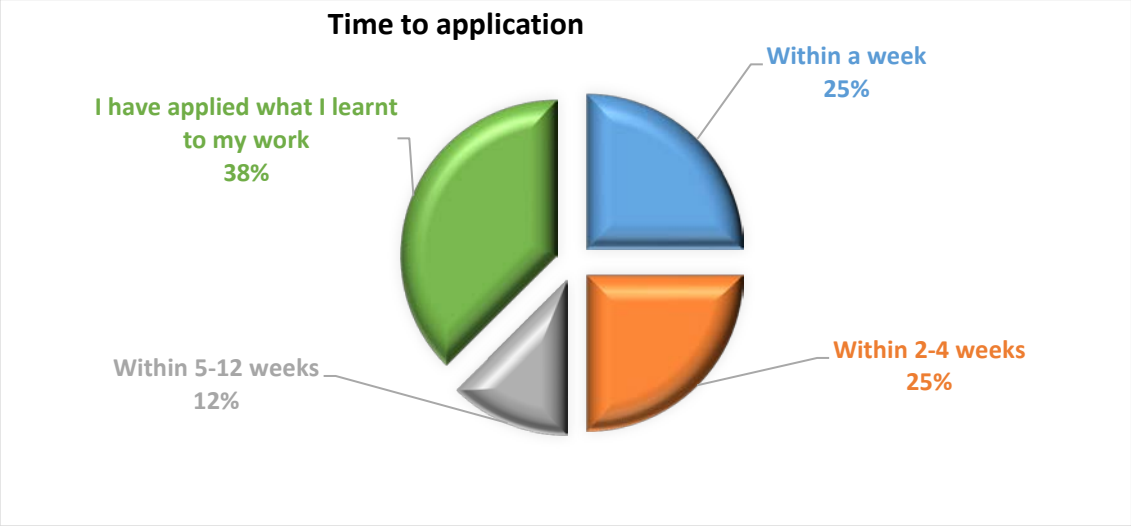

Figure 4.13: Time to application

Some of the participants/respondents (38%) preferred not to state how long it had taken them to apply what they had learnt, while those, who thad taken 5-12 weeks, were merely 12% of the sample population. Additionally, the participants/respondents were required to disclose their experiences, while applying of their competences. The South African participants/respondents disclosed that they did not experience any difficulties. The Kenyans were satisfied with their progress, as indicated in the following extracts:

> *"Am applying what I learnt in my current job. Am working as a monitoring and evaluation officer for a World Bank project on Results Based Financing. My research was on use of health information in reimbursing health facilities for performance and this is quite ideal in what am doing."* ***K-2***.

> *"Applied in various publications, development of the various policy briefs and instruments for health system management, training and mentorship for others and leadership, coordination and management of resources"* ***K-3***.

The German participant/respondent was also comfortable with applying what s/he had learnt. Overall the participants/respondents revealed that they had applied what they had learnt, which suggests that they were comfortable with the content.

Ultimately, the South African participants/respondents stated that they had not experienced any challenges, while applying the concepts, which they had acquired. However, the Kenyans highlighted a few challenges, for example, the ICT infrastructure, which was not adequate enough to match their competences. In addition, they regarded the lack of programming, as well as some analytic skills, as limitations, which are clarified in the following extracts:

> *"Yes my challenge has been in application of IT skills like, programming because there is no health IT competence without programming skills."* ***K-2***.

> *"Critical analytics especially on predictive analytics."* ***K-3***.

Yet another participant/respondent highlighted the organisational culture as a challenge, as it was not best practice oriented. The German participant considered time constraints a challenge, as well as colleagues, who impeded the application of new concepts.

Regarding continuous development, 3 participants/respondents, one South African and two Kenyans, stated their intentions of progressing to PhD degree studies. The following extract refers:

> *"Am planning to teach in a university in the department of Health Informatics and also am planning to enrol for a PhD program in Health Information Management."* ***K-2***.

Participant/respondent K-4 highlighted the intention of maintaining relationships with donor organisations, institutions of learning, as well as other individuals who would help them to grow. Another South African expressed that s/he would apply what s/he had learnt, without elaborating on how s/he would continue to develop.

4.5.2. Performance drivers

Performance drivers highlight various factors that affect the transfer of learnt competences to practice. The participants/respondents were required to rate the factors that influenced the application of the competences they acquired from the programme. The summary of the results are illustrated in Figure 4.14.

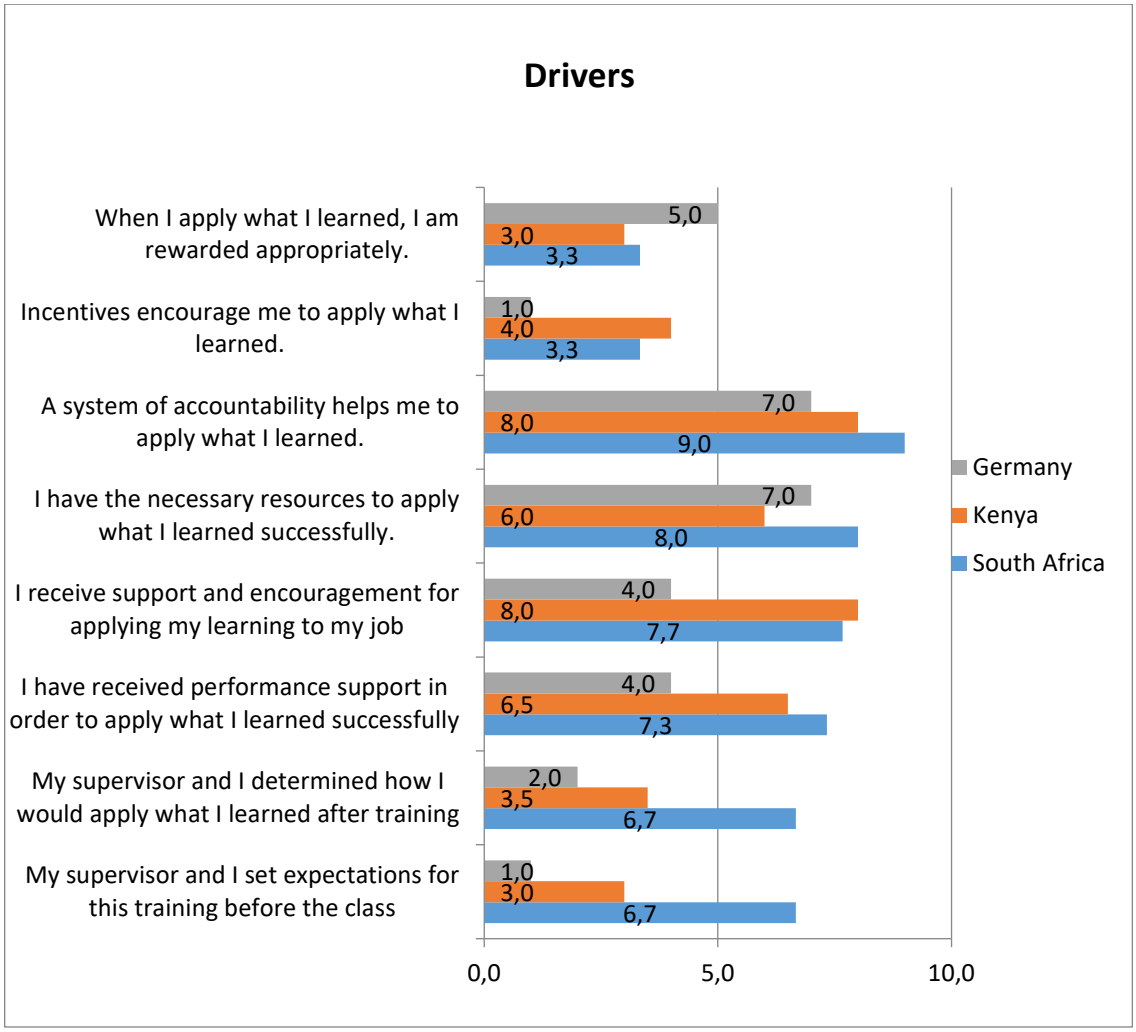

Figure 4.14: Drivers

The following factors were rated, namely: rewards motivation; incentives motivation; systems of accountability; necessary resources; support and encouragement; performance support; supervisor and student determining how to apply what has been learnt; and supervisor and student setting expectations before classes. The South African participants/respondents rated *systems of accountability* as 9; therefore, this driver appeared to be the major factor that encouraged them to apply what they had learnt. However, they rated *rewards* and *incentive* factors a low 3.3, depicting them as

the least influencing factors. The Kenyan participants/respondents rated *systems of accountability* and *support and encouragement* factors an average 8, portraying these factors as the most influential to them. In addition, they rated the *rewards* and *prior preparation with the supervisors* factors a low 3, depicting them as the least influential factors among the Kenyan participants/respondents. The German participant/respondent rated the *resources* and s*ystems of accountability* factors a 7, their most influential factors, while they rated the *prior setting of expectations with the supervisor* a low 1. The *systems of accountability* were the most influential factor among all the participants/respondents, while the least influential factors differed for each country.

The participants/respondents highlighted a few areas where support and further training were required. Regarding further training, two participants/respondents, 1 each from South Africa and Kenya, stated their intentions to enrol for further PhD studies. Two participants/respondents, 1 each from South Africa and Kenya, disclosed that they required analytics training, and highlighted advanced spreadsheet and meta-data, as well as predictive analytics skills, respectively. The Kenyan participants/respondents identified financial support, improved ICT resources and competent human resources as areas where support was required.

Since the participants/respondents had already applied what they had learnt, they disclosed the support which they had received. Three participants/respondents, 2 South Africans and 1 German, highlighted that their subordinates, as well as team support, enabled them to apply what they had learnt. Three participants/respondents, 2 Kenyans and 1 South African, highlighted that *supervisor support* was their major contributing factor. The following extracts refer:

> *"Supervisor's freedom to be innovative."* ***SA-2***.

> *"Work environment support and proper supervision and management by my supervisors. Requirements of the health sector stakeholders and the value they have put on health information management."* ***K-3***.

However, one Kenyan participant/respondent highlighted that *organisational culture*, which is rigid to change, was a major hindrance to the application of their newly gained expertise.

4.6. Findings Level 4: Results

In this level, the researcher evaluates the benefits derived from training, or participation in a development exercise, against costs incurred (Rajeev et al., 2009). This evaluation involves expected and attained benefits, without considering the cost benefit analysis, but rather the participants/respondents' perspectives only, both delayed and immediate assessments.

4.6.1. Delayed evaluation

The delayed evaluation involves the impact indicators and the impact results.

4.6.1.1. Impact indicators

Impact indicators highlight observable signs of change, influenced by the application of what was learnt. The impact indicators were rated on the expectations of future positive results, as well as current positive results. The outcomes are summarised in Figure 4.15. The South African participants/ respondents rated both aspects at 9.3, which suggests very positive expectations and outcomes. The German participant/respondent rated the factors at 7 and 6, respectively, which is just above average.

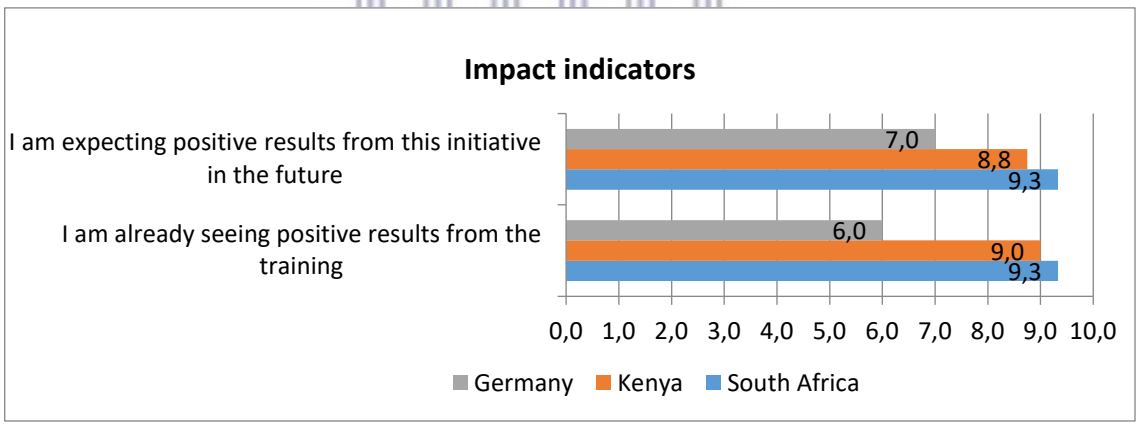

Figure 4.15: Impact indicators

The participants/respondents conveyed that they had started to experience positive changes in their work place. The South African participants/respondents reported improvements in customer service, information management, financial savings and personal developments, as per the following extract:

> *"Less patient complaints, more patient complements and financial savings on overall institutional budget."* ***SA-1***.

This participant/respondent also noted having observed a positive impact on the organisational culture. The Kenyan participants/respondents highlighted improved use of information, improved competences and effectiveness, as per the following extracts:

> "*Improving quality Information Management and use of data for decision making… I feel satisfied with the current results."* ***K-1***.

> *"I have more stakeholders within the Ministry of Health requesting consultation and support from me. I personally feel great."* ***K-4***.

The latter extract was submitted to highlight the impact experienced since participation in the programme. Participant/respondent ***K-3*** earned a promotion, as a result of participation in the programme, and participant/respondent ***K-4*** divulged that attempts at improving the organisational culture, to be more receptive to change, were in progress. The German participant/respondent did not have much to add, but highlighted the successful use of business intelligence tools.

The following extracts of the participants/respondents are examples that highlight some of their achievements, or accomplishments attained, as a result of applying what they had learnt.

> *"My organization won the quality awards 18 months in a row, the quality award system has been stopped but we still apply the principles."* ***SA-1***.

> *"Designed some tools for data capturing."* ***SA-2***.

> *"I came up with a frame for data quality indicators in the rare disease field."* ***G-1***.

> "*My contribution to the results based project is very much appreciated by managers and also by the county teams."* ***K-2***.

> "*Various publications, many policy briefs and different health products or performance reports."* ***K-3***.

"Running medical certification and Use ICD10 national through mentorship… Improved mortality statistics… national coordination of major survey as quality assurance and setting up technology Systems in my department." ***K-4***.

At the time of this current evaluation, the participants/respondents claimed to have experienced overall positive outcomes, to a certain extent, and expressed satisfaction on their progress. Some of the participants stated their expected outcomes, as follows:

"I would like to see the systems implemented on a much wider scale in healthcare in the country." ***SA-1***.

"Win confidence of managers to fully use data for decision making." ***K-1.***

"Implement health IT in my project. This is through a web portal to pull data from DHIS for the facilities implementing Results based financing project in Kenya." ***K-2***.

"Higher policy making position and more publications." ***K-3***.

"High number of peers imparted with knowledge and competences in health information skills and competences." ***K-4***.

4.6.1.2. Impact results

Impact results refer to the success of the outcomes achieved. The results were rated according to the programme's impact on the organisation's mission, and profitability, as well as the overall positive impact on the organisation. The summary of the results are illustrated in Figure 4.16. The Kenyans submitted the highest average ratings of 8.3, 8 and 9, while the German conferred the lowest ratings of 5, 2 and 5 for the three factors, respectively. It was duly noted that the participants/respondents were employed in non-profit-making organisations, and probably had diverse understandings of profitability. The Kenyans submitted fairly high positive ratings, while the South Africans' ratings were above average,

across the factors, which translates to considerably desirable outcomes. However, the German participant/respondent's ratings were average for two factors, and very low for profitability, which suggests limited impact.

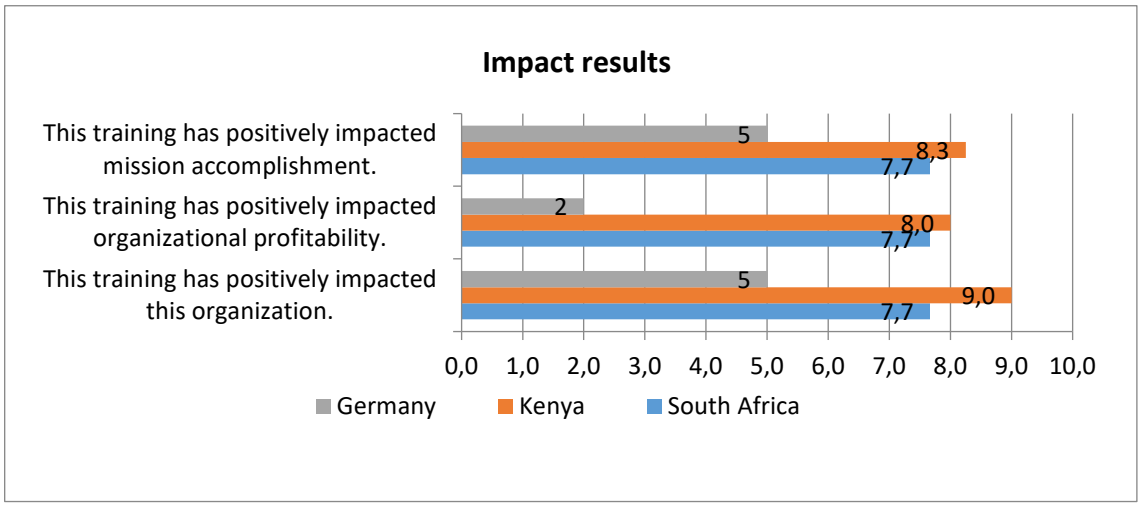

Figure 4.16: Impact results

To further understand which areas were impacted, the participants/respondents were requested to select from the following list of factors: *increased productivity*, *improved quality*, *increased personal confidence*, *increased customer satisfaction*, *stronger relationships with my colleagues*, *more respect from my peers*, and *better organisation in my work*. A summary of the results is illustrated in Table 4.3. Most of the South African participants/respondents selected all the factors, except one, who omitted *stronger relationships with my colleagues*. The German participant/respondent selected most of the factors, except *increased productivity*, *customer satisfaction* and *better organisation in my work*. Most of the Kenyan participants/respondents selected all the factors, except one, who omitted *more respect from peers*. The outcomes in Kenya and South Africa were very positive, and fairly average in Germany.

Table 4.3: Summary of the results

List of factors	South Africa (N=3)		Germany (N=1)		Kenya (N=4)	
	Yes	No	Yes	No	Yes	No
Increased productivity	3	-	-	1	4	-
Improved quality	3	-	1	-	4	-

Increased personal confidence	3	-	1	-	4	-
Increased customer satisfaction	3	-	-	1	4	-
Stronger relationships with my colleagues	2	1	1	-	4	-
More respect from my peers	3	-	1	-	3	1
Better organisation in my work	3	-	-	1	4	-

All the participants/respondents confirmed that applying what they had learnt from the programme had a positive impact on their organisations, as confirmed in the following extracts:

> *"Positive impact especially with the organizational culture."* ***SA-1***.

> *"The organization mainly deals with data management and data systems to obtain results for reporting to funders. This means with this training and knowledge obtained, I have participated in meetings to review data systems."* ***SA-2***.

> *"Better information, better processes."* ***G-1***.

> *"Improved tracking of performance in all program areas… Managers appreciating quality of data… Appropriate packaging of data."* ***K-1***.

> *"My unit deals with health financing issues and currently we are implementing a results-based financing and my training has added value to the performance of the project."* ***K-2***.

> *"Improved effectiveness and efficiency… Improved products for decision making."* ***K-3***.

Lastly, while some of the participants/respondents did not agree that the applyication of what they had learnt from the programme, contributed to the mission of their organisations, those who did, articulated the following:

> *"Yes, each department was requested to write their own strategic plan with a goals and objectives and this helped with proactive thinking and quality deliverables in their departments."* ***SA-1***.

"Yes-our mission is to improve access to quality health care... This can only be achieved with proper information systems of which I am a part." ***SA-2***.

"The mission is patient centred healthcare for all and I feel I have contributed to this by implementing what I have learnt to make the patients experience of care better." ***SA-3***.

"Yes, due to better communication, better processes and good BI – tool." ***G-1***.

"Yes, Health information is one of the health pillars and this training has value addition in ensuring that management of health information is at its greatest pick. My initiatives have improved production of different health products that acts as references and baseline information. Kenyan health information is improved and is at its best." ***K-3***.

Most of the participants/respondents stated that the programme's influence contributed towards their organisational mission.

4.6.2. Immediate evaluation

The immediate evaluation involved the *expected results*.

4.6.2.1. Expected results

Considering that participants/respondents might have completed the programme recently, or were at an advanced level of completion, their *expected results* are discussed in this section. The participants/respondents were asked to highlight the areas where they expected to experience positive results, influenced by applying what they had acquired in the programme. The results are illustrated in Table 4.4. The participants were requested select from the following aspects increased productivity, improved quality, increased customer satisfaction, stronger relationships, more respect from peers and better work organisation. The South African participant selected all factors and most of the Tanzanians selected all except one participant did not expect improved respect from peers and stronger relationships.

Table 4.4: Expected results

List of factors	South Africa (N=1)		Tanzania (N=3)	
	Yes	No	Yes	No
Increased productivity	1	-	3	-
Improved quality	1	-	3	-
Increased personal confidence	1	-	3	-
Increased customer satisfaction	1	-	3	-
Stronger relationships with my colleagues	1	-	2	1
More respect from my peers	1	-	2	1
Better organization in my work	1	-	3	-

The participants/respondents had various and different expectations, due to participation in the programme. Some of the participants had *service delivery improvement* expectations, while others were more interested in *personal development*. The following extracts refer:

> *"Improved service delivery… Staff and customer satisfaction… Decreased complaints."* ***SA-4***.

> *"To be categorized as a professional in HIM specialist, more confident in my work and knowledge sharing to my subordinates."* ***T-1.***

> *"To improve data quality management, to ensure the intercultural management, to ensure the privacy of the health information management and to raise the awareness of data quality."* ***T-2***.

> *"Personally… To be a specialist in the area of the health information system and to provide the chance so as develop the HIM system. Institutions - To insist management the essence of the knowledge I have and the applying in the hospital setting."* ***T-3***.

Lastly, the participants highlighted areas they expected to impact through applying what they learnt from the program. The participants expected to improved information management, improve leadership and improve customer satisfaction. The participants had the following to say;

"Improved Communication, leadership and interpersonal relationships." ***SA-4***.

"…hope to reduce patients waiting time and improved staff morale." ***SA-4***.

"My institution will be reporting on time, improved HIM and my income will also be improved." ***T-1***.

"To ensure the intercultural management, to ensure the privacy of the health information management and to raise the awareness of data quality." ***T-2***.

"Managing and maintain the hospital system and provided the chance to contribute as personnel who will enhance the training." ***T-3***.

4.7. Conclusion

In conclusion, most of the participants/respondents, enrolled in the programme, were HIM professionals, targeted for the HIM programme admissions. In addition, there was diversity in their professional backgrounds. At the *reaction level* of the evaluation, the participants/respondents displayed a positive acceptance of the programme. At the *learning level*, most the participants/respondents were keen on information systems and ICT application programmes. They also mentioned leadership and management related content, but to a lesser degree than information systems. However, there was overall positive customer satisfaction with the programme. At *behaviour level*, the delayed evaluation participants/respondents applied some of the competences they had learnt, with various resources challenges. They reported various support mechanisms, as either lacking, or enabling, with regards to implementing what they had learnt from the programme. The immediate evaluation participants/respondents pledged to implement what they had learnt from the programme, while some had already incorporated their new competences in their jobs. At *results level*, the delayed evaluation participants/respondents reported various successful accomplishments and rewards from the application of what they had learnt in the programme. The results were mostly positive, with expectations of further improvements. The immediate group expected positive outcomes from the application of what they had learnt in the programme. A summary of the findings is presented in Table 4.5 below.

Table 4.5: Results Summary

Country	Level 1: Reaction	Level 2: Learning	Level 3: Behaviour	Level 4: Results
South Africa	Found the program very relevant and applicable	Most of the content was relevant.	Applied relevant knowledge attained from the program	Improved customer services, processes and work/collegial relations
	High customer satisfaction	They found the program highly significant for their professional developing competences	IT infrastructure, human and financial resources limitations were a major challenge	Service excellence awards, professional recognition and job offers
	They found the program highly engaging	Suggested addition of basic programming	Most motivating factor was systems of accountability and resources availability and least was incentives	
Germany	Found the program very relevant	Part of the content was not relevant, but the participant changed jobs	Applied limited knowledge attained from the program	Professional change and attained higher qualification
	Moderately satisfied	They found the program significant	Most motivating factor was systems of accountability and least was incentives and supervisor support	
Kenya	Found the program very relevant and applicable	Found most of the content relevant and had developed some essential competences	Applied relevant knowledge attained from the program	Improved processes, service delivery and reporting
	High customer satisfaction	Found it lacking in Statistical Analysis, programming and Epidemiology content	IT infrastructure, human and financial resources limitations were a major challenge	Promotion and professional recognition
			Most motivating factor was systems of accountability and support & encouragement and least was incentives and supervisor support	
Tanzania	Found the program highly engaging	Found most of the content relevant and essential for professional development	N/A	Expected improved customer service, collegial relations, professional recognition and processes
	High customer satisfaction	Found it lacking in Epidemiology content and suggested mentoring or internships		
	Found the program very relevant	Expected, IT infrastructure, human and financial resources limitations to be a major challenge		

CHAPTER FIVE

DISCUSSION OF THE RESULTS

5.1. Introduction

In this chapter, the researcher discusses the results, in relation to the literature, to derive meaningful clarification from the data. The model, results and literature are consolidated, to engage the aim and objectives of the study.

5.2. Demographics

In this current study, the researcher aimed to evaluate the HIM programme in four different countries, with the participants/respondents, inherently categorized into these countries. In Chapter 3 (Research settings), the researcher provided a brief discussion on some health dynamics, relative to Germany, South Africa, Tanzania, and Kenya, as well as the value that the HIM programme could offer. It was established that the need for HIM exists in all four countries, for similar and different reasons, subject to factors that affect healthcare, characteristic of each country. Additionally, undeniable competence needs were evident, namely, administration, leadership, multicultural, and ICT skills, which the HIM programme addresses, to improve health information management in the respective countries. However, relevant training, or development of these competencies is essential for personnel, who are responsible for health information management,.

Human capital is crucial for economic growth, while education and health are vital factors of productivity (Bloom, Canning, & Sevilla, 2004). In national economics, productivity refers to activities that facilitate the flow of services and products of commercial value, which affect the gross domestic product [GDP] (Fernández-Ballesteros, Zamarrón, Díez-Nicolás, López-Bravo, Molina, & Schettini, 2011). The age of a population also affects productivity, highlighting the importance of age in economic growth (Börsch-Supan & Weiss, 2016). Consequently, the participants/respondents' ages were important for long-term productivity, as well as their education and competences, to benefit the organisations they served, and the beneficiaries of their services.

The participants/respondents' ages ranged from 30 to 49 years, with six under forty, and six over forty years of age, which implied that they were all in the productive age group, as the generally recognised productive working life of an individual is between sixteen years and sixty-four years of age (Vogel, Ludwig, & Borsch-Supan, 2015). The age factor cannot be ignored in professional development. Gordon (2017, p. 32) states, "The emphasis for younger adults is on growth and development, while a focus on retention and minimizing decline spans the progression from middle age to old age." Some cognitive capabilities tend to decline at advanced age; however, this can be compensated for through experience, tacit knowledge, wisdom and professional networks, which come with experience and longevity in the field of practice (Skirbekk, 2004). However, productivity cannot be determined by age only; it is inherent that values, ambition and priorities, evolve with age (Gordon, 2017). Therefore, the researcher is of the opinion that it is important to develop people with professional growth potential and priorities that are aligned with the organisation's aims and objectives.

The HIM profession is diverse, applied in various types of organisations, with different job titles (Wing & Langelier, 2004). This was evident in this current study, regarding the programmes' participants, who were affiliated to eight different professional titles. Most of the participants' professional backgrounds were relatable to health organisations. The participants' employers were from government, or ministries of health, healthcare facilities, academic institutions,as well as non-governmental organisations, reflecting the programmes' prerequisite that the programme participants should to be affiliated with health related organisations. The list of professions included health information officers, health information manager/specialists, computer system/data analysts, M&E advisors, managing directors, pharmacists, primary health care facility managers, and teachers, with the teaching profession being the least inclined towards health.

Individuals with at least two years' work experience in a health related environment, without age capping, were targeted for the HIM programme. Most of the participants/repondents, who responded in this current study, were professionals from the healthcare field, and aged between 30 and 49 years, in the productive age group, with potential to grow and develop; however, they displayed different aspirations towards development. Some of the mature participants/respondents were keen on progression to PhD studies, while the younger

participants/respondents were more inclined to professional development; however, most of them were eager to develop competences in their current professions.

5.3. Programme relevance

There was strong consensus from all the participants/respondents on the relevance of the programme, regarding their professional development in all countries. At reaction level, which assesses the participants/respondents' perceptions of the programme (Kirkpatrick, 1979), the majority posted high ratings for the programme's relevance, stating that most of the content was applicable in their organisations, except the Germans, who also had the least number of responders. Most participants/respondents listed specific content they considered relevant, mainly health information systems and management biases. Some mentioned, or added multicultural, leadership and research methods, in general, without mentioning any specific content. The same content and preferences were highlighted as the most recalled at learning level. One participant/respondent noted the following, in reference to knowledge acquired at learning level (Praslova, 2010):

> *"This course gave me a broader perspective of health Information Management. It underscored the importance of accurate data for decision making in all areas of health."* ***SA-2***

5.3.1. ICT and Health Information Management

Information systems and technology applications in healthcare were considered the most relevant content by all the participants/respondents. Zeng et al. (2009) assert that, with the overlap of HIT and HIM, the roles of HIM professionals need to evolve to accommodate some relevant ICT capabilities. In addition, Wing and Langelier (2004) highlight that HIM professionals are expected to be adaptable to change, possess technically skills, data analysis competences, and ICT applications skills. The following direct quotation refers:

> *"I started documentation improvement strategies in my institution as we have just moved into paperless records of which we started with outpatients' clinics."* ***T-1***

The participant/respondent considered the knowledge acquired from the programme beneficial and timely. Therefore, it was relevant and practical for this individual, which

enabled behaviour change, and is level three of the model (Praslova, 2010). The competences had an organisational impact in this case, contributing towards changes in practice, in line with organisational goals.

Application and advances of information technology in health information management demand constant development of information technology skills among HIM professionals (Brodnik & Houser, 2009). One participant/respondent remarked the following:

> *The health management information was adequate but the health IT information needs to be strengthened in order to have more hands on sessions alongside the theory sessions i.e. developing skills. Again there is need for more data management (data analysis and interpretation) sessions." K-2*

This statement signifies the importance of ICT related skills. Mithas et al. (2011) states that, regardless of the reservations about the value of ICT systems in healthcare, competent and functional systems provide quality information, which has a positive impact on customer satisfaction, process and performance management. Some of the participants were positive about customer satisfaction, improved processes, and performance at level four of the evaluation, because the competences, acquired from the programme, could be applied in their jobs. Preference for different ICT content reflected the demands and applications of HIM for different professional roles. ICT infrastructure challenges in developing countries did not discourage the participants/ respondents' preference for ICT content, which highlights the potential value of information technology in information management.

5.3.2. Leadership and Management

Multicultural leadership and management content was highlighted to a lesser degree than ICT related content. Bradley et al. (2015) note that, despite the growing focus on strengthening health systems, the management role has received limited attention. Yet, health institutions, depending on the size, are diverse by nature, in terms of human resources, professionals, multicultural, organisational cultures, as well as other resources, including financial and technical. In addition, they require leadership and management competences to enable the coordination of all the resources towards their

organisational vision (Al-Sawai, 2013). Most of the participants were favourably disposed to more practical concepts, such as programming and analytic tools, with passive reference to management and leadership aspects. Although the participants/respondents did not mention management, explicitly, its qualities are embedded in most of the programme content. The programme is, in any case, focused on health management, health information management, and business administration.

Participant/respondent SA-4 had a preference for management and leadership, stating that the overall expectation was to *"Improve communication in a working environment and improve management and leadership"* by applying what they had learnt from the programme. This participant/respondent preferred human resources, personnel management, and intercultural content above ICT related content, as opposed to the others, which highlights this participant/respondent's professional position as either human resources related, or with authority over subordinates. Although the participants/respondents stated that all content was relevant, they were vague about the management concepts they considered useful. However, the World Health Organisation (WHO) values management as an essential component of health service delivery (Bradley et al., 2015).

The term, management, is pervasive, and applied in various scenarios, including authority, leadership, as well as the coordination of organisational resources (Engwall, Kipping, & Üsdiken, 2016). This might explain the vagueness in this current study, as there are various ways of distinguishing management, namely, the technical aspect of coordinating resources, the authority view, as well as the leadership orientation role. For example, participant/respondent K-2 highlighted that *"…am applying health information management skills, systems design, health financing, and monitoring and evaluation skills in managing the current project"*, which highlights the coordination of resources. However, participants/respondents T-1 and SA-4 referred to management and leadership in an authoritative context. Participant/respondent SA-4 suggested; "Improve communication in a working environment and improve management and leadership", which, most likely, referred to people management aspects.

The participants/respondents were also equally vague about leadership because they mentioned it as a part of the significant content, without disclosing specific content.

However, they displayed leadership traits, by transferring learnt competences to behaviour; thereby impacting results. Participant/respondent K-4 indicated that the organisation intended to change management strategies, to improve the orientation of the organisation. Participant/respondent SA-1 stated, "*My organization won the quality awards 18 months in a row, the quality award system has been stopped, but we still apply the principles",* a significant outcome, which the participant/respondent facilitated. Overall, these scenarios concur with the definition of leadership, being a method of communicating influence in a setting, with others acknowledging one as the head, in an attempt to attain organisational goals (Silva, 2016).

Regarding leadership competency development, the ratings of the immediate participants/respondents indicated improvement, while those of the delayed participants/respondents, were fairly high. The participants/respondents applied some of the components, thereby highlighting some knowledge gains and behavioural changes. However, good leadership qualities require continuous education, personal development, experience, and training (Sharma & Jain, 2013). The participants/respondents emphasised this fact by assuming that there was more to learn about HIM. Some regarded engagement with their lecturers, and participation in development initiatives, as beneficial to improve their competences. Participant/respondent T-2 stated that the *"Availability of online programme on Health information advancement… Conference- and workshops-based changes in Technology"* would be practical methods of continuous learning.

The participants/respondents mentioned multicultural and communication competences, as vaguely as leadership and management. However, participant/respondent SA-4, who was keen on management and leadership, highlighted that "*Human resources management, Personal management, intercultural concepts, and leadership"* were the most meaningful content at the learning level. The HIM programme, therefore, concurred with observations by Deardorff (2011) that multicultural competences could be propagated to programme content and the internationalising of universities. The programme was both an international venture, and a facilitator of intercultural content. The participants/respondents stated that applying what they had learnt would "Improve communication in a working environment…", which confirmed the expected transition from learning to behaviour change, through the application of acquired knowledge, for

a positive impact, and result. It is also crucial to understand cultural backgrounds, which influence the behaviour of leaders, as well as followers, for the development of appropriate leadership training material (Offerman & Hellman, 1997) that match the targeted participants.

There was a suggestion of internships, which was impractical, as most of the participants/respondents were employed, and had to take time off work to attend classes. The participants/respondents also considered that the lack of an HIM undergraduate programme was a challenge, which could explain their insistence on practical, as well as technical application preferences and requests. However, this does not imply that management and leadership content is not essential but reveals the skills that participants/respondents need for more effective practice.

5.3.3. Research

Some participants highlighted research and research methods as important content. Research can be classified in two contexts, basic and applied research (Brodnik & Houser, 2009). Basic research focuses on the academic deliberation of problems, while applied research exploits the theory for applicable solutions in practice (Brodnik & Houser, 2009). Both traits of research constructs were of interest to the participants/respondents, as some of them harboured ambitions of attaining Doctoral degrees (PhD), while others wanted to venture into academic settings and lecturing.

Participant/respondent K-3 stated the following about the areas in which the competences they had acquired from the programme would be applied: *"….applied in various publications, development of the various policy briefs and instruments for health system management ...*" Therefore, the research competences gained from the programme could enable the production of relevant, practical and well-researched publications. The participants/respondents exhibited the transition of learning to behaviour change, and results, as participant K-3 also expressed the following regarding future endeavours: *"I have plans to further my studies (PhD) but need financial support. Plans to join academia as a lecturer to mentor and model others/ share the knowledge with practical experiences"*. The participants/respondents from South Africa and Tanzania also held aspirations for PhD studies and academic positions. In addition, the Tanzanian academic aspirants expressed the sentiments of growing the HIM

profession, as was evident from participant T-3's comments, "…*selecting us as the skilled personnel so as to train the undergraduate student by providing knowledge we have…"*, advocating for the introduction of the HIM programme at undergraduate level.

5.4. Academic related challenges

Certain academic and academic support-related dynamics influence learning. In this context, the term, *academic*, constitutes the learning-related components of the programme, while *academic support* comprises administration-related elements. Regarding academic components, the participants/respondents highlighted that the programme lacked epidemiology, statistical analysis, and programming content.

At the learning level, the Kenyan and Tanzanian participants/respondents noted that the programme lacked epidemiology, programming, and statistical applications, while the South Africans highlighted that it lacked statistical applications, and programming. The participants/respondents noted that the lack of this content affected the research modules, as well as applying what they had learnt. This, potentially, affects the behaviour level, making it impossible to apply some of the learnt competences, without some of the skills, or knowledge.

Epidemiology is a component of public health that monitors human diseases, patterns, and the determinants which precede them, relative to time, locations, and the affected populace (Houser et al., 2009). It is considered essential, to understand the connections between diseases and affected people, the environment, and the health of the population, who are in the affected areas (Gulis & Fujino, 2015). Houser et al. (2009, p. 2) assert, "As data managers, HIM professionals are involved in many types of epidemiological studies, including studies on infectious diseases, cancer, environmental factors, nutritional factors, chronic diseases, and health services", highlighting the importance of epidemiology content in health information management, and that the lack of it in the MHIM, disadvantaged some of the participants/respondents. However, it appears that the epidemiology content preference was institutional, or faculty/department inclined. For example, the South African participants/respondents were registered with the Information Systems (IS) Department, under the Economics and Management Studies (EMS) Faculty, while the Tanzanians were registered with the Public Health Department, in an institute of Applied Science. The teaching

and research predispositions of the two institutions, most likely, would have been inclined towards areas of specialisation. Participant/respondent T-1 stated: "The programme is missing an Epidemiology Module, which makes it difficult to write our dissertation", highlighting the area of content they considered to be lacking. Other participants mentioned it, without stating, explicitly, which areas required it. Regardless, epidemiology is an essential component of health information management.

Data analysis and management are some of the essential competences of health information management (Houser et al., 2009; Bates et al., 2014). Data and information growth in health provides the potential for big data concepts that could be applied in healthcare, for risk assessment, predictive analysis, personalised care, and research (Cano, Tenyi, Vela, Miralles, & Roca, 2017). To adopt ICT in health information, HIM professionals need to acquire some ICT related skills. Other programmes in HIM offer coding/programming, but only at undergraduate level (Safian, 2012). Considering that the institutions involved do not offer the HIM programmes at undergraduate level, it would benefit the participants/respondents, to offer the content at a basic level. Incorporating the content will enhance the programme's palpability in health information management, in its broad-spectrum, and areas of need for professionals.

There was no consensus on which content was less relevant to their professions. The relevance of content is subjective to professional inclination, evident in participant K-2's comment, "*Not really although information of procurement is important am not currently involved in procurement issues*". The programme offers content that caters to all participants/respondents, in varying degrees. It covers content from various fields of studies, health and business studies, which qualifies it for interdisciplinary programmes, according to Millar (2016). Interdisciplinary experiences equip students with knowledge from various fields, which positions them to engage in dynamic real-world challenges (Millar, 2016). Interdisciplinary approaches to information sharing and the understanding of the roles of other professions, enhance professionalism, interpersonal, and communication skills (Lapkin, Levett-Jones, & Gilligan, 2013).

Despite rating the programme's relevance lowly, participant/respondent G-1 stated: "*I learned new things, was able to foster my knowledge, had contact with people from different areas of work and multicultural and a degree in MSc*". This confirms the critic's observations

that the reaction level tends to have a weak link with the other three levels (Praslova, 2010). The participants/respondents deemed the programme less relevant to work; however, they still appreciated it. The structure of the programme equipped the participants/respondents with capabilities that extended beyond their professional roles, thereby, enhancing the understanding and appreciation of contributions from other professions, alongside theirs. Health management leaders are expected to coordinate essential resources, the health organization's diversity, and their subcultures, towards the achievement of the organisational goals (Al-Sawai, 2013). Therefore, multi-competences to augment leadership skills are important. Interdisciplinary competences equip multidisciplinary teams to apply different competences for interventions (Walsham, 2013).

The participants/respondents mentioned various academic supporting factors. Postgraduate studies tend to attract mature, working, and part-time students (Abiddin & Ismail, 2011), who tend to struggle to balance work and study commitments, because of inadequate administrative support, supervision, rigid academic, and programme structures (Abiddin & Ismail, 2011). Participant/respondent T-2 summed up the major challenges by stating, *"They should allocate enough time in modules, provide funds for research study and provide feedback on time."* The majority of the participants/respondents, from all countries, considered the time allocated for the programme to be limited and had various suggestions. Some participants/respondents were of the opinion that the programme should be offered as a fulltime course, while others suggested that the month-long block-classes be extended by two-to-four weeks. Part-Time postgraduate students struggle to complete in time, due to the allocated timeframes of programmes (Abiddin & Ismail, 2011). This predicament can be resolved by engaging employers and institutions of higher learning, to find negotiable compromises for the benefit of the students (Burrow et al., 2016). However, this is only feasible in employer sanctioned studies, which leaves personal development students in a predicament.

The other main challenge was related to the research module and the administration thereof. The participants/respondents from Kenya and Tanzania were dissatisfied with various aspects, especially the administration of the module. Kenyan participant K-1 noted: *"Thesis writing was country-specific; however, it should have been standardized for all candidates, regardless of the country, and the thesis supervisors should be from any country, not specific to the student's own country, to allow students to benefit from diversity"*. However, Tanzanian

participant/respondent K-SA stated: *"I suggest research development topic should be taught by lecturers from three universities so that the student should understand the guidelines of their university."* These two approaches are contradictory, which highlights the lack of a standardised approach to the module. The Tanzanian students argued that this challenge affected their completion, negatively, because they had to adjust their projects to their native institute's requirements.

There were a few students who expressed that tuition sponsorship/funding would be appreciated. However, this was not a common issue. Participant SA-3 noted: *"I was partly funded, and it would have been nice to cover all financial aspects"*. Others highlighted the need for funding in specific areas, such as research. Funding and administration components affected the reaction level more; however, they could impact learning, as well. The reaction and learning levels are considered internal evaluation aspects of the programme, which affect the acquisition of knowledge (Praslova, 2010). Although the participants/respondents perceived these aspects as challenges, they did not affect their programme approval, which was positive. Overall, the participants/respondents expressed positive customer satisfaction at the reaction level, which assesses their programme approval or appreciation (Kirkpatrick, 1959).

5.5. Success Factors

Various factors, outside the programme, contributed positively to the application of MHIM concepts by the participants/respondents. The delayed evaluation participants/respondents rated factors that motivated them to apply what they had learnt. Systems of accountability at work-places were rated the highest influencing factor by all the participants/respondents across all countries. The South African participants/respondents rated enabling resource availability fairly high, next to systems of accountability. They also had support and encouragement, as well as performance support, decently rated, which coincides with their above-average rating of supervisors' support, before engaging in the programme. This is reflected in participant/respondent SA-2's comments of having *"Supervisor's freedom to be innovative"*, and participant SA-1's comments on how they implemented what they had learnt, *"Implemented it individually and acceptance of change by my subordinates"*, to highlight the support they received. However, they had low ratings on rewards and incentives, representing the lowest impact on the application of competences.

The German participant/respondent highlighted that s/he had adequate resources to enable him/her to apply what s/he had learnt, with fair rewards. S/he also highlighted having a supporting team, being given time, and trusted to incorporate in the work-place what s/he had learnt in the programme. S/he rated all other supporting factors below average, and supervisor support, as well as incentives, very modestly. However, the participant/respondent highlighted that s/he had support from his/her previous employer, which explains the low incentives and supervisor support because the new employer was not involved in the participant/respondent's registration in the programme. In addition, it explains the modest programme relevance rating at reaction level, as well.

The Kenyan participants/respondents rated performance support and encouragement fairly high, but average on resources availability. They, however, rated all other factors below average, including incentives and supervisor support factors. Participant/respondent K-4 emphasised: *"There is a need for more financial support or resource.…… Organizational culture change to a change-oriented bias… Granted more opportunities to express and apply my newly acquired skills and expertise"*. However, some participants/respondents had adequate support, as noted by participant/respondent K-3: *"Work environment support and proper supervision and management by my supervisors…"*. The participants/respondents who seemed to benefit the most were the Kenyans, with reported promotion and departmental changes, due to participation in the programme. The South African participants/respondents also highlighted improved competences, with one claiming increased value in the job market.

The immediate evaluation participants/respondents expressed their commitment to applying what they had learnt, while some had already started to apply some of the concepts. This was evident in participant/respondent T-3's comments, *"I am committed to applying what I have learnt and I trained students on the Hospital information system short course, this course is the collaboration between HNU and MUHAS in the area of ICT"*. The participants/respondents also expressed confidence in their capabilities after the programme, which is evident in the high ratings on confidence-related factors. However, they highlighted inadequate resources and skills, as potential challenges to fully applying what they had learnt, with participant/respondent T-1 stating: *"Shortage of professionals on health information across the country… Little awareness of the advancement of technology… Few ICT-based facilities and lack of universities that offer a bachelor in HIM"*. The reference to the lack of an undergraduate programme in HIM highlights the importance of the programme, as

identified by the participants/respondents. The Tanzanians suggested the full implementation of the programme at each university. Participant/respondent SA-4 had a different view, stating: *"I feel that we do not have adequate resources, does not give me a chance to apply it fully, but I am committed to use the available resources"*, to some of the delayed evaluation South African participants/respondents, who stated that they did not have any problems with applying what they had learnt, which highlights a maldistribution of resources in the same country.

The success factors in this current study are the outcomes of behaviour changes, which are observed at the results level, as outcomes of the learning, or training. Praslova (2010) states that organisational and economic factors tend to affect behaviour and the outcomes of the results levels because they are external evaluation components. The delayed participants/respondents highlighted positive behaviour changes and results. They stated mostly that they had minimal challenges with applying the knowledge that they had acquired from the programme, but encountered supporting and infrastructure resource challenges. The immediate evaluation participants/respondents articulated anticipated behaviour changes and results because they were still busy with their studies; however, some of them had already started to apply what they had learnt, with positive outcomes.

5.6. Customer Satisfaction

Customer satisfaction was high, which further augments and attests to the positive relevance and applicability ratings of the programme. The participants/respondents from the delayed group experienced various successful outcomes, while the immediate cohort had positive expectations. The delayed evaluation participants/respondents K-2 and SA-1 stated, respectively, *"My contribution to the results-based project is very much appreciated by managers and also by the county teams"* and *"Good organisational culture… Good teamwork and systems approach in an organisation"*, to highlight their impact in their organisations, as a result of competences acquired from the programme. The participants/respondents considered the programme practical and applicable, including the German, apparent in high ratings on level 3 application rating questions. Additionally, the participants/respondents considered the programme to be time-worthy and recommendable to peers, judging by their relatively high ratings of those factors. The participants/respondents

highlighted improvements in communications, use of information in decision making, client satisfaction, and their capabilities, which enhanced their productivity.

The immediate group was confident that applying the competences gained from the programme would have a positive impact, with others already experiencing value from their capabilities. Participant/respondent T-1 noted: *"I started documentation improvement strategies in my institution as we have just moved into paperless records of which we started with out-patients clinics"* as proof that they had already started to apply competences they had learnt in the programme. Additionally, participant/respondent T-3 stated: *"In the working setting I have been selected to several areas to present the knowledge of the HIS, which I received, to make them understand the concept"*. This participant/respondent had facilitated short HIM training programmes, as well. The participants/respondents stated that they were confident about applying competences they had learnt in the programme. They also expected improved service delivery, data management, information security, data usage, and personal development. The improvements and expected outcomes across participants/respondents were relatively similar, except for the German participant/respondent, who mainly highlighted personal development factors.

Although there was, reportedly, a weak link, or no link between reaction level and the other levels (Praslova, 2010; Yardley & Dornan, 2012), customer satisfaction could be a motivating factor for most participants/respondents to apply what they had learnt from programmes or training, alongside systems of accountability, and the relevance of the programme. The link might not be strong, but factors like "learning experience, its organisation, presentation, content, teaching methods, and aspects of the instructional organisation, materials, quality of instruction", that are assessed at reaction level (Yardley & Dornan, 2012, p. 101) could contribute to the learning experience and knowledge acquisition. Therefore, the reaction level impact on the learning level, influences behaviour and results, to a certain extent.

5.7. Recommendations

This research contributes to knowledge, regarding the importance and significance of HIM programmes. It highlights the important competences that are essential for the HIM profession, to facilitate the creation of effective administrative teams in Healthcare. It also contributes insights to academic programme evaluations, which are essential for the

development of programmes that are relevant, and meet the practical needs of people, who are interested in them.

The researcher in this current study, offers the following recommendations:

1. Introduction of epidemiology content into the programme, to accommodate individuals who lack clinical background or qualifications. Some of the participants/respondents in this current study noted that the lack of epidemiology knowledge, impeded their research activities, with some suggesting that it was essential in practice, as well.
2. Standardise procedures for research, which are acceptable to all institutions, so that no student is disadvantaged in any way, both administratively, and in learning.

Strongly consider the implementation of an undergraduate programme in HIM, to increase the number of qualified HIM professionals, with technical competences that cannot be fitted into a Master's programme, for example, programming and statistical analysis applications.

5.8. Conclusion

The programme proved to be more relevant to participants/respondents from low to middle-income countries, compared to a developed economy. The participant from Germany was the least interested to participate in the evaluation, which might misconstrue the argument to an extent. Overall, the programme was generally valued by a majority of the participants/ respondents who engaged, while ICT-related content and IT application in Health information management were the most preferred. The participants/respondents were not very explicit on intercultural, leadership and management concepts. However, there is room for improvement through the addition of epidemiology, statistical analysis, and coding/programming content, to improve participants/respondents' satisfaction. Some of the content that the participants/respondents recommended is attainable through short courses because it is too practical, or hands-on, for a programme aimed at developing leadership and management competences.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1. Summary

This current study was an evaluation of an academic programme; a Masters in Health information Management. The programme was conducted across four institutions of learning, UWC, HNU, KeMU and MUHAS, from South Africa, Germany, Kenya and Tanzania, respectively. The Kirkpatrick Model of Evaluation was employed for a theoretic base. A survey research approach, with both qualitative and quantitative qualities, was used because the participants/respondents were not easily accessible for in-depth research methods; however, they were not sufficient for a quantitative study.

The study had the following objectives;

1. To assess the programme's relevance towards the needs of the participants in health information management;

2. To explore and describe the programme's developed competences in leadership, and management, as well as the multicultural competences for healthcare information management; and

3. To explore and describe the most important qualities of a Masters' academic programme in HIM.

6.2. Objective 1

The findings of this current study revealed that most of the participants/respondents, mainly Africa, considered the programme to be highly relevant for their professional development, with the exception of the German. However, it should be noted that only one German subject participated in the evaluation. This participant/respondent had apparently changed companies, and probably his/her professional role, as well, which might explain why most of the competences or knowledge, acquired from the programme, was not considered useful.

The participants/respondents noted that the programme enhanced various competences; however, they mainly highlighted ICT application in health content, which they found useful in practice, as well as in their professions. There is an increased conversion of hardcopy records and documents, to electronic records, or the adoption of ICT platforms for records management that improves accountability, efficiency and transparency in organisations, through the improved manipulation and use of information (Asogwa, 2012). The health industry is not exempted from this, and the role of HIM professionals in information management, positions them at the centre of this transformation (Dorsey et al., 2015). They are responsible for the assimilation of HIT, as well as changes in records management, because of their responsibility for conveying timely, reliable and quality health information (Zeng et al., 2009).

Most of the South African participants/respondents stated that they did not experience any difficulties with implementing the competences, or knowledge, they had acquired from the programme. Their ease of transition from learning level to behaviour change, could be attributed to the availability of resources and support from colleagues. However, the delayed participants/respondents alluded to potential maldistribution of resources as the limitation of resources could compromise the application of competences, they had gained from the programme. The participants/respondents from Kenya reported limited resources, limited skills, and resistance to change, as challenges to the application of competences, learnt from the programme. However, where they could, there were positive outcomes. The Tanzanian participants/respondents considered the programme relevant, and expressed their commitment to apply what they had learnt. Those who had already initiated the application of learnt competences, reported positive outcomes; however, there were also concerns about the limited resources, as well as inadequate skills and support. The German participant /respondent shared limited insights, or reasonable comments.

Subsequently, most of the participants/respondents highlighted that the programme lacked programming and statistical analysis applications content. The Kenyan and Tanzanian participants/respondents commented that epidemiology was missing from the programme, which apparently, was a relevant missing component, essential to some of the participants/respondents' research projects. Not all the participants/respondents regretted the missing components, which, probably, could be attributed to different HIM professional requirements.

6.3. Objective 2

The programme was aimed at improving leadership, management and multicultural communications competences in HIM. These are significant qualities of the Masters programmes, according to some education policies in various academic disciplines, leadership, management and communication (Drennan, 2012). However, the participants/respondents were not very explicit about the development of these competences; however, there were traits of the competences in some of the results, as well as expected results.

The importance of managerial competences in health organisations has intensified, in acknowledgement of the need to apply modern-day practices in health systems (Drennan, 2012). They are essential for the coordination of resources, which are rarely sufficient to achieve an organisations' goal; however, with good management it could be possible to exploit limited means, for considerable outputs (Bradley et al., 2015). Some of the participants/respondents reported that they had an impact on their organisations, through the changes they introduced, which evidently, were positive outcomes at results level, including improved customer satisfaction, organisational or administrative activities and processes, which are traits of good management practices and leadership.

Though the concepts of management and leadership tend to overlap, and are usually presented in consensus, there is an increase in leadership programmes that are separate from management (Bush, 2008). Leadership is considered to be influential behaviour that guides the actions of a group, towards an organisations' goals (Al-Sawai, 2013). While management focuses on coordinating technical factors (including financial, human resources and regulatory), leadership uses soft-skills to influence people, through competences such as, team building, negotiation and communication (Stoller, 2013). Although the participants/ respondents mentioned it sporadically, leadership traits were observed in some of them. Successful outcomes, attained through changes in their organisations, to which some participants/respondents contributed departmental service awards, customer satisfaction and service improvements, are attributes of teamwork from competent leadership.

A comprehensive leadership programme, supposedly, includes a teaching course, mentorship and experience developing prospects, and should provide theory and practical applications of

the aspect (Stoller, 2013). The programme under scrutiny had a teaching module in leadership; however, some of the participants/respondents expressed the need for mentorship, as well as being able to consult with the lecturers for guidance. Leadership development opportunities could be attained at their respective organisations, considering that the programme was offered on a part-time basis, and the participants/respondents were employed at the time. However, the importance of leadership cannot be understated, as the need to coordinate multi-discipline professionals, to fully exploit their capabilities, is crucial for effective healthcare (Ezziane et al., 2012). Leadership is also influenced by context, including cultures inherent to a place, with different leadership styles required for different places, which highlights the importance of intercultural communications (Holt, Bjorklund, & Green, 2009).

Some outcomes of intercultural competences are apparent in appropriate, decent mannerisms and communications, in relevant context (Deardorff, 2011). Besides, it has been imposed by the impact of globalisation, which enables the sharing of knowledge, resources and ease of migration of people (Mason et al., 2016). There are various means of improving cultural communications competences, including intermingling, interactions and taught content. The programme included international exchange, which encouraged face-to-face engagements among the participants/respondents (Arbour et al., 2015). It also provided taught content in intercultural communications, as well, which equipped the participants/respondents with knowledge (Deardorff, 2011; Arbour et al., 2015). However, Deardorff (2011) highlights that it would be more beneficial if intercultural components were imbedded across the programmes, rather than a once-off module.

6.4. Objective 3

The participants considered the Masters in HIM programme to be relatively relevant for the development of competences in health information management. However, it has its own limitations, in terms of the credits and duration of the programme. Masters academic programmes are expected to develop scholars' intellectual skills, including reasoning, analytic, knowledge acquisition, problem solving (Perry et al., 2011), personal and social skills, which include negotiation, motivation and change management (Callen, 2001). Most of these aspects are considered the basics of professional-biased programmes (Teijeiro, Rungo, & Freire, 2013), which are expected to improve leadership, management and

communications, the essential attributes of professional academic programmes (Massimi et al., 2016). Additionally, the programme needs to be interdisciplinary, for scholars to develop multi-discipline team-work skills, as well as be adaptable, and understanding of other professions (Millar, 2016). The MHIM programme covered some of these aspects, comparatively.

However, there are much more specific competences required for health information management, which could be considered fundamental to HIM professions. Knowledge and understanding of these skills could lead to the development of better quality programmes that meet professional requirements (Callen, 2001). In addition to the above-mentioned aspects, a Masters in HIM must include research, ICT, epidemiology and multicultural facets, to augment health information management content, which are discussed in the following paragraphs.

1. **Research** – It is important that HIM professionals are equipped with methodical practices that enable the acquisition or conception of knowledge (Brodnik & Houser, 2009), as it is essential for data collection and analysis in academia, as well as practice (Woolcock, 2007). Research competences are required in most aspects of HIM, both in practice and academia (Brodnik & Houser, 2009). In practice, research attempts to address problems through informed decision-making, while in academia, research concentrates on the theory comprehension of subjects of interest (Brodnik & Houser, 2009). The programme already included a research component, which is a common characteristic of Masters' programmes (Ginevičius & Ginevičienė, 2009).

2. **ICT competences** – HIM is essential for the coordination of data and information, whether in paper, or electronic form (Gibson, Dixon, & Abrams, 2015). The growing use of computing technology in health has lead to the demand for ICT skills in health information (Callen, 2001). Some of the roles that require, or have developed because of ICT, include electronic health records (EHR), data analytics, project management, information privacy, as well as security and data management (Zeng et al., 2009); records management, policies and procedures, information sharing (Gibson et al., 2015); and programming (Callen, 2001). The academic curriculum needs to include some of these competences, depending on the targeted sect of HIM professionals, which could be clinical settings, or other public health organisations.

3. **Epidemiology** –HIM professionals need to understand, classify, code and report on human diseases (Houser et al., 2009). Epidemiology is the science of comprehending diseases that affect people, by studying populations (Gulis & Fujino, 2015), which could be an essential competence that HIM professionals could use in data analysis, especially those in public health organisations. This was not included in the programme; however, some of the scholars required it for their research projects, while others needed it in practice.

4. **Multicultural competences** – Multi-cultural communities are common in modern societies, composed of different ethnicities and races, as well as diverse cultures (Razum & Spallek, 2014; Arbour et al., 2015). There is a need to create an environment that encourages mutual tolerance and understanding of different traditions and backgrounds, in the wake of growing interdependency, which extends globally (Deardorff, 2011). Additionally, the need for cultural competences is compelled by the growth in global interactions, which include the movement of people, for tourism, business, employment, and asylum seeking (De Sousa Santos, 2002). Consequently, it is important to develop professionals, who are capable of working efficiently with diverse people.

6.5. Limitations

The participants/respondents from the least resourced countries, rated the programme relevance higher, and were more participatory. However, this research method did not provide enough depth, to engage this component in isolation and provide conclusive justification, which leaves room for further research, to understand the various HIM needs for different countries. In addition, there was low participation interest from the participants, especially Germany, which limited justifiable comparisons, to assess which aspects were adequate or inadequate, in order to design the programme to suit each respective country. A comparative study of in-depth evaluations, conducted in each respective country, under favourable conditions for the participants/respondents, would most likely yield more conclusive results. The programme is also fairly new, initiated in 2014. Therefore, its impact is still yet to be fully realised. Lastly, this current study experienced time and resource limitations; however, its observations provide useful insights that could be used for further reseacher.

REFERENCES

Abiddin, N. Z., & Ismail, A. (2011). Attrition and completion issues in postgraduate studies for student development. *International Review of Social Sciences and Humanities, 1*(1), 15–29.

Ackoff, R. L. (1999). *Ackoff's best: His classic writings on management.* New York, NY., USA: Wiley.

Adams, W. C. (2015). Conducting semi-structured interviews. In K. E. Newcomer, H. P. Hatry, & J. S. Wholey (Eds.), *Handbook of practical program evaluation* (pp. 492–505). San Fransisco, CA., USA: Joessy-Bass.

Adedokun-Shittu, N. A., & Shittu, A. J. K. (2013). ICT Impact Assessment Model: An extension of the CIPP and Kirkpatrick Models. *IHR, 3*(1), 26.

Adeoti-Adekeye, W. B. (1997). The importance of management information systems. *Library Review, 46*(5), 318–327.

Allan, J. (1996). Learning outcomes in higher education. *Studies in Higher Education, 21*(1), 93–108.

Almutairi, A. F., Dahinten, V. S., & Rodney, P. (2015). Almutairi's Critical Cultural Competence Model for a multicultural healthcare environment. *Nursing Inquiry, 22*(4), 317–325.

Al-Sawai, A. (2013). Leadership of healthcare professionals: Where do we stand? *Oman Medical Journal, 28*(4), 285–287.

Ambage, N. (1995). Trust information systems. In R. Sheaff & V. Peel (Eds.), *Managing Health Service Information Systems* (pp. 66–85). Buckingham, England, United Kingdom: Open University Press.

Ammenwerth, E., Graber, S., Hermann, G., Burkle, T., & Konig, J. (2003). Evaluation of health information systems – problems and challenges. *Medical informatics, 71*(2-3), 125–135.

Anderson, H. M., Moore, D. L., Anaya, G., & Bird, E. (2005). Student learning outcomes assessment: A component of program assessment. *American Journal of Pharmaceutical Education, 69*(2), 256–268.

Arambewelaa, R., & Hall, J. (2013). The interactional effects of the internal and external university environment, and the influence of personal values, on satisfaction among international postgraduate students. *Studies in Higher Education, 38*(7), 972–988.

Arbour, M., Kaspar, R. W., & Teall, A. M. (2015). Strategies to promote cultural competence in distance education. *Journal of Transcultural Nursing, 26*(4), 436–440.

Arnold, C., Theede, J., & Gagnon, A. (2014). A qualitative exploration of access to urban migrant healthcare in Nairobi, Kenya. *Social Science & Medicine, 110*(none), 1–9.

Asogwa, B. E. (2012). The challenge of managing electronic records in developing countries: Implications for records managers in sub-Saharan Africa. *Records Management Journal, 22*(3), 198–211.

Awiti, J. O. (2014). Poverty and health care demand in Kenya. *BMC Health Services Research, 14*(560), 17.

Badiru, E. O., & Wahome, M. (2016). Conducting graduate tracer studies for quality assurance in East African universities: A focus on graduate students voices on quality culture. *Journal of Education and Practice, 7*(6), 174–181.

Ball, M. J., Weaver, C. A., & Kiel, J. M. (2004). Healthcare Information Management Systems: Cases, Strategies and Solutions. In N. M. Lorenzi & R. T. Riley (Eds.), *Informatics in Health Care:Managing Organizational Change* (3rd edition, pp. 81–92). New York, NY., USA: Springer.

Barratt, M. J., Ferris, J. A., & Lenton, S. (2015). Hidden populations, online purposive sampling, and external validity: Taking off the blindfold. *Field Methods, 27*(1), 3–21.

Bates, M., Black, C., Blair, F., Davis, L., Ingram, S., Lane, D., McElderry, A., Peagler, B., Pickett, J., Plettenberg, C., & Hart-Hester, S. (2014). Perceptions of Health Information Management Educational and Practice Experiences. *Perspectives in Health Information Management, 11*(Summer), 1–12.

Bath, P. A. (2008). Health informatics: Current issues and challenges. *Journal of Information Science, 34*(4), 501–518.

Bazeley, P. (2009). Integrating data analyses in mixed methods research. *Mixed Methods Research Methods for Nursing and Health Science, 3*(3), 203–207.

Beratarrechea, A., Willner, J. M., Ciapponi, A., & Rubinstein, A. (2014). The impact of mobile health interventions on chronic disease outcomes in developing countries: A systematic review. *TELEMEDICINE and e-HEALTH, 20*(1), 75–82.

Bernstein, J. H. (2009). *The Data-Information-Knowledge-Wisdom Hierarchy and its Antithesis.* Syracuse, NY., USA: North American Symposium on Knowledge Organization.

Bloom, D. E., Canning, D., & Sevilla, J., (2004). The effect of health on economic growth: A production function approach. *World Development, 32*(1), 1–13.

Blumenfield, T. (2012). Assessing international (post)graduate education: A research agenda. *Australian Universities Review, 54*(1), 72–82.

Blundell, R., Dearden, L., Meghir, C., & Sianesi, B. (1999). Human capital investment: The returns from education and training to the individual, the firm and the economy. *Fiscal Studies, 20*(1), 1–23.

Bode, I., & Maerker, M. (2014). Management in medicine or medics in management? The changing role of doctors in German hospitals. *International Journal of Public Sector Management, 27*(5), 395–405.

Boell, S. K., & Cecez-Kecmanovic, D. (2015). *What is an information system?* Hawaii, USA: IEEE. pp. 4959–4968.

Bolarinwa, O. A. (2015). Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. *Nigerian Postgraduate Medical Journal, 22*(4), 195–201.

Bollier, D. (2010). *The Promise and Peril of Big Data,* Washington, DC., USA: The Aspen Institute.

Börsch-Supan, A., & Weiss, M. (2016). Productivity and age: Evidence from work teams at the assembly line. *The Journal of the Economics of Ageing, 7*(C), 30–42.

Braa, J., Heywood, A., & Sahay, S. (2012). Improving quality and use of data through data-use workshops: Zanzibar, United Republic of Tanzania. *Bull World Health Organ, 90*(5), 379–384.

Bradley, E. H., Taylor, L. A., & Cuellar, C. J. (2015). Management matters: A leverage point for health systems strengthening in global health. *International Journal of Health Policy and Management, 4*(7), 411–415.

Braun, V., & Clarke, V. (2006). Using Thematic analysis in psychology. *Routledge Journal, 3*(2), 77–101.

British Broadcasting Corporation [BBC]. (2016). *Germany country profile full overview.* Retrieved from http://www.bbc.com/news/world-europe-17300915

Brodnik, M. S., & Houser, S. H. (2009). Redefining the Health Information Management scholar role. *Perspectives in Health Information Management, 6*(Summer), 1–11.

Brooks, M. (2003). Evaluating the 'Student Experience': An approach to managing and enhancing quality in higher education. *Journal of Hospitality, Leisure, Sport & Tourism Education, 2*(1), 17–26.

Buchinder, S. B., & Thompson, J. M. (2010). *Career Opportunities in Health Care Management; Perspective from the Field.* Boston, MA., USA: Jones and Bartlett.

Burger, R., & Christian, C. (2018). Access to health care in post-apartheid South Africa: Availability, affordability, acceptability. *Health Economics, Policy and Law* , 1-13.

Burrow, S., Mairs, H., Pusey, H., Bradshaw, T., & Keady, J. (2016). Continuing professional education: Motivations and experiences of health and social care professionals' part-time study in higher education. A qualitative literature review. *International Journal of Nursing Studies, 63*(none), 139–145.

Bush, T. (2008). From management to leadership: Semantic or meaningful change? *BELMAS, 36*(2), 271–288.

Cackett, D., Bond, A., & Gouk, J. (2013). *Information management and Big Data A reference architecture.* Redwood Shores, CA, USA: Oracle.

Callen, J. (2001). Which competencies do health information managers, working in public hospitals, perceive to be important for effective performance?. *HIMJ, 30*(1), 19.

Campanelli, P. (2008). Testing survey questions. In E. D. de Leeuw, J. J. Hox, & D. A. Dillman (Eds.), *International Handbook of Survey Methodology* (pp. 176–200). New York, NY., USA: Lawrence Erlbaum Associates.

Cano, I., Tenyi, A., Vela, E., Miralles, F., & Roca, J. (2017). Perspectives on Big Data applications of health information. *Current Opinion in Systems Biology, 3*, 36–42.

Chen, K. L., & Lee, H. (2013). The Impact of Big Data on the Healthcare Information Systems. *Transactions of the International Conference on Health Information Technology Advancement, 2*(1), 43–46.

Choo, C. W., Furness, C., Paquette S., Van den Berg, H., Detlor, B., Bergeron, P., & Heaton, L. (2006). Working with information: Information management and culture in a professional services organization. *Journal of Information Science, 32*(6), 491–510.

Cline, G. B., & Luiz, J. M. (2013). Information Technology Systems in public sector health facilities in developing countries: the case of South Africa. *BMC Medical Informatics and Decision Making, 13*(13), 12.

Connell, J. P., & Kubisch, A. C. (1998). Applying a Theory of Change approach to the evaluation of comprehensive community initiatives: Progress, Prospects, and Problems. In K. Fulbright-Anderson, A. C. Kubisch, & J. P. Connell (Eds.), *New Approaches to Evaluating Community Initiatives* (pp. 15–44). Washington DC., USA: Aspen Institute.

Cooke, F. L., & Bartram, T. (2015). Human resource management on health care and elderly care: Current challenges and toward a research agenda. *Human Resource Management, 54*(5), 711–735.

Cooper, P. (2016). Data, information, knowledge and wisdom. *Anaesthesia and Intensive Care Medicine, 18*(1), 55–56.

Creswell, J. W. (2007). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches.* Thousand Oaks, CA., USA: Sage Publications.

Creswell, J. W., Ebersöhn, L., Eloff, I., Ferreira, R., Ivankova, N. V, Jansen, J. D., Nieuwenhuis, J., Pietersen, J., Plano Clark, V. L., & Van der Westhuizen, C., (2014). *First Steps in Research.* Pretoria, South Africa: Van Schaik Publishers.

Dahiya, S., & Jha, A. (2011). Review of training evaluation. *International Journal of Computer Science and Communication, 2*(1), 11–16.

Davis, P. (2006). Exploratory research. In: V. Jupp (Ed.), *The Sage Dictionary of social research methods* (pp. 110–111). London, England, United Kingdom: Sage Publications.

D'Cruz, H., & Jones, M. (2006). *Social work research; Ethical and political context* (1st edition). London, England, United Kingdom: Sage Publications.

Deardorff, D. K. (2011). Assessing intercultural competence. *New directions for institutional research, 149*(Spring), 65–75.

De Leeuw, E. D., & Hox, J. J. (2008). Self-administered questionnaires, mail surveys and other applications. In E. D. de Leeuw, J. J. Hox, & D. A. Dillman (Eds), *International handbook of survey methodology* (pp. 239–263). New York, NY., USA: Lawrence Erlbaum Associates.

De Sousa Santos, B. (2002). The Processes of Globalisation. *Reč, 68*(14), 67–131.

Destatis. (2016). *Older people in Germany and the EU 2016.* Retrieved from https://www.destatis.de/EN/Publications/Specialized/Population/BrochureOlderPeopleEU0010021169004.html;jsessionid=FD3BD10EFAB01BA528D4DE97C598B603.cae2

De Vos, A. S., Strydom, H., Fouché, C.B., & Delport, C. S. L. (2011). *Research at Grass Roots; For the social sciences and human service professions* (4th edition). Pretoria, South Africa: Van Schaik Publishers.

Dorsey, A. D., Clements, K., Garrie, R. L., Houser, S. H., & Berner, E. S. (2015). A collaborative approach to Health Information Management and Informatics Education. *Applied Clininical Informatics, 6*(2), 211–223.

Drennan, J. (2012). Masters in nursing degrees: An evaluation of management and leadership outcomes, using a Retrospective Pre-test Design. *Journal of Nursing Management, 20*(1), 102–112.

Dyson, A., & Todd, L. (2010). Dealing with complexity: Theory of Change evaluation and the full service extended schools initiative. *International Journal of Research & Method in Education, 33*(2), 119–134.

Egesah, O., Wahome, M., Langat, E., & Wishitemi, B. (2014). University Graduate Tracer Studies (Unitrace): Methodological lessons and utilization of selected results in Kenya. *JIARM, 2*(8), 305–325.

Egger, D., & Ollier, E. (2007). Managing the Health Millennium Development Goals - The challenge of management strengthening: Lessons from three countries. *WHO/HSS/ healthsystems, 2007*(8), 1–44.

Engwall, L., Kipping, M., & Üsdiken, B., 2016. *Defining Management: Business Schools, Consultants, Media* (1st edition). New York, NY., USA: Routledge.

Eseryel, D. (2002). Approaches to evaluation of training: Theory & practice. *Journal of Educational Technology & Society, 5*(2), 93–98.

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics, 5*(1), 1–4.

Ewell, P. T. (2007). Assessment and accountability in America today: Background and context. *New Directions for Institutional Research, Assessment Supplement, Fall*(2008), 7–17.

Ezziane, Z., Maruthappu, M., Gawn, L., Thompson, E. A., Athanasiou, T., & Warren, O. J. (2012). Building effective clinical teams in healthcare. *Journal of Health Organization and Management, 26*(4), 428–436.

Faist, T. (2010). Cultural diversity and social inequalities. *Social Research, Migration Politics, 77*(1), 297–324.

Fernández-Ballesteros, R., Zamarrón, M. D., Díez-Nicolás, J., López-Bravo, M. D., Molina, M. Á., & Schettini, R. (2011). Productivity in old age. *Research on Aging, 33*(2), 205–226.

Fowler, Jr., F. J., & Cosenza, C. (2008). Writing effective questions. In E. D. de Leeuw, J. J. Hox, & D. A. Dillman (Eds.), *International handbook of survey methodology* (pp. 137–160). New York, NY., USA: Lawrence Erlbaum Associates.

Frantz, J. M., Bezuidenhout, J., Burch, V. C., Mthembu, S., Rowe, M., Tan, C., Van Wyk, J., & Van Heerden, B. (2015). The impact of a faculty development programme for health professions educators in sub-Saharan Africa: an archival study. *BMC Medical Education, 15*(28), 1–8.

Frenk, J., Chen, L., Bhutta, Z. A., Cohen, J., Crisp, N., Evans, T., Fineberg, H., Garcia, P., Ke, Y., Kelley, P., Kistnasamy, B., Meleis, A., Naylor, D., Pablor-Mendez, A., Reddy, S., Scrimshaw, S., Sepulveda, J., Serwadda, D., & Zurayk, H. (2010). Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *The Lancet, 376*(9756), 1923–1958.

Frye, A. W., & Hemmer, P. A. (2012). Program evaluation models and related theories: AMEE Guide No. 67. *Medical Teacher, 34*(5), e288–e299.

Gatero, G. M. (2011). Utilization of ICTs for accessing health information by medical professionals in Kenya: A case study of Kenyatta National Hospital. *Journal of Health Informatics in Developing Countries, 5*(1), 60–88.

Gathigah, M. (2014). *Middle-income Kenya still needs aid.* Retrieved from https://www.theguardian.com/global-development/2014/nov/04/middle-income-kenya-aid

Gibson, C. J., Dixon, B., & Abrams, K. (2015). Convergent evolution of health information management and health informatics: A perspective on the future of information professionals in healthcare. *Applied Clinical Informatics, 6*(1), 163–184.

Ginevičius, R., & Ginevičienė, V. B. (2009). The compliance of Master's degree studies with the economic needs of the country. *Baltic Journal on Sustainability, 15*(1), 136–153.

Gordon, P. A. (2017). Age diversity in the workplace. In C. D. Aquino & R. Robertson (Eds.), *Diversity and inclusion in the global workplace; Aligning initiatives with strategic business goals* (pp. 31–47). Cham, Switzerland: Palgrave Macmillan.

Gorman, G. E., Clayton, P., Shep, S. J., & Clayton, A. (2005). *Qualititave research for the information professional.* London, England, United Kingdom: Facet Publishing.

Gulis, G., & Fujino, Y. (2015). Epidemiology, population health, and health impact assessment. *Journal of Epidemiology, 25*(3), 179–180.

Haddock, C. C., McLean, R. A., & Chapman, R. C. (2002). *Careers in Healthcare Management: How to Find Your Path and Follow It.* Chicago, Il., USA: Health Administration Press.

Harries, E., Hodgson, L., & Noble, J. (2014). *Creating your Theory of Change: NPC's Practical Guide.* London, England, United Kingdom: New Philanthropy Capital.

Heiman, G. W. (2011). *Basic Statistics for the Behavioral Sciences* (6th edition). Belmont, CA., USA: Wadsworth Cengage Learning.

Hoepfl, M. C. (1997). Choosing qualitative research: A primer for Technology Education Researchers. *Journal of Technology Education, 9*(1), 47–63.

Holt, S., Bjorklund, R., & Green, V. (2009). Leadership and Culture: Examining the Relationship between Cultural Background and Leadership Perceptions. *The Journal of Global Business Issues, 3*(2), 149–164.

Houser, S. H., Manger, B. J., Price, B. J., & Hart-Hester, S. (2009). Expanding the Health Information Management public health role. *Perspectives in Health Information Management, 6*(Summer), 1–6.

Howe, L. D., Galobardes, B., Matijasevich, A., Gordon, D., Johnston, D., Onwujekwe, O., Patel, R., Webb, E. A., Lawlor, D. A., & Hargreaves, J. R. (2012). Measuring socio-economic position for epidemiological studies in low and middle-income countries: A methods of measurement in epidemiology paper. *International Journal of Epidemiology, 41*(3), 871–886.

Hox, J. J., De Leeuw, E. D., & Dillman, D. A. (2008). The cornerstones of survey research. In E. D. De Leeuw, J. J. Hox, & D. A. Dillman. *International handbook of survey methodology* (pp. 1–17). New York, NY., USA: Lawrence Erlbaum Associates.

Hwang, S. (2008). Utilizing qualitative data analysis software: A review of Atlas.ti. *Social Science Computer Review, 26*(4), 519–527.

Irani, F. N. H. A., & Noruzi, M. R. (2011). Globalization and challenges; What are the globalization's contemporary issues? *International Journal of Humanities and Social Science, 1*(6), 216–218.

Jaeger, R. G., & Halliday, T. R. (1998). On Confirmatory versus Exploratory Research. *Herpetologica*, 54(2), S64–S66.

Jansen, H. (2010). The logic of qualitative survey research and its position in the field of social research methods. *Forum: Qualitative Social Research, 11*(2), 1–21.

Jogulu, U. D. (2010). Culturally-linked leadership styles. *Leadership & Organization Development Journal, 31*(8), 705–719.

Johnson, J. B., & Dick, W. (2012). Evaluation in instructional design: A comparison of evaluation models. In J. V. Dempsey & R. A. Reiser (Eds.), *Trends and Issues in Instructional Design and Technology* (pp. 96–104). Boston, MA., USA: Pearson.

Kelly, M. J. (2012). Evaluation research. In: L. M. Given (Ed.), *The SAGE encyclopedia of qualitative research methods* (pp. 304–306). Thousand Oaks, CA., USA: Sage.

Kelley, K., Clark, B., Brown, V., & Sitzia, J. (2003). Good practice in the conduct and reporting for research survey. *Interantional Journal for Quality in Health Care*, *15*(3), 261–266.

Kenya Methodist University [KeMU]. (2017). *About KeMU: Our History.* Retrieved from http://www.kemu.ac.ke/index.php/about-kemu/about-us-kemu/our-history.

Kerry, V. B., Ndug'u, T., Walensky, R. P., Kayanja, V. F., & Bangsberg, D. R. (2011). Managing the demand for global health education. *PLoS Medicine*, *8*(11), 6.

Kezar, A. (2013). Institutionalizing student outcomes assessment: The need for better research to inform practice. *Innovative Higher Education*, *38*(3), 189–206.

Kim, J. Y., Farmer, P., & Porter, M. E. (2013). Redefining global health-care delivery. *Lancet*, *382*(9897), 1060–1069.

Kirkpatrick, D. (1959). Techniques for evaluating training programs. *Journal of American Society of Training Directors*, *13*(none), 21–26.

Kirkpatrick, D. L. (1979). Techniques for evaluating training programs. *Training and Development Journal*, *33*(6), 78–92.

Kirkpatrick, D. (1996). Revisiting Kirkpatrick's Four-Level Model. *Training and Development*, *50*(1), 54–59.

Kirkpatrick Partners. (2009). *Kirkpatrick Hybrid Evaluation Tool Template.* Retrieved from https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=8&ved=0ahUKEwjB3teHy5jXAhUrC8AKHSvKBuoQFgg4MAc&url=http%3A%2F%2Fwww.kirkpatrickpartners.com%2FPortals%2F0%2FResources%2FCertified%2520Only%2FKirkpatrick%2520Hybrid%2520Evaluation%2520Tool%2520T.

Kostagiolas, P. (2006). Information services for supporting quality management in healthcare. *The Journal on Information Technology in Healthcare*, *4*(3), 137–146.

Lapkin, S., Levett-Jones, T., & Gilligan, C. (2013). A systematic review of the effectiveness of interprofessional education in health professional programs. *Nurse Education Today, 33*(2), 90–102.

Lega, F., Prenestini, A., & Spurgeon, P. (2013). Is management essential to improving the performance and sustainability of health care systems and organizations? A systematic review and a roadmap for future studies. *Value in Health, 16*(1 Suppl), S46–S51.

Lenz, R., Peleg, M., & Reichert, M. (2012). Healthcare process support: Achievements, challenges, current research. *International Journal of Knowledge-Based Organisations, 2*(4), 11.

López-Yáñez, I., Yáñez-Márquez, I., Camacho-Nieto, C., Aldape-Pérez, O., & Argüelles-Cruz, A. (2015). Collaborative learning in postgraduate level courses. *Computers in Human Behavior, 51*(PB), 938–944.

Madden, A. D. (2000). A definition of information. *Aslib Proceedings, 52*(9), 343–349.

Madera, J. M. (2013). Best practices in diversity management in customer service organizations: An investigation of top companies cited by Diversity Inc.. *Cornell Hospitality Quarterly, 52*(2), 124–135.

Makinde, O. A., Mami, I. M., Oweghoro, B. M., Oyediran, K. A., & Mullen, S. (2016). Investing in Health Information Management: The right people, in the right place, at the right time. *Health Information Management Journal, 45*(2), 90–96.

Mandal, P. C. (2018). Qualitative research: Criteria of evaluation. *International Journal of Academic Research and Development, 3*(2), 591–596.

Manerikar, V., & Manerikar, S. (2014). A note on exploratory research. *aWEshkar, XVII*(1), 95–96.

Marchant, T., Schellenberg, J., Peterson, S., Manzi, F., Waiswa, P., Hanson, C., Temu, S., Darious, K., Sedekia, Y., Akuze, J., & Rowe, A. K. (2014). The use of continuous

surveys to generate and continuously report high quality timely maternal and newborn health data at the district level in Tanzania and Uganda. *Implementation Science*, *9*(112), 21.

Mason, P. H., Lipworth, W., & Kerridge, I. (2016). More than one way to be global: Globalisation of research and the contest of ideas. *AJOB, 16*(10), 48–49.

Massimi, A., Marzuillo, C., Di Muzio, M., Vacchio, M. R., D'Andrea, E., Villari, P., & De Vito, C. (2016). Are knowledge and skills acquired during the Master's degree in Nursing actually put into practice? A pilot study in Italy. *Epidemiology Biostatistics and Public Health, 13*(1), e11684-1 – e11684-4.

Mayne, J. (2015). Useful theory of change models. *Canadian Journal of Program Evaluation, 30*(fall), 119–142.

Mayosi, B. M., & Benatar, S. R. (2014). Health and Health Care in South Africa – 20 Years after Mandela. *The New England Journal of Medicine*, *372*(1), 1346–1353.

Mayosi, B. M., Lawn, J. E., Van Niekerk, A., Bradshaw, D., Abdool Karim, S. S., & Coovadia, H. M. (2012). Health in South Africa: changes and challenges since 2009. *Lancet*, *380*(9858), 2029–2043.

McAfee, A., & Brynjolfsson, E. (2012). Big Data: The management revolution. *Harvard Business Review*, October, 1-9.

Millar, V. (2016). Interdisciplinary curriculum reform in the changing university. *Teaching in Higher Education*, *21*(4), 471–483.

Mitchell, M. L., & Jolley, J. M. (2010). *Research Design: Explained.* Belmont, CA., USA: Wadsworth: Cengage Learning.

Mithas, S., Ramasubbu, N., & Sambamurthy, V. (2011). How information management capability influences firm performance. *MIS Quarterly, 35*(1), 237–256.

Moldovan, L. (2016). Training outcomes evaluation model. *Procedia Technology*, *22*(none), 1184–1190.

Moloi, K., Gravett, S., & Petersen, N. (2009). Globalization and its impact on education with specific reference to education in South Africa. *BELMAS, 37*(2), 278–297.

Morabito, V. (2013). *Business Technology Organisation: Managing Digital Information Technology for Value Creation - The Sigma Approach.* Berlin, Germany: Springer.

Muhimbili University of Health and Allied Sciences [MUHAS]. (2017). *About Us: A brief history of MUHAS.* Retrieved from https://www.muhas.ac.tz/index.php/about-muhas/a-brief-history

Muijs, D. (2004). *Doing Quantitative Research in Education with SPSS.* London, England, United Kingdom: Sage Publishers.

Nath, H. K. (2017). The Information Society. *Space and Culture, India, 4*(3), 19–28.

Neuman, W. L. (2007). *Basics of social research: Qualitative and Quantitative approaches* (2nd edition). Boston, MA., USA: Pearson Education, Inc.

Neu-Ulm University of Applied Sciences [HNU]. (2017). *About Us.* Retrieved from https://www.hs-neu-ulm.de/en/about-us/

Nilseng, J., Gustafsson, L. L., Nungu, A., Bastholm-Rahmner, P., Mazali, D., Pehrson, B., & Eriksen, J. (2014). A cross-sectional pilot study assessing needs and attitudes to implementation of information and communication technology for rational use of medicines among healthcare staff in rural Tanzania. *BMC Medical Bioinformatics and Decision Making, 14*(1), 12.

Nusche, D. (2008). Assessment of learning outcomes in higher education: A comparative review of selected practices. *Innovación Educativa, 8*(45), 36–77.

O'Connell, M. B., Korner, E. J., Rickles, N. M., & Sias, J. J. (2007). Cultural competence in health care and its implications for pharmacy. *Pharmacotherapy, 27*(7), 1062–1079.

O'Donovan, J., Bersin, A., & O'Donovan, C. (2015). The effectiveness of Mobile Health (mHealth) Technologies to train healthcare professionals in developing countries: a review of the literature. *BMJ Innov, 1*(1), 33–36.

Offerman, L. R., & Hellman, P. S. (1997). Culture's consequences for leadership behaviour. *Journal of Cross-cultural Psychology, 28*(3), 342–351.

Oh, H., Rizo, C., Enkin, M., & Jadad, A. (2005). What is eHealth?: A Systematic review of published definitions. *World Hospitals and Health Services, 41*(1), 32–39.

Organisation for Economic Co-operation and Development [OECD]/European Observatory on Health Systems & Policies. (2017). *Germany: Country Health Profile 2017, State of Health in the EU*. Paris, France: OECD Publishing.

Paradeise, C., & Thoenig, J.-C. (2013). Academic institutions in search of quality: Local orders and Global standards. *Organization Studies, 34*(2), 189–218.

Passmore, J., & Velez, M. (2012). SOAP-M: A training evaluation model for HR. *Industrial and Commercial Training, 44*(6), 315–325.

Patel, V. L., & Kannampallil, T. G. (2014). Human factors and Health Information Technology: Current challenges and future directions. *IMIA Yearbook of Medical Informatics, 9*(1), 58–66.

Paul, R. J. (2010). What an information system is, and Why is it important to know this. *Journal of Computing and Information Technology, 18*(2), 95–99.

Perry, J., Green, A., & Harrison, K. (2011). The impact of Master's education in Manual and Manipulative Therapy and the 'Knowledge Acquisition Model'. *Manual Therapy, 16*(3), e285–e290.

Pieper, D., Jülich, F., Antoine, S., Bächle, C., Chernyak, N., Genz, J., Eikermann, M., & Icks, A. (2015). Studies analysing the need for health-related information in Germany - A systematic review. *BMC Health Services Research*, *15*(407), 1–18.

Praslova, L. (2010). Adaptation of Kirkpatrick's four level model of training criteria to assessment of learning outcomes and program evaluation in higher education. *Educ Asse Eval Acc*, *22*(3), 215–225.

Rajeev, P., Madan, M. S., & Jayarajan, K. (2009). Revisiting Kirkpatrick's Model - an evaluation of an academic training course. *Current Science*, *96*(2), 272–276.

Razum, O., & Spallek, J. (2014). Addressing health-related interventions to immigrants: Migrant-specific or Diversity-sensitive?. *IJPH*, *59*(6), 893–895.

Rehmat, W., Aaltio, I., Agha, M., & Khan, H. R. (2015). Is training effective? Evaluating training effectiveness in call centers. *Electronic Journal of Business Ethics and Organization Studies*, *20*(1), 4–13.

Safian, S. C. (2012). Factors Influencing Students to Enroll in Health Information Management Programs. *Perspectives in Health Information Management*, *2012*(Summer), 18.

Saks, A. M., & Burke, L. A. (2012). An investigation into the relationship between training evaluation and the transfer of training. *International Journal of Training and Development*, *16*(2), 118–127.

Sandelowski, M. (2000). Focus on research methods; Whatever happened to qualitative description? *Research in Nursing & Health*, *23*(4), 334–340.

Scales, B. J. (2013). Qualitative analysis of student assignments: a practical look at ATLAS.ti. *Reference Services Review*, *41*(1), 34–147.

Schomburg, H. (2003). *Handbook for Tracer Studies* (1st edition). Kassel, Germany: GTZ and Centre for Research on Higher Education and Work.

Seims, L. R., Alegre, J. C., Murei, L., Bragar, J., Thatte, N. P. K., & Cheburet, S. (2012). Strengthening management and leadership practices to increase health-services delivery in Kenya: an evidence-based approach. *Human Resources for Health, 10*(25), 1–7.

Sharma, G. (2017). Pros and cons of different sampling techniques. *International Journal of Applied Research, 3*(7), 749–752.

Sharma, M. K., & Jain, S. (2013). Leadership management: Principles, models and theories. *Global Journal of Management and Business Studies, 3*(3), 309–318.

Sheaff, R. (1995). Health services informartics in the 1990s. In R. Sheaf & V. Peel (Eds.), *Managing Health Service Information Systems* (pp. 1–20). Buckingham, England, United Kingdom: Open University Press.

Sheikh, M. (2014). Digital health information system in Africa's resource poor countries: Current challenges and opportunities. *Journal of Health Informatics in Developing Countries, 8*(1), 78–87.

Shemdoe, A., Mbaruku, G., Dillip, A, Bradley, S., William, J., Wason, D., & Hildon, Z. J. (2016). Explaining retention of healthcare workers in Tanzania: Moving on, Coming to 'Look, See and Go', or Stay? *Human Resources for Health, 14*(2), 13.

Silva, A. (2016). What is Leadership? *Journal of Business Studies Quarterly, 8*(1), 5.

Skirbekk, V. (2004). Age and individual productivity: A literature survey. *Vienna Yearbook of Population Research, 2*(1), 133–153.

Snijders, C., Matzat, U., & Reips, U.-D. (2012). "Big Data": Big gaps of knowledge in the field of internet science. *International Journal of Internet Science, 7*(1), 1–5.

Statistics South Africa [Stats SA]. (2018). *Mid-year Population Estimates*. Pretoria, South Africa: Stats SA.

Stoller, J. K. (2013). Recommendations and remaining questions for health care leadership training programs. *Academic Medicine, 88*(1), 12–15.

Stufflebeam, D. L. (1971). *The Relevance of the CIPP Evaluation Model for educational accountability* (p. 30). Atlantic City, NJ., USA: Department of Health, Education & Welfare.

Sultana, M. A., Rashid, M., Mohiuddin, M., & Mazumder, M. N. H. (2013). Cross-cultural management and organizational performance: A content analysis perspective. *International Journal of Business and Management, 8*(8), 113–146.

Tamkin, P., Yarnall, J., & Kerrin, M. (2002). *Kirkpatrick and beyond: A review of training evaluation.* Brighton, England, UK: The Institute for Employment Studies.

Tasca, J. E., Ensslin, L., Ensslin, S. R., & Alves, M. B. M. (2010). An approach for selecting a theoretical framework for the evaluation of training programs. *Journal of European Industrial Training, 34*(7), 631–655.

Teijeiro, M., Rungo, P., & Freire, M. J. (2013). Graduate competencies and employability: The impact of matching firms' needs and personal attainments. *Economics of Education Review, 34*(none), 286–295.

Tekian, A., & Harris, I. (2012). Preparing health professions education leaders worldwide: A description of Masters-level programs. *Medical Teachers, 34*(1), 52–58.

The Netherlands, Ministry of Foreign Affairs. (2016). *Kenyan Healthcare Sector, Market Study Report: Opportunities for the Dutch Life Sciences & Health Sector*. The Hague: Netherlands Enterprise Agency.

Thomlison, B. (2011). Descriptive studies. In B. A. Thyer (Ed.), *The Handbook of Social Work Research Methods* (pp. 131–141). City of Oaks, NC., USA: SAGE Publications, Inc.

Tilley, N. (2006). Evaluation research. In V. Jupp (Ed.), *The Sage Dictionary of Social Research Methods* (pp. 104–106). London, England, United Kingdom: SAGE Publications.

Topno, H. (2012). Evaluation of training and development: An analysis of various models. *IOSR-JBM, 5*(2), 16–22.

Trenerry, B., & Paradies, Y. (2012). Organizational assessment: An overlooked approach to managing diversity and addressing racism in the workplace. *Journal of Diversity Management, 7*(1), 11–26.

University of the Western Cape [UWC]. (2013). *About UWC: UWC History.* Retreived from https://www.uwc.ac.za/Pages/History.aspx

University of the Western Cape [UWC]. (2015). *Master's in Health Information Management – Call for Applications.* Retrieved from https://www.uwc.ac.za/Announcements/Pages/Master%E2%80%99s-in-Health-Information-Management%E2%80%93Call-for-Applications.aspx

Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing and Health Sciences, 15*(3), 398–405.

Van Gemert-Pijnen, J. E., Wynchank, S., Covvey, H. D., & Ossebaard, H. C. (2012). Improving the credibility of electronic health technologies. *Bull World Health Organ, 90*(5), 323–323A.

VanVactor, J. D. (2012). Collaborative leadership model in the management of health care. *Journal of Business Research, 65*(4), 555–561.

Vearey, J., Modisenyane, M., & Hunter-Adams, J. (2017). Towards a migration-aware health system in South Africa: a strategic opportunity to address health inequity. *South African Health Review*, *2017*(1), 89–98.

Ventola, C. L. (2018). Big Data and Pharmacovigilance: Data mining for adverse drug events and interactions. *P&T®*, *43*(6), 340–351.

Vogel, E., Ludwig, A., & Borsch-Supan, A. (2015). Aging and pension reform: Extending the retirement age and human capital formation. *Cambridge University Press*, *16*(1), 81–107.

Walliman, N. (2011). *Research Methods: The Basics*. Oxon, England, United Kingdom: Routledge.

Walsham, G. (2013). Development Informatics in a Changing World: Reflections from ICTD2010/2012. *Information Technologies & International Development*, 9(1), 49–54.

Wankhede, M. M., & Gujarathi, R. (2012). Evaluation of training: Need to focus. *Journal of Business Management & Social Sciences Research (JBM&SSR)*, *1*(2), 15.

Weeks, D. R. (2012). Health care management: An e-health perspective. *Innovative*, *7*(none), 34–39.

Wiek, A., Withycombe, L., & Redman, C. L. (2011). Key competencies in sustainability: A reference framework for academic program development. *Springer*, 6(2), 203–218.

Wing, P., & Langelier, M. H. (2004). The future of HIM: Employer insights into the coming decade of rapid change. *Journal of AHIMA*, *75*(6), 28–32.

Woolcock, M. (2007). Higher education, policy schools, and development studies: What should masters degree students be taught? *Journal of International Development*, *19*(none), 55–73.

World Health Organization [WHO]. (2015). *Tanzania.* Retrieved from http://www.aho.afro.who.int/profiles_information/index.php?title=Special:Book/download/&collection_id=94adf91b91f4640e&writer=rl&return_to=Special%3ABook

Wu, B., Hu, Y., Gu, X., & Lim, C. P. (2016). Professional development of new higher education teachers with information and communication technology in Shanghai: A Kirkpatrick's evaluation approach. *Journal of Educational Computing Research, 54*(4), 531–562.

Yardley, S., & Dornan, T. (2012). Kirkpatrick's levels and education 'evidence'. *Medical Education, 46*(1), 97–106.

Yusofa, M. M., Kuljis, J., Papazafeiropoulou, A., & Stergioulas, L. K. (2008). An evaluation framework for Health Information Systems: human, organization and technology-fit factors (HOT-fit). *International Journal of Medical Informatics, 77*(6), 386–398.

Zand, D. E., & Sorensen, R. E. (1975). Theory of Change and the effective use of management science. *Administrative Science Quarterly, 20*(4), 532–545.

Zeng, X., Reynolds, R., & Sharp, M. (2009). Redefining the roles of Health Information Management professionals in Health Information Technology. *Perspectives in Health Information Management, 6*(Summer), 1–11.

APPENDICES

Appendix A: Delayed evaluation survey questionnaire

1. Country
   …….. ……
2. Profession
   ……..……...
3. Gender: Age:
   ……

KIRKPATRICK® HYBRID EVALUATION TOOL TEMPLATE

For Delayed Use After Training

Instructions: This template includes a variety of sample questions for each dimension of the levels that are appropriate to evaluate at some point after the training has taken place. Select a few questions from each dimension (i.e., on-the-job behavior, drivers, etc.) that will provide the data you need to make good decisions, and create a chain of evidence for the business value of your training initiative.

These questions are samples that are designed for you to modify and customize to match your program's content, audience, culture and desired results.

Timing: Post-training event, after the drivers are engaged and enough time has passed for participants to apply the new skills on the job. The timing will vary depending upon the type of knowledge / skills being taught.

Format: Survey, interview or focus group

Rating Scale: We recommend the following rating scale.

1 = Strongly Disagree 2 3 4 5 6 7 8 9 10 = Strongly Agree

Tip: To get the richest possible data, provide a comment field for as many questions as possible. Keep in mind the time and resources required to tabulate hand-written responses.

DELAYED LEVEL 1: REACTION

Relevance

Rating Scale Questions

□ This course provided all of the information I need to be able to perform the skills I learned successfully.

1	2	3	4	5	6	7	8	9	10

□ The information provided in this course is fully applicable to my job.

1	2	3	4	5	6	7	8	9	10

□ The timing of this course was appropriate for me.

1	2	3	4	5	6	7	8	9	10

Open-ended Questions

□ What information from this course has been most relevant to your job?

□ Was there any information in this course that is NOT relevant to your job? If so, what?

□ What information should be added to this course to make it more relevant to your work?

Customer Satisfaction

Rating Scale Questions

□ I would recommend this course to others with jobs similar to mine.

1	2	3	4	5	6	7	8	9	10

□ Taking this course was a good use of my time.

1	2	3	4	5	6	7	8	9	10

Open-ended Questions

□ Looking back, how could this program have been improved?

□ Looking back, what would you change about this course?

DELAYED LEVEL 2: LEARNING

Knowledge

If it is important for your chain of evidence, you can re-measure knowledge or skill. These questions will be specific to the content taught.

Open-ended Questions

- □ Looking back on the training, what content do you remember most?

- □ Looking back on the training, what content do you wish had been covered that wasn't?

Attitude

Rating Scale Questions

- □ It is clear why it was important for me to attend this training.

1	2	3	4	5	6	7	8	9	10

Open-ended Questions

- □ In your own words, explain why it was important for you to attend this course.

LEVEL 3: BEHAVIOR

On-the-Job Behavior

Rating Scale Questions

□ I have successfully applied on the job what I learned in training.

1	2	3	4	5	6	7	8	9	10

□ I have been able to apply on the job what I learned in class.

1	2	3	4	5	6	7	8	9	10

□ **Instructions:** Using this rating scale, circle the rating that best describes your current level of on-the-job application for each listed behavior.

1 - Little or no application
2 - Mild degree of application
3 - Moderate degree of application
4 - Strong degree of application
5 - Very strong degree of application, and desire to help others do the same

Insert major performance objective #1	1	2	3	4	5
Insert major performance objective #2	1	2	3	4	5
Insert major performance objective #3	1	2	3	4	5

□ I applied what I learned to my work:

☐ Within a week

☐ Within 2-4 weeks

☐ Within 5-12 weeks

☐ I have not applied it, but plan to in the future.

☐ I have not applied it, and do not expect to apply it in the future.

☐ I have applied what I learned to my work.

□ If you circled 7 or above for the previous question, rate the contributions of each of the following factors to your effective performance of (*insert major task or objective*):

Not at all	Low	Medium	High	Coaching from my supervisor
Not at all	Low	Medium	High	Support and / or encouragement
Not at all	Low	Medium	High	Effective system of accountability or monitoring
Not at all	Low	Medium	High	Belief that it would help me to be more effective in my work
Not at all	Low	Medium	High	Ongoing training I have received after the initial class
Not at all	Low	Medium	High	Payment of bonus for applying the knowledge
Not at all	Low	Medium	High	Other (please specify): _____

□ If you circled 6 or below, please indicate the reasons (check all that apply):

☐ I do not have the necessary knowledge and skills.

☐

I do not have a clear picture of what is expected of me.

☐ I have other, higher priorities.

☐ I do not have the necessary resources to apply what I've learned.

☐ I do not have the human support to apply what I've learned.

☐ The training didn't give me the confidence to apply what I learned.

☐ I don't think what I learned will work.

☐ There is not an adequate system of accountability to ensure the application of what I learned.

☐ Other (please explain): _____

Open-ended Questions

□ Describe your experience in attempting to apply what you learned in training back on the job.

□ To what degree have you applied what you learned?

□ Have you struggled with application? If so, to what do you attribute your difficulty?

□ What steps do you plan to take in the future to continue your progress?

Drivers

Rating Scale Questions

□ My supervisor and I set expectations for this training before the class.

1	2	3	4	5	6	7	8	9	10

□ My supervisor and I determined how I would apply what I learned after training.

1	2	3	4	5	6	7	8	9	10

□ I have received performance support in order to apply what I learned successfully.

1	2	3	4	5	6	7	8	9	10

□ I receive support and encouragement for applying my learning to my job.

1	2	3	4	5	6	7	8	9	10

□ I have the necessary resources to apply what I learned successfully.

1	2	3	4	5	6	7	8	9	10

□ A system of accountability helps me to apply what I learned.

1	2	3	4	5	6	7	8	9	10

□ Incentives encourage me to apply what I learned.

1	2	3	4	5	6	7	8	9	10

□ When I apply what I learned, I am rewarded appropriately.

1	2	3	4	5	6	7	8	9	10

Open-ended Questions

□ What additional training or support do you need to increase your effectiveness?

□ What kind of support have you received that has helped you to implement what you learned?

PREDICTIVE LEVEL 4: RESULTS

Leading Indicators

Rating Scale Questions

□ I am already seeing positive results from the training.

1	2	3	4	5	6	7	8	9	10

□ I am expecting positive results from this initiative in the future.

1	2	3	4	5	6	7	8	9	10

□ I have seen an impact in the follow areas as a result of applying what I learned (check all that apply):

- ☐ Increased productivity
- ☐ Improved quality
- ☐ Increased personal confidence
- ☐ Increased customer satisfaction
- ☐ Stronger relationships with my colleagues
- ☐ More respect from my peers
- ☐ Better organization in my work
- ☐ Other (please explain): _____

Open-ended Questions

□ What early indicators of positive impact have you noticed from your efforts? How do you feel about those successes?

□ What results have you seen since attending this training?

□ Please give an example of the success you have achieved since attending this training.

□ To what degree have the results you expected actually occurred?

□ What additional outcomes are you hoping to achieve from your efforts?

Desired Results

Rating Scale Questions

□ This training has positively impacted this organization.

1	2	3	4	5	6	7	8	9	10

□ This training has positively impacted organizational profitability.

1	2	3	4	5	6	7	8	9	10

□ This training has positively impacted mission accomplishment.

1	2	3	4	5	6	7	8	9	10

Open-ended Questions

- □ What impact is this training having on the organization as a whole?

- □ How has your participation in this training benefited the company?

- □ How has this initiative benefited the organization overall?

- □ Are you seeing any impact on sales and profitability as a result of this training? If so, please describe.

- □ Has this training / initiative helped your organization to accomplish its mission? If so, please describe.

Appendix B: Immediate evaluation survey questionnaire

4. Country
   ……..
5. Profession
   ……..
6. Gender: Age:
   ……

KIRKPATRICK® HYBRID EVALUATION TOOL TEMPLATE

For Use Immediately Following Training

1 = Strongly Disagree 2 3 4 5 6 7 8 9 10 = Strongly Agree

LEVEL 1: REACTION

Engagement

Rating Scale Questions

□ I took responsibility for being fully involved during this program.

1	2	3	4	5	6	7	8	9	10

□ I was engaged with what was going on during the program.

1	2	3	4	5	6	7	8	9	10

□ The class environment helped me to learn.

1	2	3	4	5	6	7	8	9	10

□ My learning was enhanced by the facilitator.

1	2	3	4	5	6	7	8	9	10

□ This program held my interest.

1	2	3	4	5	6	7	8	9	10

Open-ended Questions

□ Was there anything about your experience that interfered with your learning? If so, what?

□ What suggestions do you have that would have increased your involvement?

Relevance

Rating Scale Questions

□ I understand how to apply what I learned on the job.

1	2	3	4	5	6	7	8	9	10

□ The course material will be helpful for my future success.

1	2	3	4	5	6	7	8	9	10

□ I will be able to use what I learned immediately.

1	2	3	4	5	6	7	8	9	10

□ What I learned in this class will help me on the job.

1	2	3	4	5	6	7	8	9	10

□ I understand why this program was offered.

1	2	3	4	5	6	7	8	9	10

□ The information in this program is relevant and applicable to my work.

1	2	3	4	5	6	7	8	9	10

□ I am clear about what is expected of me on the job as a result of taking this class.

1	2	3	4	5	6	7	8	9	10

Open-ended Questions

□ What additional information do you suggest be added to the program?

□ Which modules did you find to be the most relevant to your job?

□ Which modules did you find to be the least relevant to your job?

Customer Satisfaction

Rating Scale Questions

□ I received helpful information prior to the session.

1	2	3	4	5	6	7	8	9	10

□ Taking this program was worth my time.

1	2	3	4	5	6	7	8	9	10

□ I will recommend this program to my co-workers.

1	2	3	4	5	6	7	8	9	10

□ I would be glad to help others with what I learned.

1	2	3	4	5	6	7	8	9	10

□ I would like follow-up to help me apply what I learned.

1	2	3	4	5	6	7	8	9	10

□ The presentation style of the instructor contributed to my learning experience.

1	2	3	4	5	6	7	8	9	10

Open-ended Questions

□ How could this program be improved?

□ Please share any other comments you may have.

LEVEL 2: LEARNING

Knowledge

Knowledge is measured primarily with formative exercises during the session or a quiz near the end. At the end of the session (or shortly thereafter), you also may choose to ask a few of the following open-ended questions.

Open-ended Questions

□ What are the major concepts that you learned during this session?

□ What were the most meaningful concepts you learned?

Skills

Skill is measured with activities and demonstrations during the session that show that participants can perform the skill. With the exception of writing skills, written questions cannot measure skill level accurately.

Attitude

Rating Scale Questions

□ I believe this course's content is important to succeeding on the job.

1	2	3	4	5	6	7	8	9	10

□ I believe it will be worthwhile to apply what I learned on the job.

1	2	3	4	5	6	7	8	9	10

Open-ended Questions

□ Why do you think this course was offered?

□ Explain the importance of applying what you learned on the job.

□ What are your thoughts about applying what you learned?

Confidence

Rating Scale Questions

□ I understand what resources are available to me on the job as I apply this new knowledge.

1	2	3	4	5	6	7	8	9	10

□ I feel confident about applying what I learned back on the job.

1	2	3	4	5	6	7	8	9	10

☐ *Optional add-on*) If you circled 6 or below, check all that apply. My confidence is not high because:

☐ I do not have the necessary knowledge and skills.

☐ I do not have a clear picture of what is expected of me.

☐ I have other, higher priorities.

☐ I do not have the necessary resources to apply what I've learned.

☐ I do not have the human support to apply what I've learned.

☐ The training didn't give me confidence to apply what I learned.

☐ I don't think what I learned will work.

☐ There is not an adequate system of accountability to ensure the application of what I learned.

☐ Other (please explain): _____

□ **Instructions:** For each objective (listed on the following page,) rate yourself after the training using the following scale:

1 - Little or no understanding of the objective
2 - Basic understanding of the objective, but cannot perform it
3 - Understands the objective and can perform it with assistance
4 - Can perform the objective without assistance
5 - Can perform the objective and teach others to do it

Provide the appropriate rating **before** the training, and **now** (after the training).

Please provide comments to explain your ratings.

Before the program	Performance Objective	After the program
	Leadership Competences	
Comments:		
	Multiculturalism Competences	
Comments:		
	Professional Applicability of the Program	
Comments:		

Open-ended Questions

□ Please comment on how confident you feel about applying what you've just learned on the job.

Commitment

Rating Scale Questions

□ I am committed to applying what I learned to my work.

1	2	3	4	5	6	7	8	9	10

(Optional add-on) If you circled 6 or below, check all that apply. My commitment is not high because:

☐ I do not have the necessary knowledge and skills.

☐ I do not have a clear picture of what is expected of me.

☐ I have other, higher priorities.

☐ I do not have the necessary resources to apply what I've learned.

☐ I do not have the human support to apply what I've learned.

☐ I don't think what I learned will work.

☐ There is not an adequate system of accountability to ensure the application of what I learned.

☐ Other (please explain): _____

Open-ended Questions

□ How committed are you to applying what you have learned back on the job?

□ What barriers to applying what you learned do you anticipate? What could be done to remove them?

□ What specific skills do you plan to apply when you get back to your job?

□ What additional support will you need to implement what you learned?

PREDICTIVE LEVEL 4: RESULTS

Rating Scale Questions

□ I believe I will see an impact in the following areas as I consistently apply what I learned (check all that apply):

☐ Increased productivity

☐ Improved quality

☐ Increased personal confidence

☐ Increased customer satisfaction

☐ Stronger relationships with my colleagues

☐ More respect from my peers

☐ Better organization in my work

☐ Other (please explain): _____

Open-ended Questions

□ What specific outcomes are you hoping to achieve as a result of your efforts?

□ What initial successes will likely occur as you consistently apply what you learned?

□ What types of positive impact do you expect to see as a result of applying what you learned back on the job?

Appendix C: Ethics clearance letter

UNIVERSITY of the WESTERN CAPE

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21 August 2017

Mr A Chikware
Information Management
Faculty of Economic and Management Sciences

Ethics Reference Number: HS/17/7/4

Project Title: Exploring and describing the experiences of graduates from a Masters in Health Information Management programme.

Approval Period: 21 August 2017 – 21 August 2018

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval. Please remember to submit a progress report in good time for annual renewal.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

PROVISIONAL REC NUMBER - 130416-049

Appendix D: Consent form

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E-mail: jkariuki@uwc.ac.za and 3008386@myuwc.ac.za

CONSENT FORM

Title of Research Project: **Evaluating the Masters in Health Information Management program**

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits.

Participant's name

Participant's signature

Date:

Appendix E: Information sheet

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INFORMATION SHEET

Project Title: Evaluating the Masters in Health Information Management program

What is this study about?

This is a research project being conducted by Arthur Chikware at the University of the Western Cape. We are inviting you to participate in this research project because you participated in in the Masters in Health Information Management (HIM) Degree. The purpose of this research project is to explore the outcomes of the Masters' program in developing participants' health information management skills. The research intends to explore participants' perception on the effect of the program towards their professional careers.

What will I be asked to do if I agree to participate?

You will be asked to participant in a semi—structured and individual interview over the phone, skype or in person depending on your location and availability, in allocation where you are comfortable and feasible to both of us. The interviews will be conducted in English and they will be approximately 30 minutes in duration.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure anonymity, (1) your name will not be included on the datasheets and other collected data; (2) a code will be placed on the datasheet and other collected data; (3) through the use of an identification key, the researcher and supervisors will be able to link your datasheet to

your identity; and (4) only the researcher and supervisors will have access to the identification key.

To ensure your confidentiality, hardcopy datasheets will be scanned and saved with all information collected electronically on a password-protected computer. The researcher only knows the password. Datasheets will be stored in a locked and secure filing cabinet only accessible to the supervisor. No document or file will be saved under the name of the participant. If we write a report or article about this research project, your identity will be protected.

What are the risks of this research?

There may be some risks from participating in this research study. All human interactions and talking about self or others carry some amount of risks. We will nevertheless minimise such risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention. However, there are no foreseeable risks in participating in this study

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about the practical outcomes achieved in participating in the Health information Management Masters' degree. We hope that, in the future, other people might benefit from this study through improved understanding of benefits of health information management competences acquired through the HIM degree program.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

What if I have questions?

This research is being conducted by ***Arthur Chikware, Department of Information Systems,*** at the University of the Western Cape. If you have any questions about the research study itself, please contact ***Arthur Chikware,*** at: _+27 84 771 6640 and email; 3008386@myuwc.ac.za and Dr James Njenga *at;+27 21 959 3680 and email:* jkariuki@uwc.ac.za , Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

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Dr. Mmaki Jantjies

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Dean of the Faculty Economics and Management Sciences:

Prof Kobus Visser

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This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.

Appendix F: Editorial Certificate

Idea Corporation t/a

AQUARIAN PUBLICATIONS

12 August 2019

To whom it may concern

Dear Sir/Madam

RE: Editorial certificate

This letter serves to prove that the thesis listed below was language edited for proper English, grammar, punctuation, spelling, as well as overall layout and style by myself, publisher/proprietor of Aquarian Publications, a native English speaking editor.

Thesis title

EVALUATING A MASTERS PROGRAMME IN HEALTH INFORMATION MANAGEMENT

Author

Arthur B. Chikware

The research content, or the author's intentions, were not altered in any way during the editing process, and the author has the authority to accept, or reject my suggestions and changes.

Should you have any questions or concerns about this edited document, I can be contacted at the listed telephone and fax numbers or e-mail addresses.

Yours truly

E H Londt
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