



**The effect of internal controls on environmental health risks within
the informal settlements of Witzenberg, Western Cape Province**

by

THEMBELA NAMA

Dissertation submitted in fulfilment of the requirements for the degree

Master of Internal Auditing

in the Faculty of Business and Management Sciences

at the Cape Peninsula University of Technology

Supervisor: Prof J. Dubihlela

Co-supervisor: Dr D. Dubihlela

District Six, Cape Town

December 2021

CPUT copyright information

The dissertation may not be published either in part (in scholarly, scientific or technical journals), or as a whole (as a monograph), unless permission has been obtained from the Cape Peninsula University Technology.

DECLARATION

I, Thembela Beverly Nama, student number 203023501, declare that,

- (i) The research reported in this dissertation, except where otherwise indicated, is my original work.
- (ii) This dissertation has not been submitted for any degree or examination at any other university.
- (iii) This dissertation does not contain other persons' data, pictures, graphs, or other information, unless specifically acknowledged as being sourced from other persons.
- (iv) This dissertation does not contain other persons' writing, unless specifically acknowledged as being sourced from other researchers. Where other written sources have been quoted, then: a) their words have been re-written, but the general information attributed to them has been referenced; b) where their exact words have been used, their writing has been placed inside quotation marks, and referenced.
- (v) Where I have reproduced a publication of which I am an author, co-author, or editor, I have indicated in detail which part of the publication was actually written by myself alone and have fully referenced such publications.
- (vi) This dissertation does not contain text, graphics or tables copied and pasted from the Internet, unless specifically acknowledged, and the source being detailed in the dissertation and in the References sections.

Signed: **Date:**

ABSTRACT

Informal settlement developments and establishment indicate that there are several reasons why they exist. Informal settlements are now a permanent challenge that exert undesirable effects on the environment. The people and the land which they inhabit in these informal settlements exposes them to environmental hazards.

The characteristics of informal settlements are the lack of basic services, pollution, overcrowding and poor waste management. Therefore, these characteristics have a negative influence on the environment, posing danger and vulnerability to health problems, exposing them to the expanding burden of diseases.

People living in informal settlements encounter challenges of service delivery. This is primarily because land was inhabited unlawfully and had an adverse effect on the environment. Informal settlements experience a shortage of basic services. This includes inadequate sanitation, which leads to pollution. Also, waste removal is a problem and triggers land pollution and continuous communicable disease risks.

The study followed a quantitative research approach. Questionnaires were administered to Witzenberg local municipality officials and residents of the Chris Hani informal settlement. The findings proved the hypothesis as it was found that the lack of internal controls of Witzenberg local municipality do have a negative influence the level of basic service delivery.

Section 24 of the Constitution of South Africa provides that everyone has the right to an environment that is not detrimental to their health or wellbeing (South Africa, 1996a). This needs to be implemented within the Chris Hani informal settlement to prevent negative impacts on the environment, which desperately needs the development of change.

The lack of internal controls pertaining to service delivery in informal settlements greatly increases the risks and hazards to the health of the residents and the environment.

ACKNOWLEDGEMENTS

To express my appreciation and gratitude, I give thanks to everyone who contributed to the completion and success of this dissertation.

First and foremost, my father, the Lord my creator. Thank You God for giving me strength, hope, faith and such a wonderful support system.

Thank you to the following people:

- My loving mother Mrs. Nosisana Nama and my sister Bulelwa Casper who has prayed and wished nothing but the best for me.
- My supervisors, Dr. Leon Gwaka and Prof. J. Dubihlela, this would not have been possible if it was not for you supporting me and guiding me through my study and for being so understanding. Thank you for the time invested in assisting me making my dream come true.
- Cheryl Thomson, my Language Editor, thank you for your dedication and determination in making my work up to a great standard.
- Thank you to my family at large for the continued love and support, especially my partner Ashley Gubanja, my brother Bulumko Nama and my daughter Eyamintando Nama.
- Mr. Johnny Jacobs from the Witzenberg local municipality to whom I could turn for assistance at any time. Thank you.
- Thank you to the Chris Hani residents who willingly gave of their time to answer my questions.
- Last but not least, I would like to extend a very special thanks to Miss Nicolette Snyders from Cape Winelands District Municipality who supported me through every step of my journey. Thank you for all your assistance in making my dream come true.

TABLE OF CONTENTS

DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENTS	iv
LIST OF FIGURES	ix
LIST OF TABLES	ix
ACRONYMS AND ABBREVIATIONS	x
CLARIFICATION OF BASIC TERMS	xii
CHAPTER 1 NATURE AND SCOPE OF THE STUDY	1
1.1 Introduction	1
1.2 Problem statement.....	2
1.3 Motivation/rationale for the study.....	3
1.4 Significance of the study	4
1.5 Aim of the study	4
1.6 Objectives of the study	4
1.6.1 Primary objective	4
1.6.2 Secondary objectives.....	4
1.7 Research questions	5
1.7.1 Main research question	5
1.7.2 Secondary research questions	5
1.8 Literature review.....	5
1.9 Definition of informal settlements	5
1.10 Research methodology	7
1.11 Research design	8
1.12 Study area.....	8
1.13 Sampling.....	8
1.14 Data analysis	9
1.15 Ethical considerations	9
1.16 Outline of the study	9
1.17 Limitations of the research	10
CHAPTER 2 LITERATURE REVIEW	11
2.1 Introduction	11
2.2 Theoretical context.....	11
2.2.1 The Institutional Theory	11
2.2.2 The Stakeholder Theory	11
2.2.3 Integration of theories	12

2.3	Development of South African local government	13
2.4	South Africa's municipalities.....	13
2.5	Authority of the municipalities of South Africa.....	14
2.6	The Study Area: Witzenberg Municipality	17
2.6.1	Vision of Witzenberg Municipality	17
2.6.2	Mission of Witzenberg Municipality	17
2.6.3	Value system of Witzenberg Municipality.....	17
2.6.4	Witzenberg Municipality subscribes to the Batho Pele principles	18
2.6.5	Witzenberg Municipality financial performance outcomes	21
2.7	Definition of internal audit.....	21
2.8	History of internal audit in South African local government.....	22
2.9	Institute of Internal Auditors Standards – internal audit roles.....	22
2.10	Institute of Internal Auditors Standards – guidelines for internal audit.....	23
2.11	Internal control evaluation	23
2.12	Risk management process as the role of internal audit	24
2.12.1	Assurance services.....	25
2.12.2	Consulting services.....	26
2.13	Corporate governance as the role of internal audit.....	26
2.14	MFMA regulations within internal audit.....	27
2.15	Internal audit – compliance with applicable regulations	27
2.16	Internal control perception.....	28
2.17	Conceivable complications of an internal control system.....	29
2.18	Environmental health	29
2.18.1	Section 24(a) of the South African Constitution.....	29
2.18.2	Section 24(b) of the South African Constitution: Sustainable growth.....	30
2.18.3	Section 27 of the South African Constitution: Freedom of access to basic services	30
2.19	Definition of informal settlements	31
2.20	Definition of environmental health hazards.....	32
2.21	Chapter summary.....	33
CHAPTER 3 RESEARCH METHODOLOGY.....		36
3.1	Introduction	36
3.2	Research paradigm/philosophy	36
3.3	Research approach.....	37
3.4	Quantitative research	37
3.5	Research design	38
3.6	Population	39

3.6.1	Sample	40
3.6.2	Sampling method.....	40
3.7	Data collection instrument	43
3.7.1	Questionnaires	43
3.7.2	Pilot test.....	45
3.8	Procedure for data collection.....	45
3.9	Data analysis	46
3.10	Validity and reliability.....	46
3.10.1	Validity.....	46
3.10.2	Reliability	48
3.11	Ethical considerations	49
3.12	Chapter summary.....	49
CHAPTER 4 DATA ANALYSIS AND PRESENTATION OF RESULTS		51
4.1	Introduction	51
4.2	Analysis of data.....	51
4.2.1	Profile of respondents.....	52
4.2.2	Gender composition of the sample	53
4.2.3	Age of respondents.....	55
4.2.4	Language of the respondents	55
4.2.5	Educational status of the respondents	57
4.2.6	Respondents' years residing in Chris Hani informal settlement.....	57
4.2.7	Employment status	58
4.2.8	Marital status	59
4.3	Inferential statistics.....	60
4.3.1	Normality analysis-skewness and kurtosis.....	60
4.3.2	Reliability and validity analysis.....	61
4.3.3	Internal consistency reliability	61
4.3.4	Scope of service delivery in the Chris Hani informal settlement	62
4.3.5	Factors that prevent environmental controls in Chris Hani	63
4.3.6	Environmental risk controls in Chris Hani.....	65
4.3.7	Degree of service delivery among the different Chris Hani demographics	66
4.3.8	Environmental controls among different Chris Hani demographic groups	67
4.4	Chapter summary.....	68
CHAPTER 5 FINDINGS, RECOMMENDATIONS AND CONCLUSIONS		70
5.1	Introduction	70
5.2	Revisiting the objectives.....	70
5.3	Overview	71

5.3.1	Methodology employed.....	71
5.3.2	Summary of the results.....	71
5.3.3	Major environmental hazards that affect the Chris Hani informal settlement ...	72
5.3.4	Environmental risk controls and practices in the Chris Hani informal settlement	73
5.3.5	Relationship between respondent characteristics and risk management practices.....	74
5.3.6	Interconnection between controls and health hazards in the Chris Hani informal settlement.....	74
5.3.7	Obstacles to effective environmental risk management	74
5.3.7.1	Community participation	75
5.3.7.2	Provision of basic services.....	75
5.3.7.3	Planning interventions	75
5.3.7.4	Integrated development planning.....	75
5.3.7.5	Environmental and planning education	75
5.3.8	Critical factors affecting sustainability within Chris Hani informal settlement ...	76
5.3.9	Internal control processes of health hazards vs the needs of respondents	76
5.3.10	Risk control and its contribution towards enhancing sustainable livelihoods ...	76
5.4	Research implications	77
5.4.1	Implications for the academic fraternity.....	77
5.4.2	Managerial implications	78
5.4.3	Policy implications	79
5.5	Study limitations	79
5.5.1	Delimitations.....	79
5.5.2	Limitations	79
5.5.2.1	Participants and geographical area.....	79
5.5.2.2	Time limit.....	80
5.6	Suggestions for future research	80
5.7	Concluding remarks	80
REFERENCES		83
APPENDIX A: CPUT ETHICAL CLEARANCE.....		95
APPENDIX B: QUESTIONNAIRE 1 – CHRIS HANI RESIDENTS.....		96
APPENDIX C: QUESTIONNAIRE 2 – WITZENBERG MUNICIPAL OFFICERS		102
APPENDIX D: SAMPLE OF INFORMED CONSENT LETTER		106
APPENDIX E: GRAMMARIAN LETTER		107

LIST OF FIGURES

Figure 2.1: Map of Witzenberg area.....	Error! Bookmark not defined.
Figure 2.2: Witzenberg socio-economic profile.....	Error! Bookmark not defined.
Figure 2.3: Witzenberg financial performance	21
Figure 4.1: Respondents' gender composition	54
Figure 4.2: Age of respondents	55
Figure 4.3: Language of respondents	56
Figure 4.4: Educational status of respondents	57
Figure 4.5: Years resident in the Chris Hani informal settlement.....	58
Figure 4.6: Employment status of respondents	59
Figure 4.7: Marital status of respondents	60

LIST OF TABLES

Table 3.1: Table for determining sample size.....	42
Table 4.1: Demographic analysis	52
Table 4.2: Normality analysis	61
Table 4.3: Cronbach's Alpha reliability test.....	62
Table 4.4: Service delivery effectiveness	63
Table 4.5: Analysis of factors that impede environmental risk control activity.....	64
Table 4.6: Analysis of research objectives; one sample test (test value=3)	66

ACRONYMS AND ABBREVIATIONS

AC	Audit Committee
ACCA	Association of Chartered Certified Accountants
AO	Accounting Officer
AT	Agency Theory
CAE	Chief Audit Executive
CEO	Chief Executive Officer
CG	Corporate Governance
CIA	Certified Internal Auditor
CIMA	Chartered Institute of Management Accountant
CPA	Certified Public Accountant
COSO	Committee of Sponsoring Organisations of the Treadway Commission
CPUT	Cape Peninsula University of Technology
DMSLP	Disaster Mitigation for Sustainable Livelihoods Programme
DoRA	Division of Revenue Act
ERM	Enterprise Risk Management
GGLN	Good Governance Learning Network
HIA	Health Impact Assessment
IAF	Internal Audit Function
IDP	Integrated Development Plan
IDSA	Institute of Directors South Africa

IFC	The International Finance Corporation
IIA	Institute of Internal Auditors
IMF	International Monetary Fund
IPPF	International Professional Practices Framework
ISA	Intersectoral Action
ISPPIA	International Standards for the Professional Practice of Internal Auditing
IT	Institutional Theory
MFMA	Municipal Finance Management Act
PAAB	Public Accountants and Auditors Board
PAC	Public Accounts Committee
PECG ACT	Public Entities Corporate Governance Act
PFMA	Public Finance Management Act
PWC	Price Waterhouse Coopers
UMWE	Ugandan Ministry of Water and Environment
US	United States
USA	United States of America

CLARIFICATION OF BASIC TERMS

The following are key terms as applied in this study:

POLICYMAKERS: The term 'policymaker' is widely used to refer to people who have political influence that directly develops or changes policies, regulations, rules and directives.

COMMUNICABLE DISEASE: Communicable diseases are illnesses caused by viruses or bacteria that people spread to one another through contact with contaminated surfaces, bodily fluids, blood products, insect bites, or through the air.

INFORMAL SETTLEMENTS: areas where groups of housing units have been constructed on land that the occupants have no legal claim to or occupy illegally.

INTERNAL CONTROL: is a process for assuring an organization's objectives in operational effectiveness and efficiency, reliable financial reporting, and compliance with laws, regulations and policies.

INTERNAL AUDIT: is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations.

CORPORATE GOVERNANCE: refers to the way in which companies are governed and to what purpose. It identifies who has power and accountability, and who makes decisions. It is, in essence, a toolkit that enables management and the board to deal more effectively with the challenges of running a company.

URBANISATION: is the process through which cities grow, and higher and higher percentages of the population come to live in the city.

LOCAL GOVERNMENT: authority to determine and execute measures within a restricted area inside and smaller than a whole state.

PUBLIC INSTITUTIONS: means any entity established or controlled by the federal government, state government, or a local government or municipality, including, but not limited to, institutions of higher education and related research institutions.

INTEGRATED DEVELOPMENT PLAN: is a super plan for an area that gives an overall framework for development. It aims to coordinate the work of local and other spheres of government in a coherent plan to improve the quality of life for all the people living in an area.

SERVICE DELIVERY: can be defined as any contact with the public administration during which customers – citizens, residents or enterprises – seek or provide data, handle their affairs or fulfil their duties.

LIVING CONDITIONS: refers to the circumstances of a person's life—shelter, food, clothing, safety, access to clean water, and such. An alternative might be "conditions for life," which refers to circumstances needed for physical or biological life to exist—water, energy, a suitable environment.

CHAPTER 1

NATURE AND SCOPE OF THE STUDY

1.1 Introduction

The landscape of cities in Africa has been radically reformed by urbanisation and inner-city development. The growing majority of the urban inhabitants now reside in informal settlements, where there is an absence of basic services and public facilities. Healthcare systems and other emergency services are unable to provide these services due to inaccessibility to these settlements (dpicampaigns, 2020) . This exposes residents to great health risks and makes them vulnerable to disasters. These conditions are combined with social and economic weaknesses, which result in wellbeing injustices (York, 2015) . Determined by Africa's significant and complicated load of illness and extreme levels of injustice, notwithstanding demanding requirements, urban wellbeing, and urban wellbeing fairness have not been established as important research and policy priorities in Africa . Like many other African countries, South Africa trails behind in addressing these subjects.

Across major cities in South Africa, informal settlements remain an eyesore. These settlements are without satisfactory housing and essential benefits. Non-standard housing is built in non-compliance with lawful practices (Housing Development Agency [HDA], 2013:53). The poor make use of recovered items like wood, tin, corrugated iron and plastic to construct their houses. As noted by the United Nations Department of Economic and Social Affairs (2014:3), this rapid urbanisation process occurs mainly in cities and towns in the south of the world, posing a major challenge to both the government and the citizens because most of the rapidly developing areas are already exposed to high levels of poverty, unemployment and environmental health problems.

While informal settlements present several challenges to the policymakers, individuals staying in these informal settlements are entitled to an acceptable level of accommodation. As a result, local government faces tremendous pressure to provide efficient and formal accommodation to their residents (Visagie and Turok, 2020) . Admittedly, the local governing entities in South Africa are characterised by failure to provide rudimentary accommodation to most of the informal settlements. As a result, this is often met by protests and civil unrest, which, to a preponderant extent, negatively impacts the societal paradigm and the country's economic performance (Turok, Visagie and Swartz, 2021). The rapid development of cities has a negative impact on government and on public organisations to provide sufficient, acceptable, and affordable housing and public services for the poor, especially in informal settlements. As highlighted by Turok, Visagie and Swartz (2021) uncertain employment, being without a job, no housing prospects, poverty, social and economic exclusion, and the necessity to be near

to resources and facilities have led the poor to claim their rights to the city through the establishment of informal settlements.

Chris Hani informal settlement, situated in Tulbagh town in the Witzenberg Boland region, is one such informal settlement in Witzenberg, which suffers from severe environmental risks and community protests (Wasserman, Chuma and Bosch, 2018) . The conditions in which people are living are very harsh, relating to the exposure to environmental risks in the informal settlement, including poor waste management, pollution, poor sanitation and unhygienic open spaces as noted by Lall, Henderson and Venables (2017). The demands for daily survival are high, which position the right to a clean environment second to poverty survival strategies. The long-term effects of the harsh living conditions are not understood, especially by the local municipality. This thus becomes a threat to the environment and the community of Chris Hani (Western Cape Government Provincial Treasury Socio-economic Profile Witzenberg Municipality 2015 Working Paper, n.d.).

As noted by Modimowabarwa Kanyane (2014) the researcher aimed to determine the interconnection between internal control and environmental health hazards in the Chris Hani informal settlement to better understand how the residents of Chris Hani perceive their environment with regards to Section 24 of the Constitution, which indicates that “everybody has the right to an environment that is not harmful to his or her health or wellbeing” (South Africa, 1996a). Drawing from data found during the research process, the objective was to understand the internal controls of the mandate of Witzenberg local municipality to provide basic services to the Chris Hani informal settlement and the environmental hazards to which the community is exposed. This understanding enabled the researcher to make recommendations on interventions to improve the internal controls of basic service delivery and mitigate the environmental risks.

1.2 Problem statement

The South African local government has failed to grasp , 1994- rapid urban growth requires supplementary investment in housing. As noted by Fox (2014:194), informal settlements and slum conditions continue to characterise the housing norm, rather than the exception. This has increased the number of families living in informal settlements without acceptable housing infrastructure.

Poor urban residents are increasingly exposed to natural disasters that influence the connection between the community and its biotic environment. Therefore, understanding the doubts in the development of political, socio-economic, and interdependent environmental procedures is crucial in developing the strength of cities to climate change as indicated by Satterthwaite et al. (2018:249). It develops an accommodation concern if children playing outdoors contract diarrhoea from consumption of pathogens from the discharge of faecal

matter that pollutes the land on which they play. In these circumstances it is the household that offers shelter and safety in contrast to exposure to injury, climate, and illness. Economic challenges in informal settlements are much more than a simple lack of income or unemployment (Turok and McGranahan, 2013). There are sanitation issues, overcrowding issues, increasing levels of school dropouts and growing levels of stress on the physical wellbeing and environment of low-income residents. Residents of informal settlements have no proper accommodation, which exposes them to opportunistic diseases. Many acknowledge the ingenuity and creativity in the urban poor's effort to forge spaces, albeit imperfect, for themselves (Gilbert, 2010; Myers, 2011; Turok & McGranahan, 2013).

There is lamentably limited governance in South African informal settlements and a crisis of confidence in leadership, with poor distribution of housing. People no longer believe that the government will keep its promises to provide adequate accommodation. South Africa inherited a country with inequalities and backlogs in the provision of basic accommodation, access to potable clean water, appropriate sanitation, and electricity. To efficiently deal with these backlogs, the South African government needs to exercise good governance and efficient utilisation of available resources. Poor governance involves poor financial management, unauthorised appointments and misguided prioritizing in accommodation distribution. The consequences of poor governance in local government involves a high level of violence, a decrease in municipal housing payments and the deterioration in accommodation distribution (Human Rights Commission Investigative Hearing Report Access to Housing, Local Governance and Service Delivery, 2015).

Earlier studies have not addressed the link between internal control and accommodation distribution.

The key research problem in this study is:

The interconnection (relationship) between internal controls and health hazards in the Chris Hani informal settlement in the Witzenberg Boland Region.

1.3 Motivation/rationale for the study

Informal settlements are commonplace in many of the South African urban areas. As in many other parts of the developing world, in South Africa, different reasons are provided for the establishment of informal settlements as well as their appalling state. Hence, concurring to the increasing discontent evident in the ongoing so-called service delivery protests or community-based protests in South Africa (Good Governance Learning Network [GGLN], 2011; Nyar & Wray, 2012; Human Sciences Research Council of South Africa [HSRC], 2018).

This study is of paramount importance in that it evaluates the relationship between internal control and accommodation distribution from the Witzenberg Local Municipality to the Chris

Hani Informal settlement, and whether an efficient and effective approach by the Witzenberg Local Municipality can improve the living conditions of the Chris Hani residents and mitigate the effects exposure to environmental health risks.

1.4 Significance of the study

This study complements the current body of knowledge on accommodation distribution mechanisms within informal settlements for which the Witzenberg local municipality is responsible. This study provides a holistic viewpoint from an internal audit perspective on why the current control systems to distribute accommodation to the informal settlements are not effective and what can be done to improve them to reduce the impact of environmental health risks in the informal settlements of the Witzenberg area.

The communities, the Witzenberg Local municipality, and Councillors in the informal settlements of the Witzenberg area will benefit from knowledge gained from this study. This will assist in ensuring that the 1996 South African Constitution provisions are implemented, that efficient control measures for accommodation distribution are maintained and the confidence of the community in the local municipality is repaired. The findings of the study provide relevant information on the efficacy of internal controls in good corporate governance in the Witzenberg local municipality from an internal audit perspective. In addition, the study makes recommendations for improving the efficacy of internal controls in the Witzenberg local municipality.

Considering the magnitude of unethical conduct in public institutions, the results of the study will give meaningful input to the existing body of knowledge on the Witzenberg region. These findings could provide corrective measures against unethical conduct in public institutions (Kretzmann, 2021).

Finally, the results of the study could be of vital importance to policymakers in public and private institutions to assist in formulating new policies and evaluating existing ones in reinforcing the practice of good corporate governance.

1.5 Aim of the study

The study aims to determine whether there is a relationship between internal controls and health hazards in the Chris Hani informal settlement in Witzenberg.

1.6 Objectives of the study

1.6.1 Primary objective

- To investigate the interconnection (relationship) between internal controls and health hazards in the Chris Hani informal settlement in Witzenberg.

1.6.2 Secondary objectives

- To identify the nature of the environmental health risk present in the Chris Hani informal settlement.
- To identify current internal controls at the Witzenberg local municipality; and
- To identify internal control strategies that the local municipality and community can implement to mitigate the environmental health hazards.

1.7 Research questions

1.7.1 Main research question

- What is the interconnection (relationship) between internal controls and the health hazards in the Chris Hani informal settlement in the Witzenberg, Boland Region?

1.7.2 Secondary research questions

- What is the nature of the environmental health risks present in the Chris Hani Informal settlement?
- What are the current internal controls of the Witzenberg local municipality?
- What internal control strategies can be recommended for implementation from the Witzenberg Local Municipality and community of the Chris Hani Informal settlement to mitigate the environmental health jeopardy?

1.8 Literature review

Although extensive literature exists on informal settlements in several contexts in South Africa and globally and despite years of research conducted on informal settlements, there remain gaps regarding the interconnection between internal controls and the exposure to health hazards in the South African context. This research builds on Lombard's (2014:3) argument that the lack of understanding regarding informal settlements is reproduced in dissertations that cover some problematic assumptions. Understanding informal settlements and their residents can assist in the development of appropriate interventions.

1.9 Definition of informal settlements

Informal settlements are characterised by housing units that exist on land that is not proclaimed as residential land, they consist of informal dwellings on the outskirts of towns or vacant or pockets of underutilised land in urban areas as noted by Abubakar, Romice and Salama (2019). In literature, the word slum is often used in a general way to include informal settlements and a wide range of other low-income housing settlements that are characterised by poor housing, overcrowding, a lack of basic services and insecure tenure (Staff Reports, 2019) . Informal settlements are labelled as a temporary by-product of modernisation, an alternative definition in which informal settlements are interpreted as having the appearance of separate transformation in which urban population growth overtakes urban economic and institutional development.

The physical environment and the sustainability of informal settlement communities in informal settlements suffer many human-made disasters and natural environmental hazards due to poverty, social and economic exclusion, hunger, unemployment and a lack of access to basic services. Gray and Bilsborrow (2013:1221) report that poor environmental conditions have a profound impact on human wellbeing, while human decisions can negatively impact the wellbeing of the natural environment.

South African cities attract thousands of people every year, searching for work and a better life. UN-Habitat (2016:1) indicates that rapid urbanisation presents a trend where more and more people are flocking to cities that lack the capacity, resources, and opportunities to equitably sustain all people. The growth of informal settlements has worsened the challenge of achieving housing demands (Sexwale, 2013:01).

Vlahov et al. (2007:19) contend that good governance is a key factor of urban health. Kjellstrom and Mercado (2008:561) indicate that "good governance, good accommodation, and integrated approaches/interventions are key pathways into reducing the health inequity". Kjellstrom and Mercado continue, that the systems, organisations and processes that promote a better and more fair distribution of health facilities in urban areas are identified as critical pathways for reducing health inequity in cities. According to Turok et al. (2017:10), the numerical significance of people living in informal settlements means that the global aspirations of ending poverty and ensuring adequate living standards for all are intricately bound by the prevailing static conditions in informal settlements.

Environmental health risks highlighted by Zerbo, Delgado and González (2020) can cause health threats to the residents of informal settlements. Different factors contribute to environmental health risks such as economic, physical, political and environmental factors. Diverse strategies can be put in place at the household level to reduce various environmental health risks. Reducing environmental health risks requires an intervention from the community to take the initiative. Residents of informal settlements identify essential accommodation and infrastructure provision as important factors to ameliorating their living conditions. Informative campaigns are an integral part of the strategies designed to manage environmental health risks within informal settlements. Upgrading of informal settlements is one of the strategies designed to improve poor living conditions within informal settlements.

South African legislation needs to be implemented in an efficient, effective and economic manner to improve the living conditions of people living in informal settlements; however, a lack of commitment has been identified in some of the local government institutions. Little has been done to improve the lives of people living in informal settlements, as compared to the applicable law and regulations governing the process of basic service delivery (Simiyu, Cairncross and Swilling, 2018).

Most of the literature on internal control frameworks identifies information and communication as one of the internal control components. The smooth flow of information and communication across the Witzenberg local municipality is influenced by the nature and culture of the working relationship within the municipality at all levels. The nature and culture of the working relationship direct the municipality's activities to achieve the municipality's goals. When an effective working relationship exists in a municipality, the delegation of responsibilities is achieved and internal controls function as intended. However, a communication gap will result in the non-achievement of goals with adverse consequences to the municipality (Kretzmann, 2021).

Some internal control frameworks emphasize the detailed clarification of various internal control components, systems, and methods for their design. The internal control frameworks ignore details on how each of the components can be quantified to assess their efficacy, which causes a dilemma, for example, where two managers use different methods to quantify the same subject and arrive at different conclusions. A challenge arises in ascertaining who is right or wrong. When a benchmark for evaluation of quantified results is missing, finding the right approach becomes crucial (Ackermann, 2016).

As noted by the author above other internal control frameworks ignore details if one or more components are missing from a structure but are compensated by other controls in other components. For example, in a small function, segregation of duties is not possible but is compensated by management's involvement in the day-to-day supervision, verification and review of records and processes, to ensure that internal controls function effectively. In this situation, all components of an internal control system may not be present, but the system could still function effectively.

An internal control system is a process of integrated sets of activities originated by top management of a municipality and embedded within all the municipality's activities to achieve goals. These integrated sets of activities comprise two sets of variables—dependent and independent. At the forefront of the independent variables is the working relationship that determines the independent variables' function to achieve the outcome of the dependent variable.

1.10 Research methodology

Research methodology guides the process of research and decisions that the researcher has to take in executing the research project (Brynard & Hanekom, 2008:36). In this study, the researcher employed a quantitative method.

According to Gaffoor and Cloete (2010) quantitative methodology relates to “analytical research and intends to reach a macrocosmic statement”. Numbers are assigned to observations and data are interpreted using counting as well as quantifying things or objects.

The questionnaires were designed in such a way that the researcher was able to count the number of respondents with similar answers to a particular question.

Primary data were collected from journal articles, books, published and unpublished dissertations, management reports, Auditor-General reports, Treasury Regulations, the Public Finance Management Act (PFMA) and various online sources, as well as South African legislation. Secondary data were collected from the questionnaire survey administered to Chris Hani community residents (see Appendix B) and municipal officers of the Witzenberg local municipality (see Appendix C). The questionnaires were formulated in such a way that responses answered the research questions of the study about the processes and systems of internal control mechanisms at the Witzenberg local municipality.

Data collected were relevant to the challenges that the community of the Chris Hani informal settlement experience in the implementation of internal control mechanisms.

1.11 Research design

A cross-sectional study design was used, using a quantitative approach to data collection and analysis was applied to gain an in-depth understanding of the phenomenon under investigation (Busetto, Wick and Gumbinger, 2020).

1.12 Study area

The research area is specific to the Chris Hani informal settlement of Tulbagh, which is governed by the Witzenberg local municipality in the Boland region of the Cape Winelands.

The informal settlement of Chis Hani was identified as an area that has experienced extensive socio-economic protests in recent years, linked to issues of accommodation distribution by the Witzenberg local municipality. Furthermore, the Chris Hani informal settlement is plagued by health risks and a high number of communicable diseases. Hence, the Chris Hani informal settlement was selected as the study area, to investigate whether the lack of internal controls by the Witzenberg local municipality has contributed to the environmental health risks prevalent in the Chris Hani informal settlement.

1.13 Sampling

According to the 2015 Census (Statistics South Africa [StatsSA], 2015:4), the municipality has a population of 124,495 people in 30,305 households.

Brynard and Hanekom (2006:54) state that "Sampling is a technique employed to select a small group (the sample) to determine the characteristics of a large group (the population)". Notsi (2012:75) defines population as "any group of individuals or objects that share prevalent characteristics and represents the total of cases involved in a study".

In purposive sampling, according to (Akvo.org, 2019) the researcher selects particular elements from the population that are representative or informative about the topic of interest. Predicated on the researcher's knowledge of the population, a judgement is made about which subjects should be selected to provide the best information to address the purpose of the research. The researcher used purposive sampling to ensure that the data are valid and reliable.

For this study, the research sample consisted of 226 participants in the Chris Hani informal settlement. The sample size was derived utilising the table for determining sample size by Krejcie and Morgan (1970:608).

1.14 Data analysis

The Statistical Package for the Social Science (SPSS) version 18 was used to analyse the primary data and produce descriptive analyses of the study as means, standard deviation and frequencies. The researcher used the t-test to determine whether there was a significant difference between the two sets of scores. In addition, a one-way analysis of variance (ANOVA) was used to compare means of more than two groups of independent variables. Thereafter, the researcher explained the interconnection of the variables and how they relate to each other in the study.

1.15 Ethical considerations

Struwig and Stead (2001:66) refer to ethics as “a system of morals and rules of conduct that provide the researcher with a code of conduct guidelines on how to conduct a research in a morally acceptable way”.

Ethical research principles upheld in this study included obtaining voluntary consent from participants (see Appendix D). They were all informed that participation is purely voluntary, and they are free to withdraw from the study at any time without suffering any form of prejudice, as well as being assured of anonymity and confidentiality at all times.

Ethical approval to conduct this study was sought and granted by the Cape Peninsula University of Technology (CPUT) Ethics Committee of the Faculty of Business and Management Sciences (see Appendix A).

1.16 Outline of the study

This dissertation is structured into five chapters.

Chapter 1 presents the background and the scope of the study. The chapter outlines the problem statement, the aim of the study and the research objectives, as well as the research methodology and statistical analysis. The chapter concludes with ethical research principles and an outline of the structure of the study.

Chapter 2 explores and reviews existing literature on the topic under investigation, both local and international, as well as South African legislation relevant to the study.

Chapter 3 addresses the design and methodology applied in the study. The chapter discusses the conceptual and theoretical framework, it examines concepts and theories relevant to the study, it outlines the historical background of the study area and it supplies an in-depth analysis of the focus area of the study.

Chapter 4 analyses, interprets and evaluates the findings of the study.

Chapter 5 consolidates the findings and gives an overview of the study. The limitations of the study are stated and recommendations for further research are suggested. Concluding remarks are presented.

1.17 Limitations of the research

The researcher had limited time and limited resources so most of the research process was undertaken during the weekends.

The Chris Hani informal settlement in the Witzenberg area is an extremely politically unstable area and data collection was difficult. The geographical location and distance to travel reach the study site placed constraints on both time and resources. A further challenging consideration was that community members could perceive the researcher as being biased in the existing conflict situation in Chris Hani.

Political tensions made it difficult for the researcher to contact the Councillors of the selected areas.

The researcher was limited by only being able to take photographs on the streets because community members were not comfortable with pictures being taken of their homes.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The purpose of this literature review is to provide the reader with a general overview of informal settlements and local government pertaining to internal controls and the exposure of residents to health hazards. The first part of this chapter debates the theoretical framework on which the study is grounded. Secondly, the literature review summarises local government development, local government mandate and the internal audit definition that allows a breakdown of the roles and responsibilities of internal auditors. Thirdly, the literature review scrutinises the internal auditing role within the South African local government. The analysis is done within the context of the Institute of Internal Auditors (IIA) Standards, applicable local government regulations and legislation. The chapter concludes with a summary of relevant literature reviewed.

2.2 Theoretical context

2.2.1 The Institutional Theory

The institutional theory has gained prominence as a popular and powerful explanation for both individual and organisational actions. It is a striking theory that has been created and challenged compared to many other approaches. While its scope has certainly widened, institutional theory has often been criticised for being used mainly to explain the permanence and homogeneity of phenomena.

Oliver (1997:701) and Scott (2001:180) report that much of the emphasis in the institutional theory literature is on institution structure together with the change processes. However, an equally important but less studied phenomenon is de-institutionalisation, "the processes by which institutions weaken and disappear" (Scott, 2001:182). Scott (2001:184) emphasizes the importance of de-institutionalisation, noting that:

...it is useful to place studies on deinstitutionalisation in the broader context of institutional change, since the weakening and disappearance of one set of beliefs and practices may be related to the emergence of people, new beliefs and customs.

Institutional change and de-institutionalisation may also be subject to social pressures related to group differentiation (e.g., increasing workforce diversification), heterogeneous conflicting beliefs, and practices (such as a result of, for example, mergers) and changes in law or social expectations that may prevent from continuing the practice (e.g., taking affirmative action) (Oliver, 1997:709; Scott, 2001:186).

2.2.2 The Stakeholder Theory

An influential article by (Ulf Henning Richter and Dow, 2017) analysed stakeholder theory from a normative, descriptive, and instrumental perspective. These terms have acquired special meanings in the stakeholder theory debate and do not necessarily correspond to the more

general meanings of the terms, such as in the philosophy of science. The normative aspect is essentially ethical or moral discussions about the nature of the corporation and its obligations to society. The crucial moral question is whether the corporation's obligation extends beyond its debt to its shareholders.

The stakeholder theory assumes multiple relationships with stakeholders (e.g., employees, customers, suppliers) and therefore multiple responsibilities. Managers cannot simply maximise the economic interests of shareholders by ignoring the legitimate interests of other groups (normative argument), as in practice. In its descriptive dimension, the stakeholder theory provides a descriptive theoretical model of corporations as a centre (or network) of legitimate stakeholders and provides a conceptual language for analysing stakeholder relationships (e.g., in terms of urgency, strength, and legitimacy).

Donaldson and Preston (1995:67) report that:

The stakeholder theory is managerial in the broadest sense of the word. It not only describes existing situations or predicts causal relationships, but also recommends relationships, structures and practices that together make up stakeholder management.

2.2.3 Integration of theories

The most significant distinction between the institutional and stakeholder theories is that the institutional theory analyses the organisation, while the stakeholder theory focuses on the relations between the organisation and its stakeholders. To determine the pressure on the relationship between the stakeholders and institutions, the theorist theoretically offers the multilevel and multidimensional perspectives of stakeholders (Freeman, 1983:43).

Freeman (1983:46) noted that the stakeholder theory is often used to study environmental practices in companies because it takes into account a complex business environment that is influenced by multiple stakeholders, described as “any group or person that can or be influenced by the goals of the organization”.

The main task of stakeholder management is to convince the stakeholders that their existence is of a legitimate organization. However, the perceptions of legitimacy vary between organisations and stakeholders. Organisations must be looking for the legitimacy of stakeholders, while the stakeholders are looking for the behaviour of organisations, if acceptable, to pay attention to the organization (Hrasky, 2011:185).

Although institutional theory provides an explanation of institutional pressure at a field level, it is in its ability to categorize the influences of stakeholders in the field of an organization.

Therefore, institutional demands for improved service delivery to informal settlements have become more powerful and more extensive. Moreover, high value is the organisation's approach to prioritizing stakeholder claims that go beyond market initiatives, leading to transparency and full disclosure. In conclusion, it can be highlighted that significance and

materiality are two key parameters in the construction of an integrated model of institutional and stakeholder model. Hence therefore the institutional theory and the stakeholder theory incorporates the birth and development of the South African local government in the essence of the background to this study it aligns with the objectives of the research. The development of the South African local government is to be discussed below to provide more construction to the holistic essence of all aspects and the integration of all stakeholders into the institution and the progress and alignment to the study at hand.

2.3 Development of South African local government

There are three spheres of government within the South African Constitution, namely local, national and provincial government. These spheres are unique but they are reliant on and cohesive with each other. Chapter 7 of the South African Constitution regulates local government, but it is ruled by national and provincial governments, although it has the power to put into effect and execute its regulations.

Local government is classified according to Dear South Africa (2022) as an organ of state that is made up of municipalities, each organ of state has an executive authority to manage their own affairs. Municipalities are also granted the authority to develop their own regulations.

A municipality is characterised not only by its geographical area but also by the citizens who reside and are employed in the area. This incorporates a municipal council of elected councillors, the administrative part of personnel, the organisations within the municipality and the community.

Councillors are the drivers who provide the political path in the municipality. Together with the officials, they develop a strategic route and governance inside the municipality. The Municipal Manager is the head of the administration of the council and is responsible for managing the municipality.

2.4 South Africa's municipalities

Prior to 1994, South Africa according to Dear South Africa (2021) had more than 2,000 municipalities with a populace of approximately 52,000,000; however, currently, South Africa has a total of 278 municipalities with a mean populace of 172,000 per municipality.

Municipalities are categorised into three different categories, namely Metropolitan, Local and District. There are 8 metropolitan municipalities in South Africa, 226 local municipalities, and 44 district municipalities (South African Government, 2021:1). Section 155 of the South African Constitution indicates that the metropolitan municipalities are granted exclusive authority over their jurisdictions, while local and district municipalities share the authority over their jurisdiction (South Africa, 1996a).

Metropolitan municipalities are densely populated and are characterised by the buzzing movement of people, properties, and offerings. A metropolitan municipality is authorised to render services to the whole city. District municipalities are made up of areas that fall outside the metropolitan areas, which include between four and seven local municipalities each. Therefore, district and local municipalities are jointly accountable for the municipal affairs in an area. District municipalities must also coordinate the development of the entire district and ensure the delivery of services in that district (Dear South Africa, 2021).

A municipality title is not usually the physical name of its principal town; the regional municipality of Tlokwe, for example, is located in Potchefstroom.

2.5 Authority of the municipalities of South Africa

Municipal entities are operated by municipal councils, which are chosen by the members of the public. The chosen councillors make decisions on behalf of the public and direct the administration of the municipality. Municipalities are obligated to discuss with the communities and must include the communities in decisions as the communities are affected by municipal affairs.

Section 152 of the South African Constitution sets out the five most essential goals of municipalities: a) to provide the public with representative and responsible authorities; b) to endorse social and monetary increases in the communities; c) to endorse a nurturing and safe environment; d) to encourage public and local group participation in local authority's affairs via consultation; and e) to endorse sustainable provision of vital services to towns, which include water and sanitation, power, waste disposal, fitness and fire services, public shipping and highways, and parks.

Section 153(a) of the South African Constitution states that a municipality must structure and manage its administration, budgeting, and planning processes to give priority to the basic needs of the public and to promote the social and economic development of the community (South Africa, 1996a).

The responsibility of the municipal council is to wisely utilise resources in the public's best interest, be democratic and transparent in their governance, promote public involvement in local government affairs; deliver services and ensure that the environment is safe and nurturing. The Organised Local Government Act 52 of 1997 (South Africa, 1997b) supports the establishment of the South African Local Government Association (SALGA) to represent municipalities.

The Municipal Demarcation Act 27 of 1998 (South Africa, 1998a) identifies the municipality boundaries and wards, while the Municipal Systems Act, 117 of 1998 (South Africa, 1998b) classifies the categories of municipalities that may be established within each category.

The Local Government: Municipal Finance Management Act, 56 of 2003 (South Africa, 2003) modernised municipal budgets and financial management practices. This was done to maximise the capacity of municipalities to offer efficient and adequate services to all residents. The Municipal Finance Management Act seeks to encourage the accountability of managers.

Under Section 2 of the Municipal Systems Act 32 of 2000 (South Africa, 2000a), a municipality holds legislative and government authority within a defined location that is made up of the community, political structures, roles in its community and it is a legal entity. This Act describes the legal existence of municipalities and communities and simplifies the executive and legislative powers of municipalities. The aim is to improve the effectiveness of local government using resources, planning and performance management.

In achieving municipal objectives, planning is crucial for municipalities. (LOCAL GOVERNMENT, n.d.) opines that the Integrated Development Plan (IDP) is South Africa's fundamental tool for local planning. It presents municipalities with a mechanism to work within their budgets, develop, implement and achieve strategic and sectoral goals, programmes and tasks that are relevant to municipal government activities.

The Local Government Transition Act 209 of 1993 (South Africa, 1993a) is the basis and guideline for local authorities' duties to introduce integrated development planning via the compilation capacity of an IDP report. The Local Government Transition Amended Act 97 of 1996 (South Africa, 1996c) states that the IDP is the key development tool that guides the municipalities' decision-making methods.

The IDP is the method used by municipalities to formulate a strategic development plan, controlling all management, planning, investments, development, and implementation of decisions, taking into consideration the contributions of all the stakeholders. The IDP marks departmental divisions by connecting the institutional and economic planning, physical and social mechanisms of planning and improvement with management structures. It also incorporates planning in diverse administration categories and enforces the spirit of cooperative governance within government.

According to the South African Constitution, the government is obligated to take practical action using its available sources to ensure that all South Africans gain access to education, acceptable shelter, healthcare, food, water, safety and security (South Africa, 1996a). Evolving local government can be realised through the development of a worthy integrated development plan (IDP).

In 2000 the Local Government Municipal Systems Act 32 of 2000 (South Africa, 2000a) came into effect and section 25(1) of the Act, indicates that each municipal council is required after the start of its elected term to implement a single strategic plan for the development of the municipality which will:

- a) Connect and manage plans and take into consideration suggestions for the growth of the municipality.
- b) Bring into line the municipal resources and capacity of the municipal capital and functionality with the task's implementation.
- c) Establish policies on a wide-ranging foundation on which the annual budget must be based; and
- d) Require municipal legislation which is well-suited with national and provincial development plans.

Consequently, the Municipal System Act is the primary regulation leading integrated development planning and municipalities are bound by it. Related policy documents and legislation regarding integrated development planning are listed below:

- a) Tourism Act 72 of 1993 (South Africa, 1993b).
- b) Reconstruction and Development Programme (RDP) (South Africa, 1994).
- c) Development Facilitation Act 67 of 1995 (South Africa, 1995).
- d) South African Constitution Act 108 of 1996 (South Africa, 1996a).
- e) Growth, Employment and Redistribution Strategy (GEAR) (South Africa, 1996b).
- f) Housing Act 107 of 1997 (South Africa, 1997a).
- g) Local Government Municipal Structures Act 117 of 1998 (South Africa, 1998b).
- h) National Environmental Management Act 107 of 1998 (South Africa, 1998c).
- i) National Water Act 36 of 1998 (South Africa, 1998d).
- j) White Paper on Local Government of 1998 (South Africa, 1998e).
- k) National Land and Transportation Transition Act 22 of 2000 (South Africa, 2000b).
- l) Disaster Management Act 52 of 2002 (South Africa, 2002).
- m) Local Government Municipal Finance Management Act 56 of 2003 (South Africa, 2003).
- n) White Paper on National Civil Aviation Policy White Paper (South Africa, 2017); and

Additional legislation that has a high impact on IDP is the Municipal Finance Management Act (South Africa, 2003) and the IDP must be aligned with the conditions of this Act.

Section 35 of the Municipal Systems Act (South Africa, 2000a) provides that the IDP, as approved by the municipal council:

- a) Is the main strategic planning tool which drives and informs all planning and development, and all decisions regarding planning, management, and development in the municipality.
- b) Binds the municipality in the implementation of its administrative authority, apart from the extent of any inconsistency between a municipality's integrated development plan and national or provincial legislation, in which case such legislation prevails; and

- c) Binds all other persons to the point that those parts of the integrated development plan that impose duties or affect the rights of those persons have been passed as a by-law.

2.6 The Study Area: Witzenberg Municipality

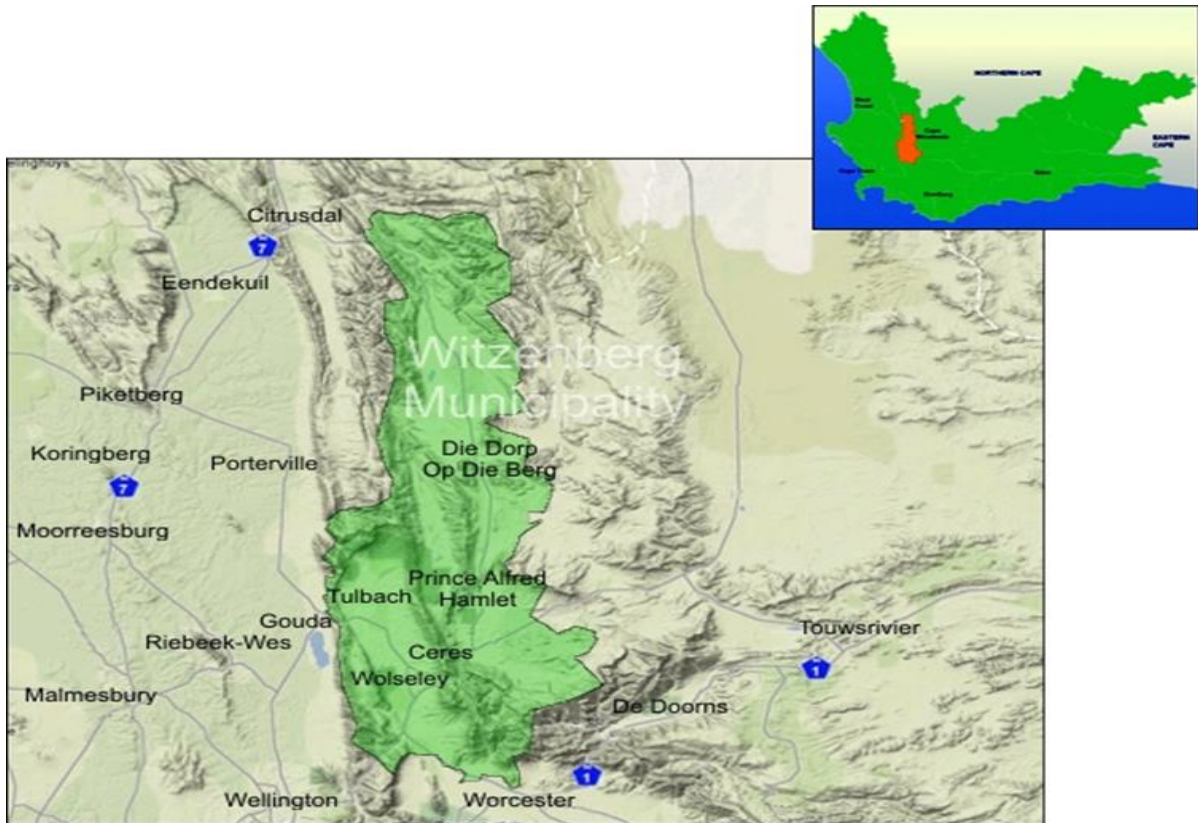


Figure 2.1 Map of Witzenberg area

Western Cape Government (2017:1)

2.6.1 Vision of Witzenberg Municipality

A municipality that creates opportunities and growth for its community.

2.6.2 Mission of Witzenberg Municipality

The Witzenberg Municipality is devoted to improving the value of life of its community by:

- a) Offering services and keeping the expenses down.
- b) Encouraging social and financial growth.
- c) The economic and effective use of funds; and
- d) Powerful investor and community participation

2.6.3 Value system of Witzenberg Municipality

- a) For the sake of the community, Witzenberg Municipality admires and upholds the South African Constitution (South Africa, 1996a).

- b) The Witzenberg Municipality is bound by the Code of Ethics for councillors and officers as stipulated in the Local Government: Municipal Systems Act (South Africa, 2000a); and
- c) The Witzenberg Municipality is dedicated to the concepts of holistic financial management.

2.6.4 Witzenberg Municipality subscribes to the Batho Pele principles

The Batho Pele principles are all about putting people first. Batho Pele is rooted in the legislative frameworks. As summarised by Akwasi (2020:1), the eight Batho Pele principles are:

- 1 Consultation**
Residents should always be consulted on matters that involve their needs.
- 2 Service standards**
A directive that specifies that all residents must know the benefit(s) they should expect.
- 3 Redress**
This instructs public servants to help all residents with an explanation as well as recourse in cases where requirements are not met.
- 4 Access**
All residents have a right to equivalent access to services.
- 5 Courtesy**
All residents, without judgement, must be given reasonable treatment and must constantly be assisted in a polite manner.
- 6 Information**
All residents are eligible to access complete and precise information.
- 7 Openness and transparency**
All residents are required to be informed about how decisions are taken and how departments are operated.
- 8 Value for money**
The facilities presented should constantly provide value for money.

Witzenberg: At a Glance

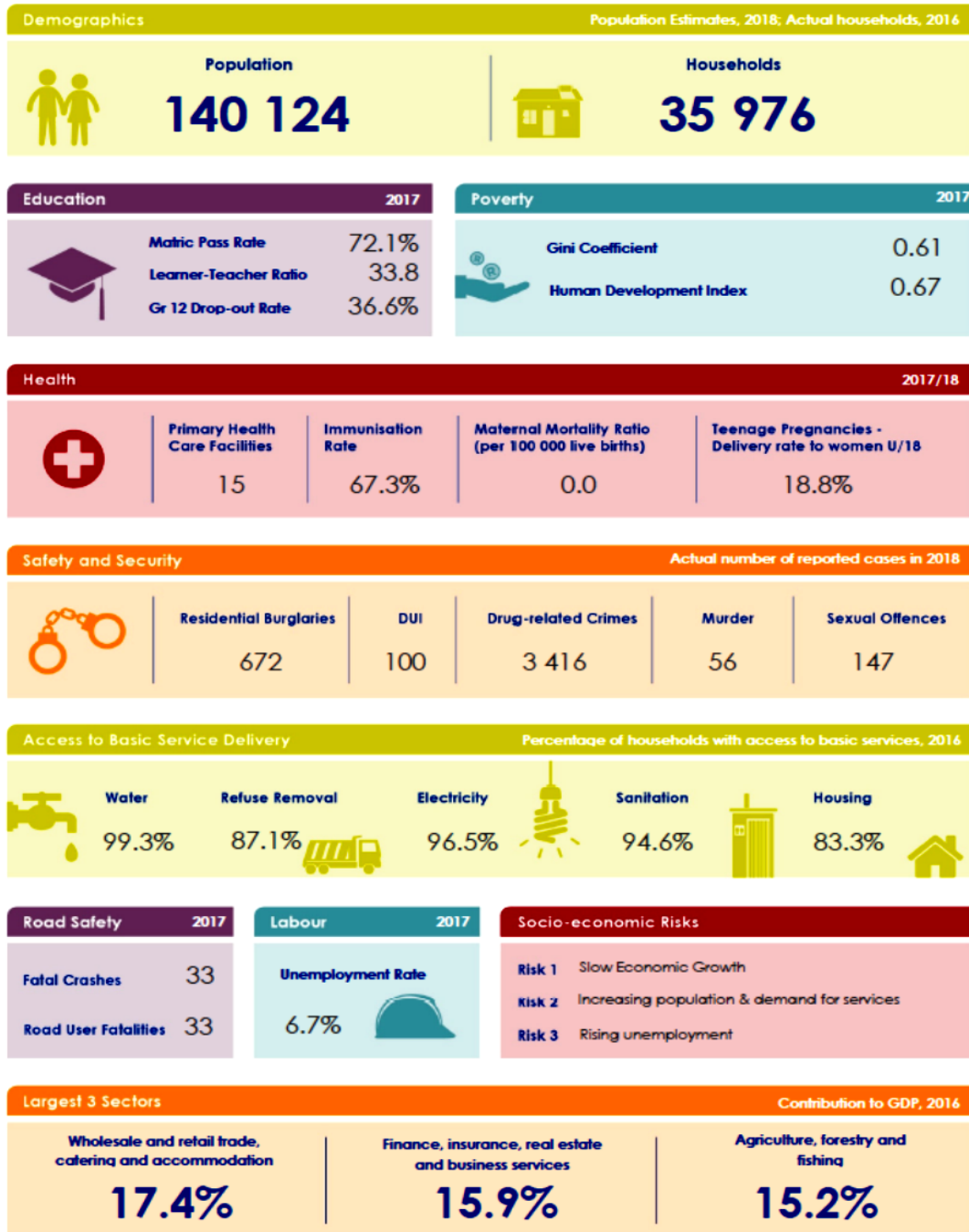


Figure 2.2 Witzenberg Socio Economic Profile

Western Cape Government (2017:1)

The Witzenberg local municipality is situated in the District Municipality of the Cape Winelands, situated in the Western Cape Province, in the demarcated metropolitan area, including the towns of Ceres, Tulbagh, Prince Alfred's Hamlet, Wolseley and Op-die-Berg. Witzenberg local

municipality is responsible for the delivery of essential services and it is listed as a Category B municipality.

The municipal limits are the northern reaches of the Breede River Valley (Het Land van Waveren), Koue Bokkeveld, Warm Bokkeveld and Agter-Witzenberg. Three mountain ranges border the region—the Winterhoek Mountains in the north, the Obiqua Mountains in the west and the Witzenberg Mountains in the east.

According to the 2011 census (Wazimap, 2019:2), Witzenberg Local Municipality has a population of 115,946 people, of which 25.3% are black African, 7.7% are white and 65.9% are coloured. Other classes of the population make up the remaining 1.1%.

Wazimap (2019:2) offers the following statistics. Regarding education levels, of individuals of 20 years of age and older, 6.6% have no form of education, 9.2% finished primary education, 40.2% finished secondary education, 18.2% finished Matric and 5.8% finished some form of advanced education.

The living conditions of Witzenberg Municipality reveal an average of 3.8 people per home and there are 27,419 families in the municipality. Of these families, 0.5% do not have access to piped water, 90.9% have access to piped water in their homes or their yard, while 93.4% have access to electricity for lighting.

Witzenberg Municipality has 56,334 economically active residents, 7.6% of whom are unemployed. Economically active youth totals 29,308, of which 9.9% are jobless in the municipality (15–34 years of age). The leading financial sections in the area are agricultural (29.1%), finance, indemnity, real estate and commercial services (22%), industrial (16.2%), wholesale and trade, cuisine and accommodation (10%), common administration (8.4%), conveyance, dispensation and communication (8%), community, societal and individual amenities (3.5%) make up the rest of the minor economy sections.

The basic needs analysis includes essential services provided by Witzenberg Municipality to all parts of the areas around the municipal area, as well as sanitation services, like emptying septic tanks in rural areas. There are no further essential services on private land. All the households in residential areas have access to services such as water supply, hygiene, electricity, and waste removal. Facilities such as shared water and public toilets are only provided in informal settlements.

2.6.5 Witzenberg Municipality financial performance outcomes

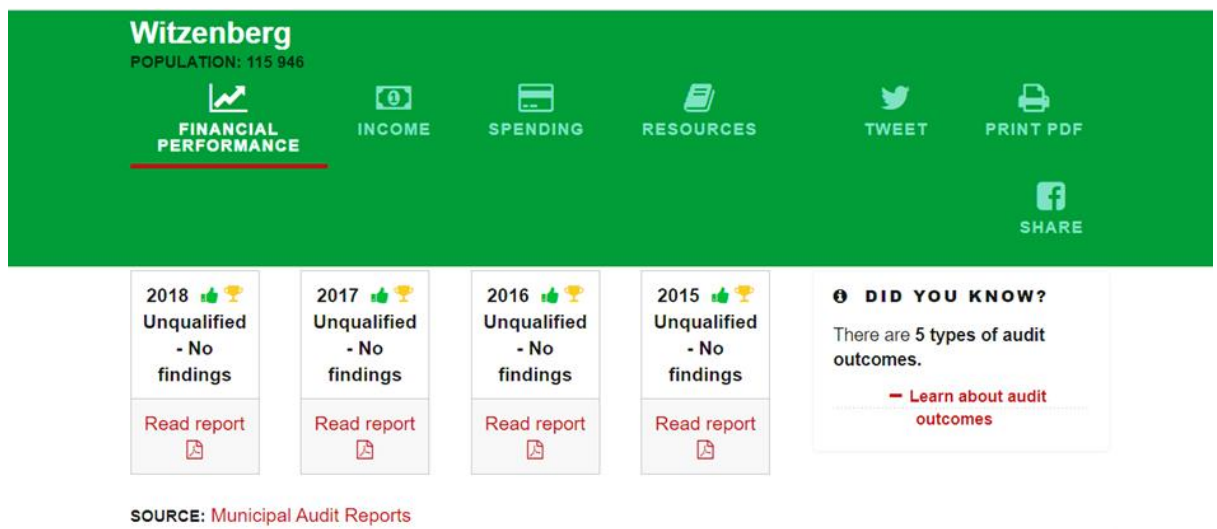


Figure 2.3: Witzenberg financial performance

Municipal Money (2020:2)

2.7 Definition of internal audit

Since its establishment in 1941, the IIA has been internationally recognised for having internal audits systematised and professionalised. The IIA was formed by several internal auditors, who presented legitimacy to the profession, forming the organisation as a formal body with duties to manage the activities of internal auditors.

The IIA then redefined internal auditing to be a self-governing, purposeful, self-assured and consulting activity created to assist and enhance an organisation's operations (IIA, 2016:23). The IIA helps an organisation to accomplish its goals by creating a methodical, disciplined method to assess and enhance the effectiveness of internal control, risk management, and governance process (Pitso, 2008:8).

Asare (2009:16) states that the most important difference of internal audit interpretations is the existing focus on assessing and strengthening the effectiveness of business features of risk management, governance and control. Pitso (2008:2) argues that these are the grey areas neglected by external auditors for many years. To councillors, managers and the audit committee, the internal auditor's role is to present the 'bigger picture'. Intended to cover an organisation's strategic risks, this 'bigger picture' examination is based on the outcomes of their appraisal of the execution of internal controls (Spencer-Pickett, 2011:1).

2.8 History of internal audit in South African local government

The historic practice of internal audit has been mainly an event in the private sector. Internal auditors were often known as 'accounting handymen' (in the private sector) and mandated to carry out bookkeeping compromises and other secretarial work (Pitso, 2008:5). However, the occupation has since made significant progress and gained recognition, and the public sector has subsequently started applying internal auditing to reinforce its authority (Enofe et al., 2013:162).

The integrity of auditors' independence and corporate governance have been under strong scrutiny after the failure of several companies, including WorldCom and Enron in the USA and Parmalat in Europe. Regulations like the Sarbanes-Oxley Act have been broadcast in the USA, involving all US companies. The regulation tasked registered companies' audit committees with the critical function of supervising the risk to the internal auditors' independence (Kirkpatrick, 2009:3).

Sections 165 and 166 of the Municipal Finance Management Act (MFMA) clarify the roles and functions of both internal auditors and audit committees in municipalities. In 1994, South Africa achieved an important breakthrough when municipalities in the Western Cape appointed an audit committee, trusting that the appointment would improve the municipalities' governance. The consequences of the review included the declaration of numerous acts and adjustments to existing regulations, this all planned to improve municipal governance. Consequently, it became mandatory for every municipality to have an internal audit unit in place. Furthermore, management committees such as the performance and audit committees also became mandatory.

2.9 Institute of Internal Auditors Standards – internal audit roles

The International Professional Practices Framework (IPPF) represents a standard structure that acts as a guide for the internal auditing practise (Spencer-Pickett, 2011:3). The IPPF, published by the IIA, is a set of rules used as a basic guide to the internal audit practice. It encompasses mandatory guidance such as a code of ethics, the definition of internal audit and the International Standards for the Professional Practice of Internal Auditing (the Standards). Adherence to the Standards is highly recommended, while conforming with the Standards is critical to ensure that internal auditors get to know their responsibilities (Asare, 2009:16).

The Standards are practised in understanding the conditions under which different internal audit activities can differ substantially. Whether the disparity is due to industry-specific needs or nationality or organisational cultures, it should never affect the implementation of the Standards (IIA, 2016:1). In compliance with these requirements, internal auditors appointed by South African municipalities and licensed with IIA of SA are required to conduct their audits according to the Standards. This is also demonstrated in the procedures issued by the South

African National Treasury for the use of internal audit components in the public sector (South African National Treasury, 2009:6).

2.10 Institute of Internal Auditors Standards – guidelines for internal audit

Internal audit departments must prepare an annual risk-based audit plan considering the organisation's operational and strategic risks (IIA, 2016:10). The responsibility of internal audit is to be consistent with the definition of internal audit, the IIA Standards and the Code of Ethics (IIA, 2016:10). Audit outcomes should be communicated (IIA, 2016:18). Internal audit performs assurance and consulting services, which aim to assess and enhance internal controls, risk management, and governance processes; a major responsibility of internal audit is to help management in achieving municipal goals.

Internal auditing activities should be adequately planned, considering that the audit scope is documented, the audit objectives are set, the audit time is allocated, and the audit resources are available (IIA, 2016:16). This is done to determine whether the performance of the internal audit unit in a municipality complies with the IIA Standards. An internal audit unit of a municipality performs both an internal and external quality assurance review, this is done every 5 years by an independent external reviewer in line with the IIA Standards 1310 and 1320 (IIA, 216:8-9). Internal audit is defined in the IIA Standards as an unbiased, purposeful, self-assurance and consulting activity designed to add value, enhancing an organisation's operations.

2.11 Internal control evaluation

The Committee of Sponsoring Organisations framework (COSO) describes 'internal control' as a mechanism that will achieve organisational goals and aims at providing reasonable assurance (KPMG, 2013:1). It is influenced by the council of the municipality, as well as by any other appointed employee with an acceptable management directive. The framework should also verify that the control structure is compatible with accepted control mechanisms and is adequate to minimise risk exposure. An organisation with a stable internal control structure has higher chances of good governance, paving the way for achieving its goals (Ratsela, 2015:15).

According to Spencer-Pickett (2011:96), management duties include designing effective controls, enforcing implementation of controls, monitoring if the controls are applied and updating controls regularly or when needed. Throughout the evaluation, internal audit must decide if the control environment is established and also determine the attitude of management towards the control system. The main objective of internal audit is to add value, enhance corporate processes and help managers achieve their strategic goals.

Internal controls are the actions taken by the municipal council, management, and all other related parties within the municipality, with the aim of managing risks and increasing the

probability of accomplishing set goals. The two concepts of the IIA and the Committee of Sponsoring Organisations of the Treadway Commission (COSO) have significant similarities, internal controls are implemented to mitigate risks to achieve operational objectives and controls are the duty of management, not internal audit. The internal regulations are accomplished through the scheduling, coordination and implementation of activities that are considered as necessary to provide sufficient assurance that municipal objectives will be attained (IIA, 2016:25). It is done primarily through the assessment of an institution's internal controls relevant to the high-level risks.

Spencer-Pickett (2011:96) states that the functions of the internal auditor in internal control assessments include:

- a) Valuation of high-level risks in processes.
- b) Designing plans for evaluation of the high-risk areas.
- c) Making recommendations to management on whether controls are functioning as intended; and
- d) Making recommendations to management on the improvements to internal controls and follow up on agreed management action plans, checking the degree of application.

Management is able to guarantee compliance with internal controls by using standardized checklists, among other procedures. The framework of the South African National Treasury (2009:22-23) stipulates that internal audit must assess the competence and usefulness of the controls. External auditors must be very careful not to compromise their autonomy by assuming the duties of management concerning internal controls.

An assessment of internal controls assesses the effectiveness and adequacy of controls within the process, then applies it to information and governance structures, particularly where they relate to the following operative elements (Asare, 2009:15; IIA, 2016:13):

- a) Efficiency and productivity of procedures;
- b) Dependability of financial reporting;
- c) Safeguarding of assets; and
- d) Obedience with lawful rules and regulations.

2.12 Risk management process as the role of internal audit

The internal audit role concerning risk management is the debate that distinguishes between the role of assurance providers and the role of consulting services, including the assessment and identification of emerging risks.

The assurance and consulting roles are detailed in the following sections.

2.12.1 Assurance services

The important purpose of risk management is dealing with risk factors in an organised approach. This includes verifying whether the risk management process is operating as intended and whether the risk management methodology and policy are defined precisely in the risk management strategy of the organisation. "Risk management classifies, measures, manages and controls possible threats or events to offer reasonable assurance concerning the attainment of an organisation's goals" (IIA, 2016:24).

Internal audit is duty-bound to advise management on emerging risks (Coetzee et al., 2010:19). Internal auditors assess and contribute to the enhancement of official risk management processes as required in the IIA Standard 2120 (IIA, 2016:13). They must validate whether the approved risk action plans are implemented within an agreed timeframe. Internal auditors must ensure that the risk management processes that are implemented by respective municipalities are effective and that the risk management activities are recorded in an official methodology and the official risk management strategy.

The risk management process must accommodate, permit and encourage the detection and evaluation of emerging risks. When risks are managed, the municipality has a constructive environment in which to accomplish its objectives. Assessing risks effectively allows management to address risk factors beforehand, which allows management to attain its objectives. Risks should be re-assessed annually, and risk management action plans should be formally applied and followed up throughout the year.

To guarantee the implementation of risk management action plans, performance indicators should be introduced to municipal officials. The assessment of risk management processes by internal auditors entails providing assurance on whether organisational risks are recognised and measured appropriately. In the situation of South African municipalities, this means basic service delivery to the citizens. It remains management's responsibility to ensure that a sound system of risk management is in place.

Internal auditors must confirm whether risk management governance arrangements, such as the risk management oversight committee, are in place. Internal auditors in municipalities should ensure that there is prescribed accountability relating to risk management. Internal auditors should verify whether the approved risk action plans are implemented within an agreed timeframe. If progress is evaluated in any process, it normally motivates individuals to achieve set goals.

According to Spencer-Pickett (2011:84), the key points that determine the effectiveness of risk management systems are:

- a) Determine whether established goals are in line with the organisation's quest and goals;

- b) Establish whether the designated solutions used to recognise threats are appropriate;
- c) Establish whether authorised risk tolerance and risk appetite levels are in place; and
- d) Establish whether risk registers are documented and communicated promptly.

Sobel and Reding (2012:89) argue that there are three main considerations for internal audit and management with regards to the identification of risks, namely risk identification, external stakeholders and identification of emerging risks.

Evaluating risks efficiently allows management to identify risk factors beforehand, which allows management to attain its objectives. Internal auditors are in an upright position to ascertain whether risk registers are a true reflection of the risks facing the organisation. According to Sobel and Reding (2012:84), service delivery protests are a constant example of how risks have been misidentified; management is required to recognise and assess the control gaps.

2.12.2 Consulting services

Consulting services that can contribute to the efficiency of the organisation's risk management process can be done by internal audit. However, care must be exercised to guarantee that internal auditors' independence is not compromised by taking ownership of the entire risk management process, as that remains management's responsibility (Sobel & Reding, 2012:29).

Internal audit is experienced in risk management and is well placed to offer advice to management on risk identification, as well as risk treatment opportunities.

2.13 Corporate governance as the role of internal audit

Corporate governance is characterised in King IV report (Institute of Directors South Africa [IDSA], 2016:24) as "the practice guide of moral and effective leadership by the governing body". Management is defined by Fleming and McNamee (2007:137) as the process of carrying out organisational operations in an ethical, defensible way, and it is a structure through which organisations are controlled and guided. This collection of concepts as an administrative system is implemented by the municipal council to ensure the accomplishment of the moral municipal goal of service delivery to communities (Sobel & Reding, 2012:21).

Corporate governance concepts emphasize integrity, transparency and conformity with the relevant legislation that is directly linked to the internal audit purpose. Governance techniques must provide a culture in which management can accomplish its organisational goals, and after evaluation, internal audit reviews should give feedback on how to improve the effectiveness of governance processes. 'Institutional governance' is now called 'corporate governance' in the private sector (Visser, 2014:20).

Institutional governance usually describes how to control and manage public institutions (such as municipalities) (Visser, 2014:20).

Von Eck (2013:141) considers internal audit, audit committees, management, and external audit as the four pillars of corporate governance. The existence of an internal audit unit enhances the standard of governance in an organisation, as it delivers assurance on the adequacy and effectiveness of internal controls, risk management and governance processes (Soh & Martinov-Bennie, 2011:606). An internal auditor must measure the state of an organisation's corporate governance to endorse improvements. The internal audit's valuation and guidance on how organisations can improve their governance is valuable, as the internal auditors are perceived as the eyes and ears of the council (or board in private companies) (Spencer-Pickett, 2011:15).

Academics agree that the government maintains efficient governance and transparency in the public sector by aligning the activities of internal auditing, risk management, financial reporting, code of ethics, and its oversight committees (Aikins, 2013:673; Cascarino, 2015:208). Therefore, internal audit must assess the nature and efficacy of governance. The governance structures will act as warnings and red flags when the aims of cities to provide essential services are not met.

2.14 MFMA regulations within internal audit

Internal audit's roles in municipalities must comply with the MFMA, of which Sections 165(1) and 165(2) stipulate that internal auditors must:

- Report to the audit committee on the implementation of the risk-based internal audit plan.
- Offer advisory services to the accounting officer on internal controls, performance management and accounting practices.
- Safeguard assets; and
- Comply with the annual Division of Revenue Act 4 of 2020 (DoRA) (South Africa, 2020), MFMA and any other related legislation.

Municipalities' governance progress and attainment of municipal goals of service delivery is more likely to occur when the items above are incorporated into the annual audit plan and feedback thereof is given to management.

2.15 Internal audit – compliance with applicable regulations

Compliance is not just ticking things off on a checklist; rather, it requires that values be incorporated into an organisation's day-to-day practices to comply with relevant legislation. Internal auditors must work together with management to ensure that the application of regulations does not affect the achievement of the objectives of an organisation but relatively strengthens the governance environment of the organisation, thereby providing an environment for the achievement of accepted objectives.

Effective implementation of legislation can be problematic to measure, just as difficult as measuring wasteful expenditure, which can be avoided because of strict enforcement of provisions in supply chain management laws and regulations; however, the application is important and usually leads to success if completely embraced (Dinga et al., 2015:39).

According to Sections 165(1) and (2) of the MFMA, internal audit units of municipalities are expected to integrate the provisions of the DoRA Act into their audits. They should also be watchful of the auditee's compliance with all other laws relating to critical aspects of the municipality's functions, including municipal properties and rates, labour and employment agreements, health and safety, water and housing.

2.16 Internal control perception

In maintaining a mechanism for governance, an organisation's objective control systems are responsible for detecting, mitigating, evaluating and managing risks that may hinder it in using its financial and connected resources effectively, efficiently and economically. Internal control mechanisms, according to KPMG International (2013:27) include financial and managerial checks and balances that are planned and maintained to ensure that the organisation's priorities, goals and obligations are met. Internal controls should detect risks before they occur, or correct risks after they occur.

According to KPMG International (2013:30), there is a list of internal control mechanisms, which includes staff skills, distribution of tasks, separation of responsibilities, access and approval, comparisons, reconciliations and layout of source documents. Understanding internal control systems correctly requires an organisation to adopt internal control that is appropriate to its particular needs and activities (Ugandan Ministry of Water and Environment [UMWE], 2018:22). The four tenets of any control system are regulations, leadership, sound security and labour control objectives.

Official rules and procedures should be issued by the management of organisations or municipalities to their workers. These rules and procedures must describe in detail how certain responsibilities are to be carried out and they serve as the basis for internal control.

The management of an organisation or municipality should design and implement internal control mechanisms. This duty could be allocated to a responsible worker who has to report to management as management is accountable for internal control in the entity.

Management sets control intention objectives to achieve an effective system of internal control. According to KPMG International (2013:31), the key tasks of internal control include attaining consistent, safe and clear financial control steps. Visser (2011:84) argues that to understand internal control systems properly, various elements should be investigated.

An effective internal control programme ensures that internal controls are implemented, thereby negating fraud or errors. Internal control is accountable for knowing and minimising control risks that may impede the attainment of an entity's goals to utilise financial resources effectively.

Pillai (2010:547) states that the system of internal control is implemented by an organisation to improve the quality of control and management essential to the success of the organisation.

2.17 Conceivable complications of an internal control system

Although there are advantages to an internal control system, Visser (2011:89) identifies certain weaknesses. The vulnerabilities are:

- Price of power: internal control can keep a task or operation running but it could come at a cost, both financial and human.
- Extreme, redundant and superseded controls: can cause workers to become confused and frustrated and can contribute to the avoidance of implementing the controls.
- Information: may not be understood or conveyed to the wrong person. The information may be so detailed in certain situations that it is useless.
- Controls can be augmented: they could reach a point where their effectiveness could decrease.

Visser (2011:89) further notes that overemphasis on controls could cause officials to lose sight of the achievement of operational goals whilst striving to fulfil procedural controls.

Effective internal control systems can be achieved by communicating with workers or by including affected personnel in the layout of the controls (Visser, 2011:89). People should willingly obey orders and recognise the authorities' requests. In the past, some perfectly reasonable internal control mechanisms have failed because behavioural factors have not been taken into consideration.

2.18 Environmental health

The Constitution of South Africa indicates that residents have the right to have a good life and admission to resources, which also applies to informal settlement dwellers. This is stipulated in Chapter 2 of the Constitution, Sections 24, 26 and 27 (South Africa, 1996a).

2.18.1 Section 24(a) of the South African Constitution

Section 24(a) of the South African Constitution indicates that the public shouldn't live in an environment that is harmful to their health, the public has a right to live in an environment that is free from all types of health hazards, ensuring that current and the future generations live in

a clean environment. That applies to all people in South Africa, including those people living in informal settlements.

2.18.2 Section 24(b) of the South African Constitution: Sustainable growth

Section 24(b) of the Constitution provides that there must be a balance in sustainable development, which incorporates environmental, social and economic factors.

As stated in section 26(1) of the Constitution, everyone has the right to adequate housing in South Africa. However, looking closely at this clause regarding the illegal settlement of Chris Hani, it seems to be a privilege infringement in fulfilling several political hopes. This might be an academic exercise that does not include the condition of South Africa's burdened black or coloured families, many in the informal settlements.

"The right to housing as a perfect or a genuine political statement which is understood as a promise to use for the good of all people and to progressively improve their lives" (Smith, 1996:34).

2.18.3 Section 27 of the South African Constitution: Freedom of access to basic services

This section describes essential services as the supply of basic housing, sufficient clean water supplies and sanitation. In practice, it is noted that the provision of basic services, particularly to informal settlements, is unsatisfactory. A citizen's right to freedom and protection involves their right to be treated fairly against the destruction and removal of settlements.

It is the responsibility of municipalities to ensure that at least the basics are accessible to residents in their areas. These basic services comprise a clean water supply, regular waste collection and disposal, regular refuse removal, efficient power and fuel supply, adequate public health services, safe public roads, effective storm water management, sufficient road lighting and more municipal parks and recreation centres for the communities. All the above-mentioned services have a profound effect on the community's quality of life. For example, if waste is not collected regularly, it will create toxic and dangerous living conditions for the community. Environmental health is a division of public health that can affect human health. Prüss-Üstün and Corvalán (2006:111) define it as external to a person and all related factors influencing behaviours environmental health discourses all physical, chemical and biological influences.

Environmental health requires the assessment and monitoring of environmental effects that can cause health hazards. Ecological sustainability is dedicated to creating eco-supportive, disease-free habitats. The definition excludes non-environmental behaviour, as well as quality relevant to the social and cultural setting, and genetics. Environmental health services are characterised as those services that by monitoring and regulating achievements, enforce

environmental wellbeing policies. This function is also fulfilled by encouraging the development of environmental criteria and the use of environmentally friendly and sustainable technologies. We also have a leading role in developing and proposing new policy areas.

The South African National Environmental Health Policy of 2013 describes environmental health as an encompassing aspect of human health, including quality of life, which is determined by environmental, physical, chemical, biological, social, and psychosocial factors (South African Government, 2013:2). The strategy also applies to the theory and practice of examining, mitigating, regulating, and avoiding environmental factors that may adversely affect the health of current and future generations.

2.19 Definition of informal settlements

The UN-Habitat (2003:13) programme defines informal settlements as residential areas where households reside in houses built on land to which the inhabitants have no legal claim. The deprivations that distinguish informal settlements from formal residential areas include a lack of security of tenure and basic services, inadequate housing, overcrowding and location in dangerous areas.

In the coming decades, urbanisation is expected to increase dramatically throughout Africa. As the cycle of urbanisation continues, urban populations will ultimately decide the wellbeing of nations. Since the advent of urbanisation, most African countries have suffered extreme poverty. Urban growth occurs primarily in areas with existing vulnerabilities, so it is to be predicted that environmental ill-health and deprivation in South African cities will increase and the national health profile will run in parallel. The overstrained capacity of urban areas is also evident in how they are unable to meet the demand for adequate housing that rapid urbanisation presents.

Housing and its performance are one of public health's most important determinants. Settlements and stable houses are ideally positioned and built with in a manner that will prevent disease, promote health, and build healthy and sustainable communities. Bad or inadequate accommodation, on the other hand, may lead directly to a severe health burden in populations or vulnerable groups. The WHO claimed that, in addition to their primary purpose, human housing should protect against health hazards emerging from the physical and social environments by providing shelter against the weather and a priority for family life (Ziblim et al., 2013)

Suitable accommodation enhances physical and mental health. It provides people with emotional protection, improves relations with their community and culture, and allows them to express their individuality. Politicsweb.co.za (2009:1) reports on President Jacob Zuma's State of the Nation speech on June 3, 2009. The concept of safe housing was reiterated when Zuma said that:

...”building houses is not just about human settlement; the goal is to transform our cities and towns and to create inclusive, healthy and caring communities with better access to work and social facilities, including sports and leisure facilities.”

As a result of the significant historical housing shortage, urbanisation, migration outside national borders and natural population growth, high demand for housing continues to exist—a significant proportion of which remains unfulfilled. According to the 2011 South African census (StatsSA, 2011:2), about 8% of households live in conventional housing, while 14% of households still live in informal or squatter housing, more than 7% of the households use the bucket toilet system or do not have any access to sanitation, and less than half of the households have indoor water supplies.

In some cases, vulnerable people whose health may be affected by disease or under-nutrition are prone to several environmental health threats. For example, people living in an informal settlement situated downstream of a polluting factory may be exposed to harmful substances or chemicals, facing the risks of poor housing and insufficient environmental health facilities.

Unpublished results from a long-term urban health investigation survey initiated by the South African Medical Research Council (SAMRC) indicate that 22% of Johannesburg low-income households work from their homes in small-scale industries. This Health, Environment and Development (HEAD) study is a five-year panel study of living conditions and health status in five housing settlements in Johannesburg (SAMRC, 2016:3).

Car repairs, hairdressing, spray-painting, welding, electrical maintenance, and jewellery-making are among the most common informal small-scale industries, all of which can be associated with hazardous exposure to volatile organic compounds and lead. In the face of virtually non-existent formal employment opportunities, the informal economy has flourished and is a growing concern for environmental health among the disadvantaged groups, in urban settings especially.

2.20 Definition of environmental health hazards

Approximately one-fifth of Africa's disease burden is due to environmental hazards, according to WHO (Christophe Muanda, Rainer Haldenwang and Goldin, 2020). General environmental health challenges such as lack of access to safe water, indoor air pollution caused by the combustion of oil and lack of sanitation are the main contributing risk factors to the African continent's burden of environmental disease.

Although the past decade has seen significant economic growth (World Bank, 2008:20), new environmental health hazards are expected to arise from urbanisation and ongoing industrialisation. These could increase the existing threats on the continent, which could become significant contributors to the burden of environmental diseases.

It follows that the growth of informal settlements causes soil erosion, impacts the natural environment, as well as land, unhealthy waste management practices, and water and air pollution. “The environment is a specific geographic area which is particularly impacted by human activities” (Monteduro et al., 2015:112). The development of informal settlements and their human activities will affect the natural environment by soil degradation and water pollution near informal settlements.

South Africa must deal with various, overlapping disease problems such as injury-related disorders, communicable, non-communicable, perinatal, and maternal disorders. External influences play a role in each of these causes and prevention. In South Africa in 2000 for example, 5% of all deaths were associated with five environmental risk factors (indoor air pollution from household use of solid fuels, unsafe water, lead exposure, sanitation, hygiene, and urban outdoor air pollution) as noted by Weimann and Oni (2019).

Among children under five years of age, the collective attributable burden was exceptionally high, accounting for almost 11% of total deaths in this age group. From the point of view of environmental health, access to healthy accommodation, safe water, sanitation and non-polluting fuels are important factors in working towards significant reductions in maternal and perinatal mortality (Weimann and Oni, 2019) .

Given the severity and prevalence of environmental health hazards in South Africa, especially with the advent of global change in the environment. It may now be time for South Africa's ecological health section to focus on whether the country's current strategies and initiatives are successful or appropriate for environmentally friendly health services(Weimann and Oni, 2019) .

For the sake of cost-effectiveness and the right of all people to a safe and healthy environment, a basic ecological and public health aim must be the prevention of environmental diseases. Several approaches and methods, including intersectoral action (ISA) and health impact assessment (HIA) are particularly relevant in this regard.

2.21 Chapter summary

With the new distribution of local government, municipal services and service providers must comply with the original Constitutional specifications. Public facilities must be accessible and equal to all citizens and all government entities must attain and accomplish their goals and duties. Part B of Schedules 4 and 5 of the Constitution sets out the basic public services. In addition to these programmes, municipalities may be allocated other matters by national or provincial governments by legislation.

There seems to be a rediscovery of the basic necessary services a municipality is meant to deliver. This has resulted in almost all local governments focusing mainly on the key services and withdrawing or even privatising many other subordinate functions.

The Constitution requires all municipalities to strive within their financial and administrative resources to achieve their goals and deliver the services mentioned above. Adequate resources should be provided to improve all local people's wellbeing without any cost as this is their Constitutional right. In many cases, resources should be distributed to local governments in South Africa as this will help to achieve the main objectives of Constitutional operation in local government.

Developments in patterns of public satisfaction with various aspects of government efficiency provide a strong reminder of the progress that has been made in improving the quality of life of all South Africans in general over the past two decades. Addressing these goals on the public agenda is crucial in bringing us closer to the dream embodied in the Bill of Rights of the Constitution and the National Development Plan for our community.

According to Nleya (2011:5), service delivery remains a key and symbolic part of a meaningful life in disadvantaged areas. It is because better facilities are related to that the dignity of the poor who under the apartheid government have consistently been denied legal room and decent living conditions.

Therefore, it is important to stress that municipalities are obligated to provide services for the end-users' satisfaction. Nevertheless, it is clear that even after 21 years of democracy, demonstrations and grievances articulated by violence and other means continue to increase in service delivery. Municipalities are still struggling to provide quality services. It is an idea that people have reached unacceptable levels of impatience and fear.

The South African government has regulations that are formulated to hold municipalities responsible for the implementation of service delivery. The legislation also mandates each municipality to have an internal audit unit and annually review, among other items, the achievement of pre-determined defined corporate targets.

In summarising the functions of internal audit contained in these statutes, many laws and the MFMA recommend conformity with the IIA Standards when performing local government domestic audit activities. This provision is intended to establish a consistent method throughout all municipal internal audit units and to align civil audit activities with the concept of an internal audit as prescribed by the IIA.

However, amid this legislation endorsed to establish and implement public sector corporate governance, transparency and ethics, South African municipalities still face maladministration and corruption, complaints about poor service delivery and weak external audit performance.

This usually results in an eruption of unfruitful and inefficient, illegal and abnormal spending, among others.

Municipalities continue to tolerate bad internal control systems, not enhancing their financial management activities or supply chain management processes on an ongoing basis. The scope of the internal audit is not limited to financial controls; it also assesses a municipality's overall performance, with particular emphasis on high risks that could impede the achievement of organisational goals.

Risk management has been recognised as a critical component that helps organisations to recognise and handle risks until they know what may hinder the achievement of strategic goals. Such risks must be included in the annual plans of the internal audit, as defined in the system. If the outcries of the people regarding service delivery grow louder, there is something wrong with the municipality's performance, of which service protests are a barometer of such performance.

In reviewing the literature, most South African municipalities do not live up to the expectations of their respective communities. Analysis indicates that one of the key factors leading to the protests is the lack of adequate controls.

Therefore, it must be inferred that the answers to the fundamental issues are a mix of political and community-focused initiatives, and the changes to the system of local regulation and corporate governance. It is a daunting challenge that requires both parties to abandon their mutual distrust and work together to improve the living conditions of all South Africans.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter reviewed literature applicable to the topic of the study and presented the conceptual and theoretical structure of the study (Jilcha Sileyew, 2020).

This chapter concentrates on the methodology applied in the study.

3.2 Research paradigm/philosophy

Research philosophy defined by Saunders et al. (2007:15) as a term that relates to the nature of knowledge and the development of knowledge in a particular field. This philosophy/paradigm according to Creswell (2009:19) refers to a worldview. Based on the researcher's own knowledge, experience and preferences, the researcher's worldview is informed by assumptions.

There are four different worldviews, according to Creswell (2009:19): post-positivism, constructivism, advocacy/participatory and pragmatism.

Positivism is a methodical technique that involves description and observation of phenomena contextualized within a model or theory. Ponterotto (2005:128) commented on the theory statement, the use of strictly controlled studies, the use of statistics to test hypotheses, and the interpretation of numerical results in the light of the original theory. Positivists believe in a purpose, in the expectation of reality, while post-positivists admit the reality of the unexpected. According to Ponterotto (2005:130), in post positivism, the cognitive abilities of the human mind are flawed, and the realities of life do not change and because of this, researchers can never completely realize the "true" realism. Positivism and post-positivism form the basis of quantitative research.

Post-positivism, as mentioned above by Ponterotto, is about identifying and evaluating aspects that influence the results. Post-positivists base their knowledge on the observation and measurement of the objective reality that exists "in the world". It is therefore important for a post-positivist to develop different observational measures and study individual behaviors. The post-positivist world is determined by specific theories and laws. However, these theories need to be tested and improved so that people can understand the world. Post-positivists follow the following research methods: First, they start with a theory; second, they collect data that supports or refutes the theory; and finally, they make the necessary adjustments before further testing (Creswell, 2009:21).

The post-positivist paradigm was considered appropriate in this study, as the researcher wanted to investigate and further explain the construction of intellectual property and measure

a purpose and depth to determine the relationship between internal control and existing health risks to the residents in the Witzenberg Boland area. To confirm the authenticity of the device, the researcher gathered scientific evidence related to the concept of positive observation. The positivist system measures and measures the observations with scientific evidence. Therefore, the researcher used standard, appropriate and reliable scientific methods. The aim was to shift the results of the sample to the population and at the same time be a purposeful researcher. Measurement methods were used, and the results were accurately reproduced.

3.3 Research approach

According to Worldcat.org (2015) two research approaches can be used—the reduction method or the progression method. Following a schematic approach, the researcher develops a theory and/or a hypothesis and develops a strategy to test the hypothesis. Through a continuous approach, the researcher collected data and developed a theory based on data analysis. Subtraction involves the development of a fully tested theory. Subtraction is the best form of research in the natural sciences, where the theory provides a descriptive basis on which an event can take place, predict its occurrence and, as the above author shows, can be controlled.

Deductive research goes through the five chronological phases described by Saunders et al. (2007:85):

- 1) The theory will state the hypothesis;
- 2) It will be indicated how to measure concepts and indicates a relationship between two specific concepts;
- 3) Testing of the hypothesis will be done;
- 4) The specific outcome of the study will be tested; and
- 5) In light of the findings the theory will be corrected, if necessary.

According to. Bryman and Bell (2015:27), deduction must have the following characteristics:

- 1) A search that describes the causal relationships between variables;
- 2) Collection of quantitative data;
- 3) Validity of the data ensured by implementation of controls;
- 4) Reliability ensured by following a highly structured technique;
- 5) The researcher is independent throughout the study;
- 6) Concepts are designed so that facts can be measured by size; and
- 7) Samples must be sufficiently statistical to enable general decision making.

3.4 Quantitative research

Quantitative research models focus on measurement and description techniques, as indicated by McMillan and Schumacher (2006:195). The length of the questionnaire increases the

neutrality by using digits, data and controls. Therefore, the important classification of quantitative research design is experimental and non-experimental. Bergman (2008:11) argues that quantitative studies concentrate on the correlation between separate and related objects.

According to Creswell (2009:24), the research strategy establishes clear procedures and guidelines for the research method. The research strategy is the design of qualitative, quantitative, and mixed methods, setting a specific direction for the research design process. Creswell (2009:26) further believes that research strategies related to quantitative research are those that attract the post-positivist paradigm, the same as the situation in this study. The current study is based on a non-experimental research design of quantitative research methods. As Allen (2014:39) explains, quantitative research is a method of understanding a specific population (called a sample population). Through research, quantitative research uses observed or measured data to explore questions about the sample population.

According to Coghlan and Brydon-Miller (2014:128), the main characteristics of quantitative research are:

- The researcher checks his initial hypothesis (hypothesis);
- Concepts are presented in the form of clearly defined variables;
- Structure measures methodically before data collection and standardization;
- The data is in the form of accurate measurement numbers;
- The theory is fundamentally basic and deductive;
- Follow standard procedures and assume replication;
- The analysis continues to use statistics, tables or graphs, and discusses the relationship between what they show and hypotheses.

3.5 Research design

Defined by Bloomfield and Fisher (2019:29), a research design provides an overall framework for collecting data. Creswell and Plano Clark (2011:71) define it as a plan for selecting topics, research locations, and data collection procedures to answer research questions. The author further points out that the goal of a research project is to produce results that are considered reliable.

This study used a non-experimental, cross-sectional survey design. Researchers use deductive methods to check whether theoretical or applied research questions can be supported by empirical measurements and data analysis. The current study is relevant because the researcher described the relationship between internal control and health risks in Chris Hani's informal facility without any intervention by the researcher. Researchers developed a questionnaire based on this theory to investigate the relationship between internal

control and health risks in the informal settlement of Chris Hani. Although effectiveness is still an issue in this non-experimental study, the focus is on the fairness of the means rather than the fairness of the effects.

This study collected and analyzed raw data, making it is an empirical study. Sanders et al. (2007:85) describe raw data as data collected for a specific ongoing research project. Therefore, this study aimed to deepen the scientific understanding of the link between internal control and health risks in informal settlements in the South African perspective. For this study, a cross-sectional study of non-experimental design was selected because the measurement is instantaneous. Individuals were selected to provide information about general health risks encountered in the Chris Hani informal settlement. In descriptive research, the cross-sectional method is usually used, as is the case in the current study. The advantage of cross-sectional design is that it avoids the problems associated with vertical design, which are particularly expensive and time-consuming, and ultimately reduce the respondents' interest in participating in the survey. However, the disadvantage of the cross-sectional design is that since the search is only performed at a specific point in time, changes over time are disregarded.

In the measurement process, the researcher first determines the structure (in this study, the relationship between internal control and health risks in the Chris Hani informal settlement) or understands what the researcher wants to measure. The researcher then develops indicators (in this case, to measure the link between internal controls and health risks in the Chris Hani informal settlement), and considers the specific ways how information is gathered about the concepts. The responses are the information provided by the survey participants. In the current study, respondents were employees of the local Witzenberg municipal administration, including managers, politicians, and residents of the informal Chris Hani community in the Boland area of Witzenberg. The researcher then captures these reactions. In the characterization process, the researcher first determines the frame (analysis unit) and the target population from which the sample is drawn. In this study, residents of Chris Hani informal settlement, employees of the local Witzenberg municipality, and a councillor were the participants. Respondents are sample participants who complete the questionnaire.

3.6 Population

According to Teddlie and Tashakkori (2009: 341), the study population is defined as a group of individuals within the identifiable boundary of interest to the researcher. Salkind (2012: 95) defines population more as the group of potential participants to which researchers hope to extend the research results.

The selection of the study population is based on factors such as the availability of researchers and the resources available for the research, because the research is personally funded by the researcher. In this study, the study population of 552 in Chris Hani informal settlement

included workers, managers, residents, and community leaders from the local Witzenberg municipality in the informal settlement of Tulbagh Chris Hani in the Witzenberg Boland region.

3.6.1 Sample

According to Donald (2010), a small observation group is called a sample. The sample is part of the population. As Rule and John (2011: 64) pointed out, try to select specific people from the research population, and they may express more or different opinions on the research.

Sapsford and Jupp (2006: 26) interpret the sample as a set of elements selected from the population. The purpose of sampling is to save time and effort, but also to obtain a consistent and unbiased estimate of the overall state based on what is tested. Cresswell (2008: 152) further interprets the sample as a subgroup of the target population that the researchers plan to investigate in order to summarize the target population.

The ever increasing need for a representative statistical sample in empirical research has created the demand for an effective method of determining sample size. To address the existing gap, Krejcie & Morgan (1970) came up with a table for determining sample size for a given population for easy reference. The sample size of this study was obtained using Krejcie and Morgan tables (1970: 609) to determine the sample size. A total of 226 questionnaires were distributed; 15 were to municipal government staff, 1 was to municipal councillor of Tulbagh, and the remaining 210 were to Chris Hani residents of the informal settlement. Wilman et al. (2005: 56) shows that selection can differentiate between likelihood sampling and non-probability sampling.

Probability sampling

Probability sampling is the process of selecting respondents for a survey to ensure that every member or element of the population has an equal chance to be selected, avoid subjectivity and prejudice, and allow the results to be promoted to the target population. Probability sampling methods do not allow researchers to deliberately exclude certain parts of the population. To achieve this probability, the sample must be randomized (GeoPoll, 2020). Probability sampling is used to select two locations.

Non-probability sampling

Non-probability sampling is the process of selecting survey respondents who have less chance of being a representative sample (GeoPoll, 2020). For the selection of the interviewees in the study, deliberate sampling techniques were used for non-probability sampling.

3.6.2 Sampling method

Regardless of whether the method used is quantitative or qualitative, sampling methods are designed to maximize efficiency and relevance. However, sampling should meet the goals and objectives inherent in the use of these two methods. Qualitative methods are mainly for gaining

a deep understanding, while quantitative methods are for gaining a broad understanding (Patton, 2002: 23).

Intentional sampling is a technique widely used in quantitative research to identify and select information-rich cases to make the most effective use of limited resources (Patton, 2002: 32). This is related to the identification and selection of particularly informed or experienced people or groups of people with interesting phenomena (Cresswell & Plano Clark, 2011:75). In addition to knowledge and experience, Etikan (2016) also emphasized the importance of availability and willingness to participate, as well as the ability to convey experience and opinions in eloquent, expressive and reflective ways.

In this study, purposeful sampling was used to select 50% of the respondents (226 out of 552).

The sampling method used in this study was a random method without probability. Probability sampling is defined as sampling, in which each individual in the population has a chance of being sampled ($0 < x < 1$), which can be accurately determined. The focus of this research was on the Chris Hani informal settlement in the Witzenberg Boland area. According to statistics from the Housing Service Department of the Witzenberg City Government, the informal Chris Hani residential area in 2018 consisted of an average of 135 informal dwellings, each with an average of 4 residents, and the city had 4 departments, of which 3 senior-level personnel, one councillor is in charge of Tulbagh. Therefore, estimated population consisted of 552 people.

In this study, the representative sample size of Chris Hani was 226. It was determined based on the Krejcie and Morgan sample scale (1970:608). The determination of the sample size in Table 3.1 was arrived at from the calculation of the sample size, which is expressed as the following equation:

Krejcie and Morgan's sample size calculation was based on $p = 0.05$ where the probability of committing **type I** error is less than 5% or <0.05 .

$$s = \frac{X^2 NP(1-P) \pm d^2(N-1) + X^2 P(1-P)}{d^2} \quad (3.1)$$

Where, S = required sample size.

The table value of chi-square for 1 degree of freedom at the desired confidence level ($0.05 = 3.841$).

N = the population size.

P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (0.05).

Table 3.1: Table for determining sample size

N	S
220	140
230	144
240	148
250	152
260	155
270	159
280	162
290	165
300	169
320	175
340	181
360	186
380	191
400	196
420	201
440	205
460	210
480	214
500	217
550	226
600	234
650	242
700	248
750	254
800	260
850	265
900	269
950	274

1000	278
1100	285

Source: Krejcie and Morgan (1970:608)

3.7 Data collection instrument

3.7.1 Questionnaires

A questionnaire is designed to provide answers to common research questions to ensure that the data collected meet the objectives of the study. A self-designed questionnaire was used to gather the data needed to achieve the objectives of the study from residents, municipal staff and councillors. This assisted the researcher to gather primary data.

A self-administered questionnaire was used in this study and data were collected by distributing the questionnaire as part of a survey research design. According to Gray (2009: 165), questionnaires are research instruments whereby people are asked to react to the same questions in a determined imperative. Furthermore, Leedy and Ormrod (2010:197) define a questionnaire as an investigation in which the researcher poses written questions to willing participants, summarises their replies with fractions, occurrence counts, or more refined directories and then draws interpretations about a specific populace from the responses of the sample.

Questions can be stated as open- or closed-ended questions. Those that leave the respondents to respond in their own words are open-ended questions. These answers tend to be long but the benefit of open-ended questions is that new, often unexpected, insights, with more detail are obtained and more detail is provided. The disadvantages of open-ended questions are that they are time-consuming in that it takes time for the respondents to write their responses in their own words, they are difficult for the researcher to analyse and interpret and a lot of irrelevant data can be collected (Descombe, 2010:167).

Closed-ended questions, according to Gray (2009:154), are questions to which the respondent chooses from a set of predetermined responses, such as "yes or no", "true or false" or multiple-choice questions. Closed-ended questions are easier to analyse but may restrict the richness of information. Closed-ended questions can be useful in providing respondents with some structure to their answer and also make it easier to associate the interpretations of one group with another.

Questionnaires, according to Descombe (2010:156), are the most productive:

- When used in multiple locations with large numbers of respondents;
- When there is no need for face-to-face contact;
- When there is a need for consistent data from the same questions;
- When the respondents can read and understand the questions; and

- When the social environment is sufficiently open to allow full and honest answers.

The drawbacks of questionnaires include the following:

- Pre-coded questions can be annoying for participants and thus discourage them from responding;
- Pre-coded questions can prejudice the researcher's conclusions, rather than the respondent's way of seeing things;
- The investigator cannot check the honesty of the response given by the respondents;
- The subjects might not reflect their true opinions and answer what they think will please the researcher; and
- Valuable information may be lost as answers are usually brief.

Structured questionnaires were used in this study to allow participants to provide as much information as possible and to elaborate on their answers.

Pawar (2004:28) points out that the details of the questions allow the researcher to reach the respondents in different places and maintain confidentiality and anonymity.

The study used the quantitative method of data collection. Due to the low levels of literacy in the Chris Hani informal settlement, the questionnaire was administered by the researcher. Secondary data was acquired from journal articles, textbooks, legislation and the Internet.

Two questionnaires were used to collect data. One was administered to the residents of the Chris Hani informal settlement and the other one to municipal staff of the Witzenberg local municipality. The questionnaires comprised of open-ended questions with a few closed-ended questions mostly. The respondents were required to respond in their own words to the open-ended questions, whereas the closed-ended questions had options that were pre-determined by the researcher (Burns & Burns, 2008:270). Open-ended questions were included because they allow participants to respond to questions in their own words and provide more detail. Closed-ended questions were included because responses are easier to administer and analyse. They are also more efficient in the sense that a respondent can complete those questions in a given time, as noted by Polit and Hungler (1995:203).

The questionnaires were formulated in both Afrikaans and English to enable the respondents who did not understand Afrikaans to complete in English or vice versa. Most of the participants could not write or read, and the researcher assisted the respondents by reading the questions to them and wrote their answers down for them. Anonymity was ensured as the respondents were given assurance that the responses they provided would not be linked to them at the stage of data analysis. The questionnaires comprised three sections—A, B and C. Section A sought demographic data such as age, level of education and gender. When interpreting the results, this information could assist the researcher in, for example, whether respondents

lacked knowledge of good governance because they were illiterate or whether they settled in this informal settlement due to lack of income.

The researcher collected the information from the respondents. The researcher obtained and adapted from previous studies. The reliability of the adopted questions were directly linked to the Chris Hani informal settlement and its current situation and hence the literature made it easy and reliable to amend the questions to the study. Previous studies questionnaires were downloaded and compared to the background of the study and according to the research design aligned and amended. Section B posed questions aimed at determining the current state of affairs of the respondents on the health risks present in the Chris Hani informal settlement. Questions about the type of risks, impact of risks, access to basic services and awareness campaigns were included. Section C sought their perceptions of corporate governance in the Witzenberg local municipality. Questions were included on causes, community participation and the affairs of the municipality.

3.7.2 Pilot test

It is always advisable to conduct a pilot study to determine if a questionnaire requires any amendments (Kothari, 2009:101). Bryman and Bell (2007:112) recommend that a pilot test be carried out before an actual study is conducted. It can reduce questionnaire errors. Ten respondents who met the set criteria for the pilot test were selected, comprising nine respondents from the community and one municipal staff member. The pilot test results showed that the respondents of the informal settlement did not understand the questionnaire well and it took them approximately 15 minutes to answer all the questions. It was recognised that some of the questions needed to be altered slightly rephrased to make them more understandable for respondents. The questionnaire was amended accordingly.

3.8 Procedure for data collection

The researcher used simple English and Afrikaans to avoid dialectological problems and anticipated that respondents would use informal, familiar words in their answers. Although participants were not affected by the presence of the fieldworker, there were some problems due to the language barrier of the respondents and understanding of the questions. The safety of the fieldworker since the fieldworker is a female and doing the survey without any assistance. Therefore, the questionnaires were completed in the presence of the fieldworker by means of explaining the question because the researcher could determine the importance of the questions that were not clear to the participants. The fieldworker could also identify the statements of the participants during the completion of the questionnaire.

Questionnaires were personally administered by a fieldworker appointed by the researcher to the municipal staff and the residents. In instances where the participants could not read or write, the questionnaires were completed by the fieldworker on behalf of respondents. Some

of the residents could not understand the open-ended questions as they did not speak English or Afrikaans. The data were collected over six months (June 2019 to December 2019). The fieldworker administered the questionnaires in the informal settlement during weekends when the bulk of the residents were at home and able to answer the questions in the comfort of their homes. The municipal staff completed the questionnaires in their offices. To ensure anonymity, respondents were requested not to write their names on the questionnaires.

3.9 Data analysis

According to (Bhatia, 2018) data analysis has different methods and approaches. In addition to working with data, data analysis often contains goals, relationships, and decisions. The different strategies offer the researcher strategic ways to interact with the data so that the analyst can create logical sequences of different processes. Without analysis or interpretation, numerical data is a multiplication of numbers, while quality data is a list of words and sentences.

After the data were collected it was organised and analysed. For analysis of closed-ended questions, SPSS v18 was used. Data were analysed using descriptive statistics. The data were presented in frequency tables, pie charts and bar graphs. The open-ended questions were analysed using quantitative content analysis to quantify emerging trends and concepts. According to Polit and Hungler (1995:209), concept analysis is the process of analysing verbal or written communication in a systematic way to measure variables quantitatively.

3.10 Validity and reliability

3.10.1 Validity

Bailey (2007:179) defines validity as the extent to which a concept is accurately measured in a quantitative study; it measures what it is intended to measure.

Validity can be divided into seven styles: interior, exterior, standard, concept, gratified, analytical and statistical rationality (Gray, 2009:155). Internal validity is the extent to which a piece of evidence supports a claim about cause and effect, within the context of a particular study. It may be aided by testing only persons who are agreeable to partake in the research. Exterior validity is the degree to which it is conceivable to simplify the information to a larger populace or location (Gray, 2009:156).

Criterion validity assesses how closely the results of the researcher's test correspond to the results of a different test. It is concerned with how well a test predicts performance and measures the extent to which a test is related to some criterion.

Construct validity evaluates whether a measurement instrument represents something that the researcher is interested in measuring; it is central to establishing the overall validity of a method (Salkind, 2012:124).

Content validity is concerned with authenticating the content of the test or investigation (Gray, 2009:157). It specifies the degree to which a test symbolises the items from which it is drawn, and it is particularly accommodating when assessing the practicality of accomplishing tests that sample a specific part of the information. As for this study, the construct of the investigation of the interconnection of health hazards in the Chris Hani Informal settlement, in particular its implementation across the two stakeholder groups. When assessing the community, the questionnaire must be familiar to all participants, implying that most of the questions of the study must have been experienced by the respondents some time or another in their past. For the investigation to have a high level of construct validity, all the questions that need to be answered by the community respondents have to be performed by the local municipality. Accurate, meaningful and justifiable inferences can only be achieved through a high level of construct validity.

Gray (2009:158) indicates that predictive validity demonstrates how well the test can estimate an upcoming attribute, such as job presentation or accomplishment, while statistical validity is the degree to which a study has used a suitable strategy and statistical approaches that will permit it to perceive the current properties.

Questions in the survey for this study was based on information gathered during the literature review to ensure that they were representative of what respondents know about the current state of affairs and their perceptions on corporate governance. Content validity was further ensured by consistency in administering the questionnaires. All questionnaires were distributed to participants by the researcher personally. The questions were formulated in simple language for clarity and ease of understanding. Clear instructions were given to the participants and to those who are unable to read or write.

The questionnaires were submitted to researcher's supervisor for validation. Consequently, higher representativeness was ensured by adding more questions to the questionnaires. For clarification, questions were rephrased and more appropriate response choices were added to the closed-ended questions, ensuring meaningful data analysis (Burns & Burns, 2008:273). The questionnaires were submitted for approval to the CPUT ethics committee, which approval was granted.

External validity was ensured. Burns and Burns (2008:170) explain external validity as the extent to which study findings can be generalised beyond the sample used. All the respondents who were approached to participate in the study willingly completed the questionnaires. No participant refused to participate in the study. Generalising the findings to all members of the population is therefore justified.

Seeking subjects who are willing to participate in a study can be difficult, particularly if the study requires extensive amounts of time or other types of investment from them. If the number of

persons approached to participate in a study declines, generalising the findings to all members of a population is not easy to justify. The study needs to be planned to limit the investment demands on subjects to increase participation.

The number of subjects who were approached and refused to participate in the study should be reported so that threats to external validity can be judged. According to Burns and Burns (2008:170), external validity decreases as the percentage of those who decline to participate increases

3.10.2 Reliability

According to Burton and Bartlett (2005:26), reliability defines the extent to which an investigation tool or technique is repeatable. It refers to the degree to which scale produces consistent results when repeated measurements are made.

Reliability relates to the consistency of a measure. The reliability of a measure is the degree to which respondents will reply to it in the same way. As clarified by Descombe (2010:298), reliability denotes whether the research tool is neutral in its consequence and steady across repeated use. Salkind (2012:155) elaborates that reliability is present when a measure is applied repeatedly and still produces the same results.

Reliable questions, according to Bailey (2007:184), are those that, irrespective of when they are asked, produce the same replies from applicants. Steadfast respondents are those who deliver reliable responses. Assumptions are reliable if diverse investigators draw comparable ones from similar information.

According to Salkind (2012:119-122), there are four types of reliability—test-retest, parallel-forms, inter-rater and internal consistency reliability. How stable a test is over time is called a test-retest measure. Where different forms of the identical examination are given to the same cluster of participants are called parallel forms. Inter-related reliability is a degree of consistency from interval to interval or even examination to examination, and finally, internal constancy scrutinises how incorporated the objects are in an examination or valuation. The survey were conducted over a interval period of six months and that is how validity was ensured.

The residents and the municipal staff completed two questionnaires which revealed in responses. Reliability can be ensured by minimizing sources of measurement error like data collector bias. Data collector bias was minimised by the researcher by appointing a fieldworker to administer the questionnaires for the chris hani community and municipal staff answering the questionnaires on their own. And standardising conditions such as exhibiting similar personal attributes to all respondents, such as friendliness and support.

3.11 Ethical considerations

The conducting of research requires the application and consideration of ethical research principles. The rights to informed consent, anonymity, self-determination, and confidentiality were considered in the current study.

Information collected from the respondents was not influenced or changed in any way to meet the requirements of the researcher. The researcher complied with the guiding principles of ethical research of the Cape Peninsula University of Technology. Ethical clearance to conduct this study was approved by the Cape Peninsula University of Technology (see Appendix A). The questionnaires contained an introductory paragraph informing participants of their rights and briefly outlined the study to them. An informed consent form (see Appendix D) was signed off by all respondents before beginning with the research questionnaires. Burns and Burns (2008:35) outline the principles of the consent form as listed below:

- The nature of the research is bounded in the consent form;
- A statement affirming that participation in the study is voluntary is contained in the consent form;
- It is stated on the consent form that the respondents have confidentiality rights and rights to withdraw from the study;
- The confidentiality of their responses and anonymity was assured and guaranteed; The physical and psychological environment where the data were collected was made comfortable by ensuring privacy, confidentiality and general physical comfort. Subjects were requested not to write their names on the questionnaires to ensure anonymity and
- The institution to which the researcher is affiliated and the contact details of the researcher were made available.

3.12 Chapter summary

This chapter discussed the research methodology applied in the current study, which was quantitative methodology. The primary data of this study were based on surveys and statistics that qualified it to be quantitative. The research paradigm of this study was interpretive, as the purpose was to comprehend subjective meanings regarding the several social views that relate to the theme of this study. The paradigm was further utilised to form interpretations of the research findings.

The chapter outlined the research design, which is cross-sectional and descriptive. This research design was suitable as it was key in assisting the researcher to examine the variables.

The sampling strategies were discussed. Non-probability sampling was employed to select participants randomly, in line with the purposive sampling style. The sample size of 226 was extracted from a population of 552. Data were collected using structured closed-ended

questionnaires, which included dichotomous questions, multiple-choice questions and Likert-type scale questions.

It was demonstrated that reliability and validity were ensured through reviewing existing literature, conducting a pilot study and obtaining approval from the CPUT Research and Ethics Committee. All ethical research principles were upheld in the conduct of this study. Coding was applied when processing data and statistics. Lastly, SPSS v18 was used to analyse data and a descriptive statistical analysis was employed to process data. Tables and graphs were utilised to depict frequencies, as well as the relevant arithmetic means that were used to answer the research questions.

CHAPTER 4

DATA ANALYSIS AND PRESENTATION OF RESULTS

4.1 Introduction

The previous chapter discussed the methodology and research methods applied in this study to investigate the relationship between internal controls and health hazards in the Chris Hani informal settlement located in Witzenberg, Boland Region of the Western Cape. The questionnaire development was described, as well as sample selection and composition. A sample of 226 was set and questionnaires were the data collection tools.

This chapter discusses results after SPSS v18 was applied to analyse the data. Both descriptive and inferential results are explained. The findings were reached in sequence by interpreting descriptive data which discussed the sample that was analysed in categories of gender, age, marital status, employment status, years residing in the Chris Hani informal settlement, respondent's language and the respondent's level of education. This is followed by the inferential statistics, reliability and validity analysis, normality analysis, analysis of service delivery effectiveness in the Chris Hani informal settlement, analysis of factors that impede environmental risk control activity in the Chris Hani informal settlement, analysis of research objectives and ANOVA testing.

4.2 Analysis of data

This section presents the analysis of data that were collected from the questionnaires to fulfill the key research objectives. De Vos (2002:339) explains data analysis as "the process of bringing order, structure, and meaning to the mass of collected data". The survey was conducted in Witzenberg local municipality, within the Chris Hani informal settlement. The study's primary research objective was to examine the interconnection between internal controls and health hazards in the Chris Hani Informal settlement. The data preparation and analysis were done using SPSS v18 data analysis software. Raw data were collected from responses to the questionnaires that were administered.

In line with the sampling plan in Chapter 3, the sample size was set at 226 of which 16 questionnaires were not returned, leaving 210 completed questionnaires.

The analysis, interpretation and discussion of empirical findings are presented in the following sequence:

- Profiling of the respondents
- Frequency distribution tables
- Inferential statistics
- Reliability and validity analysis
- Normality analysis

- Analysis of the effectiveness of service delivery in the Chris Hani informal settlement
- Analysis of factors that impede environmental risk control activity in the Chris Hani informal settlement
- Analysis of research objectives (One sample test)
- Lastly, ANOVA testing.

4.2.1 Profile of respondents

In the data analysis, the first phase profiled the respondents' demographic characteristics. It was important to record these characteristics because it helped the researcher to better understand the study respondents in terms of their gender, age, language, educational status, years residing in the Chris Hani informal settlement, employment status and their marital status.

<i>Total respondents</i>	<i>Questionnaires completed</i>	<i>Questionnaires not completed</i>	<i>Response rate</i>
226	214	12	94.7%

The following table represents the demographic analysis. For this study, each of these individual demographic characteristics illustrated below in Table 4.1 has been extracted for individual analysis.

Table 3.1 Table for determining sample size

DEMOGRAPHIC CHARACTERISTICS (N)		ANALYSIS	FREQUENCY (%)
Gender	Male	101	48.1
	Female	109	51.9
Age	Under 30 years	48	22.8
	30-39 years	102	48.6
	40-49 years	32	15.2
	50 and over years	28	13.4
Marital Status	Single	155	73.8
	Married	41	19.5
	Divorced	8	3.8
	Widow	6	2.9
Employment status	Unemployed	69	32.8
	Employed	141	67.2
	Self-employed	0	0.00
	Other	0	0.00
Years residing in Chris Hani	1-3 Years	44	20.9
	4-6 Years	69	32.8
	7-10 Years	53	25.4
	10+ Years	44	20.9
Respondent's language	Afrikaans	67	31.9
	English	0	0.00
	IsiXhosa	116	55.2
	Isisulu	0	0.00
	SiSotho	27	12.9
Level of education	No education	15	7.1
	Primary	59	28.1
	Secondary (Matric/ grade 12)	134	63.8
	Tertiary (Diploma or Degree)	2	1.0

4.2.2 Gender composition of the sample

Figure 4.2 below presents the gender composition of the study, which was 101 males (48.1%) and 109 females (51.9%). The results suggest that there are more females than males in informal settlements. Jooste and Mathibela (2020:33) confirm that Asivikelane, an initiative of several grassroots organisations that give voice to residents of informal settlements in South Africa, reports that women are significantly more likely to participate in their campaigns. On average, 65% of Asivikelane respondents were reported to be female. Taken as a proxy for engagement, the findings suggest that women are more likely to play a role in community initiatives and advocacy in informal settlements than their male counterparts are (Jooste & Mathibela, 2020:33).

A policy briefing about women, power and policymaking reported that in community participation, men dominate in leadership roles while engagement around specific community initiatives, women feature strongly (Matsie, 2019:11). Observations on upgrading practitioners

of informal settlements by using gender-disaggregated data according to gender have enabled practitioners to note distinctions in the way that men and women participate and subsequently improve, plan and implement progress within informal settlements (UN-Habitat Report, 2012:11).

The GGLN (2011:32) argues that while male leadership does not marginalise the participation of women, the power bias of leadership roles in the cultural context of patriarchal relations is notable. It was also highlighted that women tend to raise more technical and vulnerability issues, such as safety concerns and toilets. Women in informal settlements often fulfil the role of the primary child-carer so they are more attuned to the safety-related issues of harmful threats (United Nations Population Fund [UNFPA], 2020:2). Akala (2018:234) notes that issues raised by men are related to political concerns. Participation by male residents appeared to be politicised with less engagement on substantive decisions regarding the informal settlement and upgrades or improvement thereof.

This scenario suggests that the problem of housing shortage affects both males and females and the female counterparts have taken matters into their own hands to provide housing for themselves without having to depend on their male counterparts.

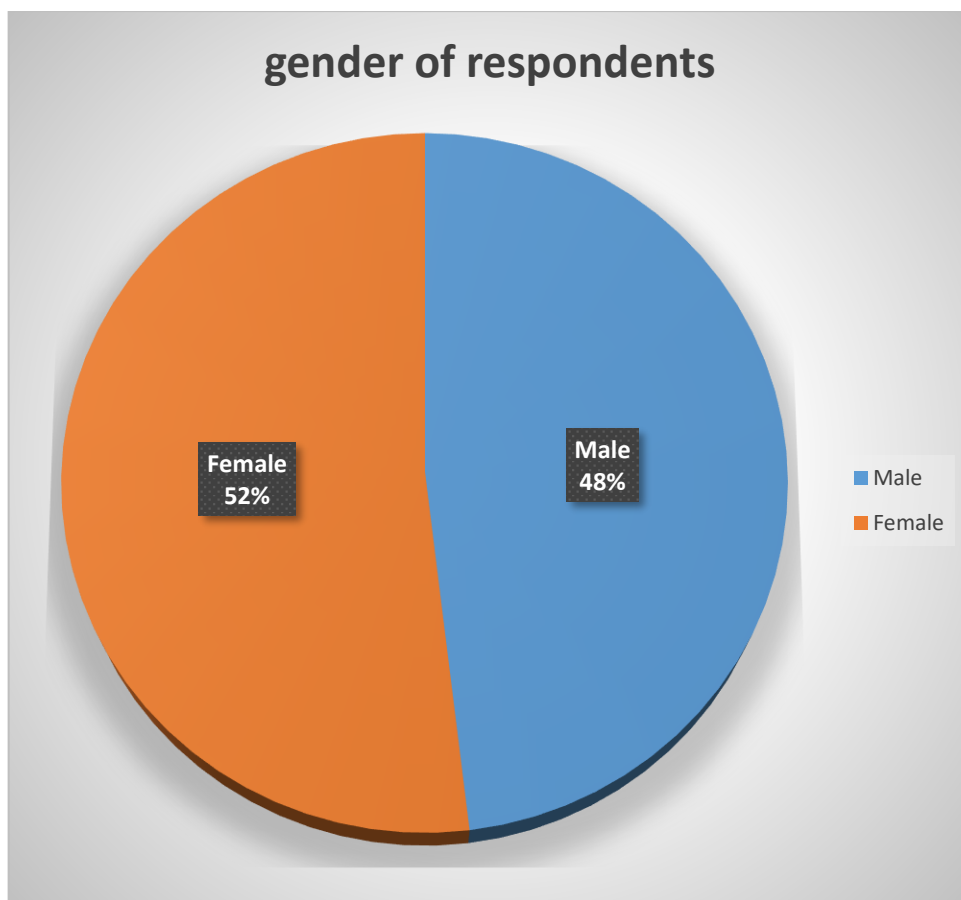


Figure4.1: Respondents' gender composition

4.2.3 Age of respondents

Figure 4.3 below presents the age of the respondents in the study. The sample indicates that 22.8% (n=48) of the respondents were younger than 30 years, 48.6% between the age of 30-39 years (n=102), 15.2% (n=32) were aged between 40-49 years, and 13.4% (n=28) represented the age group 50 years and older.

The results indicate that most residents in Chris Hani are in the age category of 30-39 years. This is because, as highlighted by Hunter and Posel (2012:287), people within the 30-39 age group are under pressure to work for their children. This age group stays in cheaper, more vulnerable areas because they need to support their children and other more expensive accommodation is beyond their means. Huchzemeyer (2003:599) indicates that this age group comes to the city to find employment and stay in informal settlements like Chris Hani as the first access point. These are the people who were available to participate in the study.

The findings show that at least 70% of the respondents of an age where they are economically active. These results support Turner (1969:522) that informal settlements are a source of cheap labour for the industries in the cities

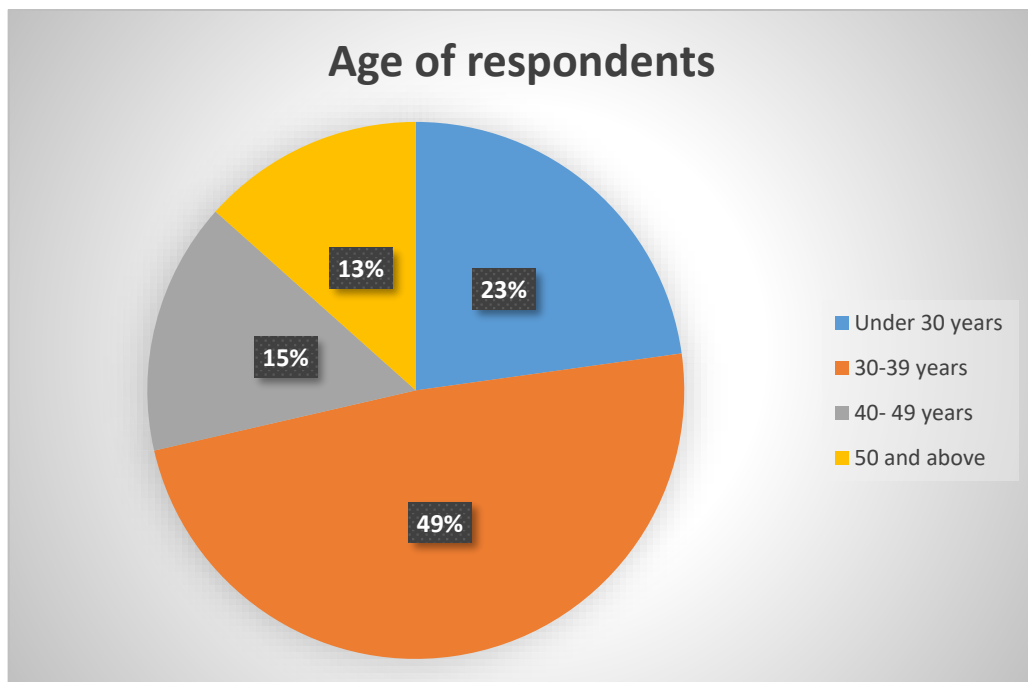


Figure 4.2: Age of respondents

4.2.4 Language of the respondents

The graph in Figure 4.4 below shows the language of the study respondents. It shows that 31.9% (n=67) represent the Afrikaans language, 55.2% (n=116) represent IsiXhosa language,

followed by Sesotho at 12.9% (n=27). It can be concluded that the Chris Hani informal settlement is dominated by the isiXhosa-speaking group followed by the Afrikaans-speaking group.

There are 11 official languages of South Africa of which Xhosa is one of the most widely spoken (South Africa Gateway, 2021:2). According to the StatsSA (2011:3), approximately 16% of the South African population or 8.3 million have Xhosa as their home language.

South Africa is known as the rainbow nation, a title that captures the cultural and ethnic diversity of the country. According to StatsSA (2011:2), of the 51.7 million South Africans, over 41 million are black, 4.5 million white, 4.6 million coloured and about 1.3 million Indian or Asian. About 51.3% are female and 48.7% are male. According to Statista (2019:27), South Africa is divided into four major ethnic groups of which the Zulu and Xhosa are the largest. Afrikaans is spoken as a first language by 60% of white South Africans and 90% of the coloured population (Statista, 2019:27). Afrikaans is the second or third language of many South Africans.

According to StatsSA (2011:6), the racial makeup of Tulbagh comprises 69.3% coloureds and 22.7% blacks.

The study results are supported by StatsSA (2015:4) that indicate that most informal settlement dwellers are blacks, followed by coloureds.

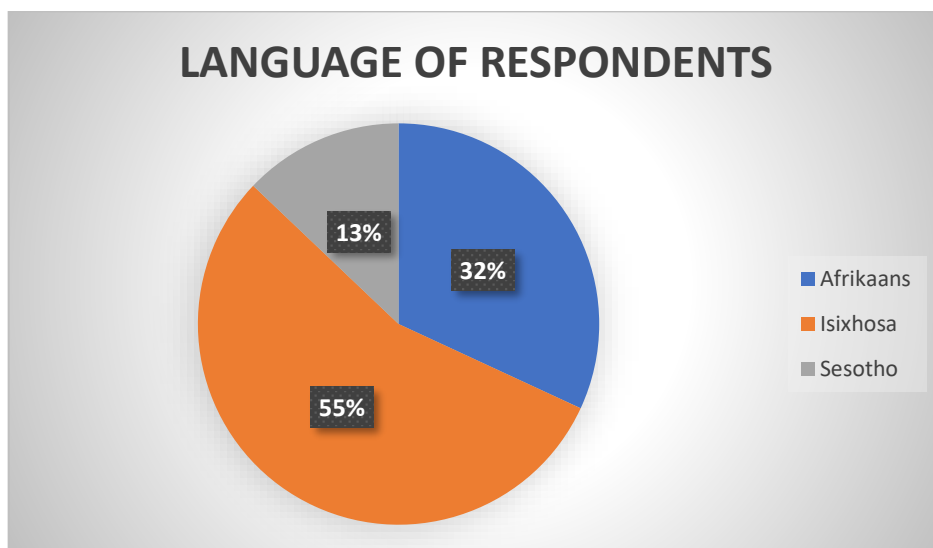


Figure 4.3: Language of respondents

4.2.5 Educational status of the respondents

Figure 4.5 below shows the educational qualifications of the respondents. It shows that more than 70% of respondents have primary or secondary education, 28.1% (n=59) have primary education, 63.8% (n=134) secondary education and 7.1% (n=15) have no formal education.

The residents of the Chris Hani informal settlement are poor but do not exist in utter deprivation. This shows that low levels of education exist for the residents of the Chris Hani informal settlement. Mutisya et al. (2016:751) highlight that poor educational levels could be a plausible explanation why most of the respondents live in such an illegal, unauthorised portion of land that had not previously been proclaimed for residential use by the government.

Andrew (2014:1) indicates that poor income can increase poverty and poor health of people when they lack proper education. Mutisya et al. (2016:752) further note that education is the key to wealth and achievements in life and living standards of people, and that educated parents with high incomes provide their children with a stable home environment which encourages children to remain at home.

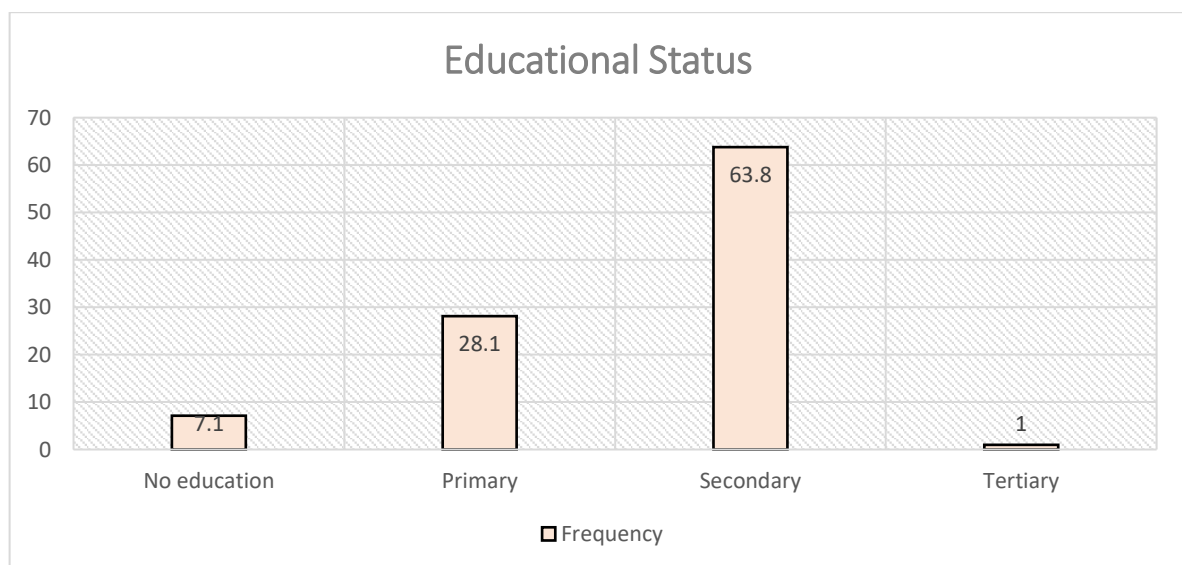


Figure: 4.4 Educational status of respondents

4.2.6 Respondents' years residing in Chris Hani informal settlement

Figure 4.6 below shows the number of years the study respondents have lived in the Chris Hani informal settlement. The majority of respondents have lived in Chris Hani for 4–6 years (32.9%, n=69), followed by respondents in the 7–10 years category (25.4%, n=53). Respondents in the 1–3 years and 10+ years categories each represent 20.9% (n=44). The

Chris Hani informal settlement is the centre of informal housing; it can be concluded that there is rapid growth within the Chris Hani informal settlement.

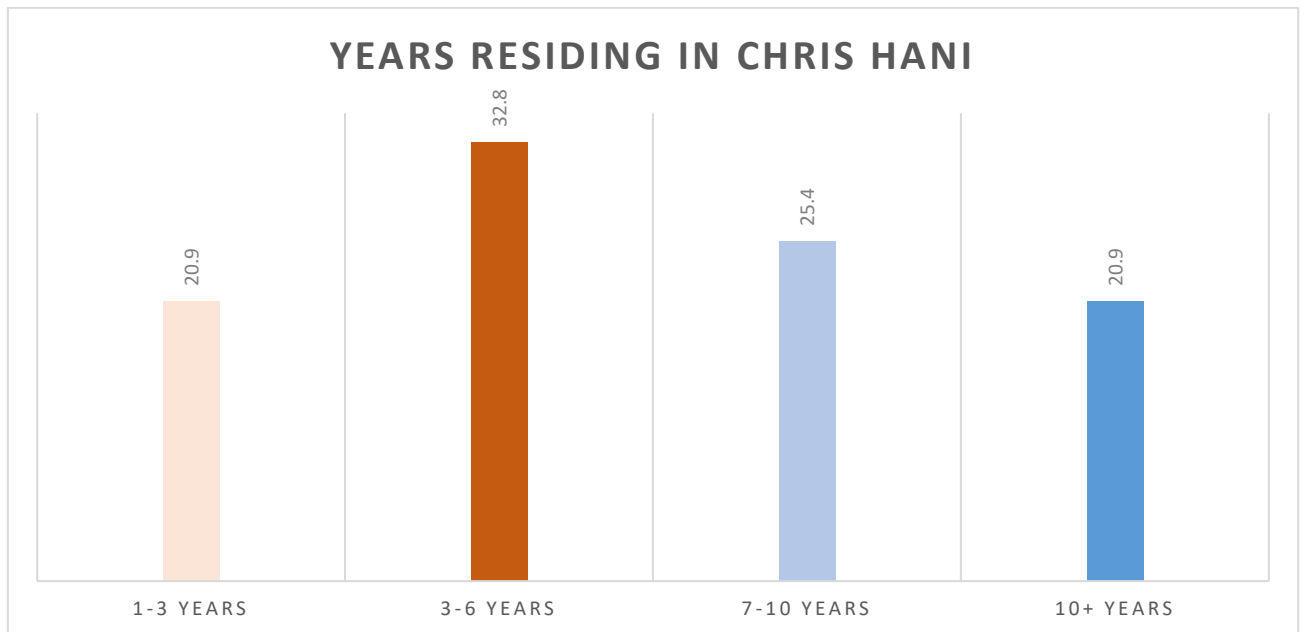


Figure 4.5: Years resident in the Chris Hani informal settlement

4.2.7 Employment status

Figure 4.7 below shows the study participants' employment status. It shows that 32.8% (n=69) of the respondents are unemployed and 67.2% (n=141) of the respondents are employed. This suggests that most of the residents of the Chris Hani informal settlement are part of the working class and contribute to the economy.

This shows that most of the households are headed by women and living in or on the edge of destitution. The households of the Chris Hani informal settlement are marginal to the economy of the Witzenberg Region and must be viewed as an informal settlement with special needs.

Hurskainen (2004:70) argues that unemployment and poverty are social characteristics often seen in informal settlements, which aligns with Kjellstrom and Mercado (2008:570), who opine that it causes human tragedy, forcing people into criminal activities. Most people in informal settlements have to rely on agricultural and domestic employment to earn an income (Oldewage-Theron & Slabbert, 2008:93).

Furthermore, the majority however although poorer than formal township dwellers, are integrated into the formal economy of the region and have the income to spend on housing. They live in an informal settlement, not because they are socio-economically marginal but because of the massive shortage of housing.

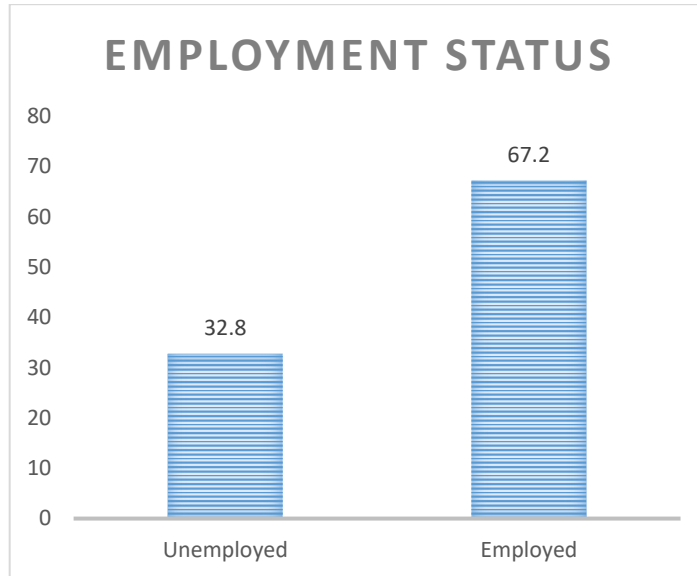


Figure 4.6: Employment status of respondents

4.2.8 Marital status

Figure 4.7 below depicts the marital status of the study respondents. The results show that 73.8% (n=155) of the respondents are single, followed by 19.5% (n=41) of married respondents, 3.8% (n=8) of divorced respondents and 2.9% (n=6) of the respondents are widowed. Individuals who are most likely to reside in the Chris Hani informal settlement are in the single category.

According to Posel and Casale (2003:459), fewer marriages are evident across South Africa and many cohabiting couples live in informal dwellings. The Chris Hani household data shows that considerably more respondents are single. Single people live in informal settlements like Chris Hani while in search of more permanent housing (Posel & Casale, 2003:460).

Data from the World Bank's (2007:3) general household survey show that single-person households have grown the fastest, while the data collected from the Chris Hani informal settlement show that almost 70% of households are headed by individuals who are single.

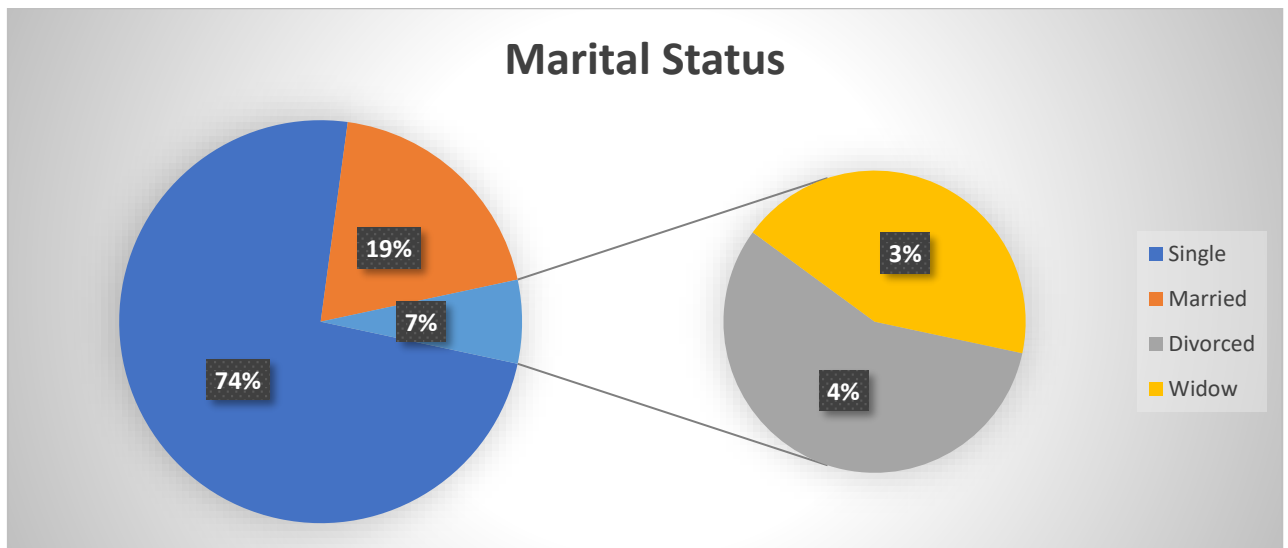


Figure 4.7: Marital status of respondents

4.3 Inferential statistics

For this study, the inferential statistics comprise correlation analysis, reliability and validity analysis, normality analysis, T-Test and ANOVA testing, which assisted the researcher to extend inferences from the data to more general conclusions. Therefore, using inferential statistics confirmed the researcher's aim to investigate the interconnection between internal controls and the health risks in the Chris Hani informal settlement.

4.3.1 Normality analysis-skewness and kurtosis

Table 4.8 below concludes that there is no significant difference in the state of living in the Chris Hani informal settlement about service delivery. With regards to the frequency of awareness programmes done on healthy living in the Chris Hani informal settlement, the responses were normally distributed. The respondents indicated a significant difference relating to overcoming the challenges that impede the effective internal control of health hazards in the Chris Hani informal settlement.

Table 4.2: Normality analysis

Variables	Observation	Items	Normality Analysis	
			Pr(skewness)	Pr(Kurtosis)
How do you find living in this informal settlement in terms of service delivery?	210	3	0.0066	0.0056
How often are awareness campaigns done on healthy living in your area?	210	4	0.0072	0.0021
How often are awareness campaigns done on environmental health awareness in your area?	210	8	0.0142	0.0000
Overcoming the challenges impede effective internal control of health hazards	210	9	0.0015	0.0340

4.3.2 Reliability and validity analysis

Reliability and validity assessments were conducted in this study to evaluate the quality of the measurement model for the full sample. Reliability measures the level of consistency found within independent constructs (Churchill & Iacobucci, 2005:258). Reliability assessment was based on the Cronbach Alpha (α) composite reliability and average variance. The validity assessment included construct analysis as recommended by Nunnally (1978:246), that a reliability benchmark value of 0.700 and above should be regarded as acceptable.

4.3.3 Internal consistency reliability

Table 4.3 below presents the outcome of Cronbach's Alpha reliability test. The reliability test was conducted on the measuring instrument (statements) to determine whether the scale was reliable or not. The independent variables of service delivery and awareness programmes recorded acceptable reliability of 0.7 and 0.8 respectively, indicating that the environmental risk scale that was used in this study was consistent.

The results show the correlation between the respective items and the total sum score (without the respective item) and the internal consistency of the scale (coefficient Alpha) if the respective item were to be deleted. By deleting the items by one each time with the statement with the highest Cronbach Alpha value, the total Alpha value will increase. The right-hand column of the table shows the reliability of the scales, it is assumed though that these would be higher if some of the item statements were deleted. For instance, the type of environmental risk impeding internal control of health hazards has an overall Cronbach Alpha Coefficient of 0.838. It is important to note that if the Cronbach Alpha Coefficient is less than 0.70, the measuring instrument is possibly not reliable, or it could be measuring more than one aspect. Access/availability of basic needs has the lowest Cronbach Alpha Coefficient of 0.709, which

is also above the lower limit for reliability. These results conclude that the residents' responses are reliable in the study.

Table 4.2: Cronbach's Alpha reliability test

Variables	Cronbach Alpha
Type of environmental risk impeding internal control of health hazards	0.838
Community perceptions towards corporate governance of the municipality	0.805
Access/availability of basic needs in the area	0.709
Frequency of awareness campaigns for environmental and healthy living	0.823

4.3.4 Scope of service delivery in the Chris Hani informal settlement

Table 4.4 below depicts the scope of service delivery in the Chris Hani informal settlement .

In Table 4.4, for the first statement, the mean is 1.07, which shows that most respondents strongly disagreed that they receive service delivery in the Chris Hani informal settlement. The mean of the second statement is 2.09, showing that the respondents disagreed that they are represented in municipal meetings. The mean of the third statement is 2.20, which indicates that the respondents disagreed that the Witzenberg Municipality has qualified staff monitoring health hazards in the Chris Hani informal settlement.

The respondents indicated that they regularly experience problems in the Chris Hani informal settlement with regards to service delivery (mean score of 4.06). The respondents disagree that community leaders have sufficient and sound knowledge of the health hazards in the Chris Hani informal settlement (mean 2.06); the mean of 4.11 indicates that the respondents strongly agree that they have access to water and sanitation in the Chris Hani informal settlement, and the residents agree that they do have access to electricity and energy sources (mean 3.76)

Respondents disagreed (mean 1.67) that the municipality considers all stakeholders' inputs when developing roll-out plans for service delivery. A mean 1.09 indicates that respondents strongly disagreed that the municipality uses consultative engagements on matters relating to service delivery. The respondents disagreed (mean 2.09) that the local municipality plans comply with the required standards for the Chris Hani informal settlement. The respondents agree (mean 3.65) that the awareness campaigns run by the local municipality on the dangers caused by the environmental risks are useful.

It can be concluded from the results that service delivery effectiveness is not satisfactory to the community of the Chris Hani informal settlement.

Table 4.3: Service delivery effectiveness

						TOTAL	MEAN	DECISION
	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE			
I receive service delivery in informal settlement of Chris Hani.	97	97	14	2	0	210	1.07	S/Disagree
	46.2%	46.2%	6.6%	1.0%	12.2%	100.0%		
The community of Chris Hani is represented in the municipal meetings.	123	77	10	0	0	210	2.09	Disagree
	58.6%	36.7%	4.7%	0.0%	0.0%	100.0%		
Municipality has qualified staff monitoring health hazards in the informal settlement.	91	86	27	6	0	210	2.20	Disagree
	43.3%	40.9%	12.8%	3.0%	0.0%	100.0%		
I regularly experience problems living in this informal settlement of Chris Hani	0	0	9	48	153	210	4.06	Agree
	0.0%	0.0%	4.3%	22.9%	72.8%	100.0%		
Community leaders have sufficient and sound knowledge of the health hazards	46	76	46	27	13	210	2.06	Disagree
	22.0%	36.3%	22.0%	13.2%	6.6%	100.0%		
In this informal settlement, we have access to water and sanitation	0	0	3	197	10	210	4.11	S/Agree
	0.0%	0.0%	1.4%	93.9%	4.7%	100.0%		
In this informal settlement, we have access to electricity and energy resources	0	0	8	191	11	210	3.76	Agree
	0.0%	0.0%	3.8%	90.9%	5.3%	100.0%		
Municipality considers all stakeholders' inputs when developing roll-out plans for service delivery	81	117	11	1	0	210	1.67	Disagree
	38.6%	55.7%	5.2%	0.5%	0.0%	100.0%		
Municipality uses consultative engagements on matters relating to service delivery	119	76	13	3	0	210	1.09	S/Disagree
	56.2%	36.2%	6.2%	1.4%	0.0%	100.0%		
Community plans comply with required standards for this informal settlement.	129	71	10	0	0	210	2.09	Disagree
	61.4%	33.8%	4.7%	0.0%	0.0%	100.0%		
The municipal campaigns about the dangers of these environmental risks are useful	0	8	6	38	158	210	3.65	Agree
	0.0%	3.8%	2.9%	18.1%	75.2%	100.0%		

4.3.5 Factors that prevent environmental controls in Chris Hani

Three data central measures—median, mean and standard deviation—were used to represent the results of this study. According to Gravetter and Wallnau (2013:72), mean values are normally used to rank or prioritise items, whereas median values are used to provide an insight

into the absolute middle value (average). The central measures were used as the basis for a five-point Likert scale to determine the point of “neutral” or “moderate” where the mean value is 3. In the same manner, a mean of >3 represents agreement whereas a mean of <3 represents disagreement.

Table 4.5 below represents the analysis of factors that impede environmental risk control activity. The respondents agree that risk control strategies are not carefully planned in the Chris Hani informal settlement confirmed (mean 3.64) supported by the Disaster Mitigation for Sustainable Livelihoods Programme (DMSLP) (2008:32). Respondents strongly disagree (mean 1.42) that resources are appropriately spread across all phases of the hazard control process. Bryant (1998:85) indicates that a lack of resources leads to the degradation of the environment and increases risks. With a mean score of 2.13, the respondents disagree that adequate community engagements are done by the staff or officials from the local municipality. Information from the community is that the officials visit initially but never follow up. The problem is that although the officials make out that a lot is done by the municipality to improve the lives of the people in the informal settlements, in reality, nothing is done. They focus on the homes of more affluent residents who are paying for rates and services, while the poor are ignored.

Table 4.4: Analysis of factors that impede environmental risk control activity

						Total	Mean	
	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree			
Risk control activities not carefully planned in this community	0	0	9	48	153	210	3.64	Agree
	0.0%	0.0%	4.3%	22.9%	72.8%	100.0%		
Resources are appropriately spread across all phases of the hazards control process	91	86	27	6	0	210	1.42	S/Disagree
	43.3%	40.9%	12.8%	3.0%	0.0%	100.0%		
Adequate community engagements are done by staff or officials from the municipality	46	76	46	27	13	210	2.13	Disagree
	22.0%	36.3%	22.0%	13.2%	6.6%	100.0%		
The environmental risk campaigns are not clearly articulated	0	0	8	191	11	210	3.97	Agree
	0.0%	0.0%	3.8%	90.9%	5.3%	100.0%		
The environmental risk campaigns are often not completed	0	8	6	38	158	210	2.95	Agree
	0.0%	3.8%	2.9%	18.1%	75.2%	100.0%		
Service delivery is done within agreed timeframes as set out with members	119	76	13	3	0	210	1.34	S/Disagree
	56.2%	36.2%	6.2%	1.4%	0.0%	100.0%		
The municipal staff are not consisting of members with mixed skills and experience	0	8	6	38	158	210	3.89	S/Agree
	0.0%	3.8%	2.9%	18.1%	75.2%	100.0%		
The environmental controls are not activated through to household level	0	0	9	48	153	210	4.13	S/Agree
	0.0%	0.0%	4.3%	22.9%	72.8%	100.0%		

A mean of 3.97 indicates that the residents confirm that environmental risk awareness campaigns are not clearly articulated and are often not completed (mean 2.95). The respondents strongly disagree (mean 1.34) that service delivery is done within the agreed timeframes as set out with residents. With a mean score of 1.34, the respondents strongly agreed that municipal staff does not consist of officials with mixed skills and experience. Lastly, the respondents strongly agree (mean score of 4.13) that the environmental controls are not activated through to the household level.

Table 4.5 reveals, together with the detailed interpretation, that the lack internal of environmental risk controls within the Witzenberg Local Municipality is one of the contributing factors to exposure to the environmental risks that exist within the Chris Hani informal settlement and that could be the major reason that impedes effective service delivery.

4.3.6 Environmental risk controls in Chris Hani

Table 4.6 below represents the analysis of the research objectives in the study. No controls exist to overcome environmental risks in Chris Hani. Secondly, it is noteworthy that household-level participation as an environmental control activity can contribute to the alleviation of the environmental risks in Chris Hani. Thirdly, the existing factors that interfere with the effective functioning of the municipality's operations and objectives specifically within Chris Han and lastly, the ability to overcome challenges that will reduce the environmental risks in the Chris Hani informal settlement.

The analysis of the environmental controls in the Chris Hani informal settlement shows that controls must be implemented to reduce environmental risks and that household participation can impact positively as an environmental risk control activity. Few (2003:51) states that coping capacity is increasingly acknowledged as a key component of a household or community's level of vulnerability. Chaplin et al. (2006, cited by Ford et al., 2007:159) argue that interventions to reduce vulnerability will be more successful if they are identified and developed in cooperation with residents as they are likely to have the trust of the community. Factors that prevent the effective functioning of risk controls in the Chris Hani informal settlement need to be identified and monitored. A holistic approach to overcome these challenges will contribute to the reduction of environmental risk exposure in Chris Hani.

Table 4.5: Analysis of research objectives; one sample test (test value=3)

	N	Mean	Std. Deviation	t-statistics	Sig(2-tailed)
Controls that are in place for the mitigation of the environmental risk	1179	3.65	1.219	18.444	0.000***
Household level participation in effecting environmental risk control activity	727	3.04	1.141	.942	0.346
Factors that impede effective functioning of risk controls	724	2.81	1.175	-4.271	0.000***
Overcoming challenges that reduce environmental risks in informal settlements	816	3.20	1.230	4.609	0.000***
***, **, * on the p-value represent 1%, 5%, 10% respectively					

4.3.7 Degree of service delivery among the different Chris Hani demographics

Table 4.7 below shows the degree of effectiveness of service delivery between different demographic characteristics of the respondents. The table shows no significant difference in service delivery to groups of different gender, age, marital status, educational levels and employment characteristics. It can therefore be concluded that the community perceives the effectiveness of service delivery the same.

This is consistent with the findings of Vivier and Wentzel (2013:247) that individuals who have a bad relationship with government are unlikely to report being satisfied with basic services.

Table 4.7: ANOVA - Degree of effectiveness of service delivery with demographics

Examine the effectiveness of environmental control activity		Sum of Squares	Df	Mean Square	F	Sig.
Gender	Between Groups	0.091	1	0.092	0.438	0.511
	Within Groups	17.96	86	0.207		
	Total	18.07	87			
Age	Between Groups	0.287	4	0.073	0.331	0.857
	Within Groups	17.36	80	0.217		
	Total	17.63	84			
Marital status	Between Groups	1.619	4	0.403	2.057	0.093
	Within Groups	15.93	81	0.197		
	Total	17.55	85			
Employment status	Between Groups	1.076	3	0.359	1.721	0.169
	Within Groups	16.46	79	0.208		
	Total	17.53	82			
Educational Level	Between Groups	0.008	1	0.008	0.035	0.851
	Within Groups	17.78	83	0.214		
	Total	17.79	84			

***, **, on the p-value represent 1%, 5% and 10% respectively.

4.3.8 Environmental controls among different Chris Hani demographic groups

Table 4.8 depicts the environmental risk controls and demographics of the residents. The analysis found no significant difference between the male/female groups and the implementation of environmental risk controls. Secondly, no significant difference was found in how the residents view environmental controls, and the implementation of environmental risk controls across different age groups, marital status and educational levels. Good governance is an important determinant of urban health (Vlahov et al., 2007:20). However, with regards to the employment characteristics, a significant difference was found between the employed respondents and the unemployed respondents, which highlights that the main contributing factor to this difference is the level of education of the employed and unemployed. The researcher expected education levels and levels of environmental knowledge to correlate and that education would influence environmental health perceptions since it enhances the knowledge of an individual, in other words, a higher education level will increase a person's chance of understanding environmental health. The researcher also anticipated that education levels would correlate with employment rates since people with higher education levels were more likely to be employed.

Education levels are low in the Chris Hani informal settlement, with most residents reaching secondary levels. The results show that education informs environmental health perceptions. Despite the ability to understand environmental health, individuals' varying levels of education influence how they interpret the effects of the internal controls.

Table 4.8: ANOVA - Environmental risk controls and demographics

		Sum of Squares	Df	Mean Square	F	Sig.
Gender	Between Groups	0.514	1	0.514	1.969	0.164
	Within Groups	22.991	88	0.261		
	Total	23.505	89			
Age structure	Between Groups	2.262	4	0.565	2.212	0.075
	Within Groups	20.961	82	0.256		
	Total	23.222	86			
Marital status	Between Groups	0.726	4	0.181	0.685	0.604
	Within Groups	21.962	83	0.265		
	Total	22.687	87			
Employment status	Between Groups	2.112	3	0.704	2.820	0.044**
	Within Groups	20.215	81	0.250		
	Total	22.326	84			
Educational Level	Between Groups	0.042	1	0.042	0.161	0.689
	Within Groups	22.465	85	0.264		
	Total	22.508	86			
***, **, on the p-value represent 1%, and 5%, respectively.						

4.4 Chapter summary

In most cases, lack of service delivery is measured against financial loss. However, in this study lack of service delivery is not perceived in monetary value, it is measured against a healthy living environment for the residents of the Chris Hani informal settlement, which is a basic human right. There is a plethora of literature on the relationship between informal settlements and service delivery challenges. The findings of this study will contribute to knowledge about relationships between informal settlements, municipal service delivery, and exposure to environmental and health risks.

The aim of the current study was to determine the interconnection of environmental health risks in the Chris Hani informal settlement and the internal controls of Witzenberg Municipality. Regression analyses were undertaken to validate the theoretical background to the relationships that exists among these constructs. A positive linear association of these constructs was established and validated. The T-test evaluated the significance of differences of means obtained by socio-demographic variables, namely gender, age, marital status, employment status and educational level of the respondents.

The reliability of the scales was computed using the Cronbach Alpha values, composite reliability and average variance. Satisfactory reliability values (above the benchmark of 0.70)

were obtained in relevant sections of the measuring instrument. Various validity measures, including construct, were also undertaken. The research hypothesis was tested using the one-sample test.

The final chapter, Chapter 5, presents the findings, makes recommendations and concludes the study.

CHAPTER 5

FINDINGS, RECOMMENDATIONS AND CONCLUSIONS

5.1 Introduction

According to Oni et.al. (2016), the landscape of cities in Africa has been radically reformed by urbanisation and inner-city development, therefore exposing residents to greater health risks. Most of the urban inhabitants now live in informal environments without access to basic services and public facilities, and healthcare systems are unable to provide affordable comprehensive cover. These urban conditions are compounded by social and economic vulnerability, given the gap exposure resulting in wellbeing injustices. Driven by Africa's considerable and complex load of disease and high levels of injustice, notwithstanding demanding requirements, urban health and urban health fairness have not developed as major research and policy urgencies in Africa. South Africa, like many other African countries, trails behind in addressing these subjects.

A local municipality may govern the affairs of its community, in line with the provisions of national and provincial legislation (South Africa, 1996a).

Good governance by local municipalities is crucial for overcoming the inequalities in South Africa, which is a developing country such as South Africa to (Brinkerhoff, 2004:377). The objectives of local government include providing suitable accommodation for their communities in a sustainable manner, ensuring a healthy physical environment, creating an environment conducive for the economic upliftment of its people, as well as promoting community involvement in local municipal matters (South Africa, 1996a:82). It is crucial for a local municipality to achieve its goals of providing basic services, meeting accommodation targets and ensuring reliable financial reporting. Good internal controls are paramount for a local municipality to accomplish its objectives and evade pitfalls and surprises along the way.

This study is very important in that it evaluates the relationship between internal controls and the delivery of services by the Witzenberg local municipality to the Chris Hani informal settlement. Another contributing factor is whether a proactive approach is utilised by the Witzenberg local municipality, that signifies effective internal controls to reduce the potential hazards and the environmental health risk exposure in the Chris Hani informal settlement.

5.2 Revisiting the objectives

The aim of this study was to determine the relationship between internal controls and health hazards, if any, in Chris Hani informal settlement in the Witzenberg Boland Region. To achieve this aim, the primary objective was to investigate the relationship between internal controls and environmental health hazards in the Chris Hani informal settlement.

To achieve this objective, the nature of the environmental health risks present in the Chris Hani informal settlement were identified, as well as the current internal controls at the Witzenberg local municipality. The internal control strategies that the local municipality and community can implement to mitigate the environmental health hazards were also identified.

5.3 Overview of the study aim

In most cases, lack of service delivery is measured against financial loss, however, in this study, the lack of service delivery was not perceived in monetary value but was measured against a healthy living environment for the residents of Chris Hani informal sector, which is a basic human right. Extensive literature and research studies exist on informal settlements and challenges posed by delivery of services. Findings of this study will add to the body of knowledge on informal settlements, municipal service delivery and environmental health risk exposure.

It was concluded from the literature that the existence of informal settlements is here to stay and that informal settlements are vulnerable to risks. People's lives are affected by the lack of service delivery in informal settlements, which exposes them to several health risks. In other words, informality is reality.

5.3.1 Methodology employed

The methodology chapter (Chapter 3) outlined how the research was conducted, addressing the process used to select the participants, the data collection method as well as the approach that was used in analysing the texts.

The research sample consisted of 226 participants but only 210 questionnaires were used for analysis. The sample size was determined by utilising Krejcie and Morgan's (1970:608) sample size determination table.

5.3.2 Summary of the results

It can be concluded from the results that the degree of service delivery effectiveness is not satisfactory to the community of Chris Hani, indicating inefficient internal controls in Witzenberg Local Municipality. Notably, the lack of internal controls contributes to the environmental risks that are prevalent within the Chris Hani informal settlement and this is a major factor that impedes effective service delivery.

As can be seen from the study results, there are no internal controls in place to mitigate the environmental risks in the Chris Hani informal settlement. Secondly, unfortunately, household-level participation in the Chris Hani informal settlement is non-existent but it would assist in alleviating the environmental risk exposure in the Chris Hani informal settlement.

To mitigate environmental risk within the Chris Hani informal settlement, internal controls need to be in place. Furthermore, factors that prevent the effective functioning of risk controls in the Chris Hani informal settlement need to be identified and monitored. From the results, a holistic approach to overcome the risks experienced by the residents of Chris Hani is needed from the local municipality and community to contribute to the healthy livelihood of the residents of the Chris Hani informal settlement.

The results in Chapter 4 were interpreted, discussed and presented graphically in tables, graphs and charts.

The core purpose of this study was to investigate the interconnection between environmental health risks in the Chris Hani informal settlement and the internal controls of the Witzenberg local municipality. To this end, correlation and regression analyses were undertaken to further validate the theoretical background of the relationships that exist among the constructs. A positive linear association of the constructs was established and validated. A T-test was also performed to evaluate the significance of differences of means obtained by the different socio-demographic variables, namely gender, age, marital status, employment status and educational level of the respondents.

The reliability of the scales was computed and established using the Cronbach Alpha values, composite reliability and average variance. Satisfactory reliability values (above the benchmark of 0.70) were obtained in relevant sections of the measuring instrument. Various validity measures, including construct, were also undertaken.

In the following section, the key findings are summarised in the context of the research questions. Each research question is discussed in turn.

5.3.3 Major environmental hazards that affect the Chris Hani informal settlement

The Chris Hani informal settlement in Tulbagh was the focus of this research because this informal settlement has experienced numerous socio-economic protests in recent years, directly related to the non-delivery of services by the Witzenberg local municipality.

Another factor supporting this research into the Chris Hani informal settlement is the health reports from the municipal health department regarding the many complaints and concerns predicated on environmental health risks and the high number of communicable diseases prevalent in Chris Hani, as reported by the Tulbagh Clinic.

Hence, the Chris Hani informal settlement was the study area of choice to investigate whether the lack of internal controls leads to the environmental health risks in the Chris Hani Informal settlement.

The study reveals that the living conditions in Chris Hani are very harsh. Overcrowding, lack of potable water, electricity, no proper sanitation, lack of refuse removal and waste disposal all contribute to the health risks of residents.

From the data collected, the Chris Hani informal settlement is further noted to be vulnerable to risk from fire outbreaks. Fire risk in this community is high, due to the density of dwellings. The results also indicate that residents of the Chris Hani are at danger of flood risks during heavy rains. This is resultant from the high water table of the area and illegal and inappropriate construction practices of dwellings. In addition, most dwellings are built on the edge of a natural water course.

It was found that Chris Hani residents are vulnerable to diseases from lack of regular waste disposal, poor sanitation and poor sewage infrastructure. Benidell (2003:29) confirms the above statement, reporting that people living in settlements that lack basic services are exposed to diseases borne by rodents and flies that proliferate in areas of uncontrolled waste and refuse, poor sewage and sanitation infrastructure. Since rats carry infectious and fatal diseases, the Chris Hani residents are at risk of contracting diseases from the rats and mice. The results also indicate that the Chris Hani residents are exposed to indoor air pollution from combustion of oil and with limited ventilation, this poses a serious threat to their health. These people have no alternative energy source because they are poor. Although 93.4% have access to electricity, it is only for lighting but not for cooking or heating.

The Chris Hani residents are exposed to various risks to their health from the very poor living conditions. The respondents report that health risks in the Chris Hani informal settlement are due to poor service delivery and no basic services. DMSLP (2008:32) agrees with the respondents, stating that environmental health risks in informal settlements arise from the inadequate delivery of basic services and unsanitary practices of certain individuals. The conclusion is that poverty exacerbates environmental health problems. There is a great need for the improvement of living conditions of the Chris Hani residents.

5.3.4 Environmental risk controls and practices in the Chris Hani informal settlement

Although the Witzenberg local municipality is aware of the deplorable living conditions in Chris Hani, not much has been done to improve such conditions and no support has been given to the community. There are municipal strategies in place on how to assist the community but service delivery remains too slow. The municipal strategies are not clearly communicated to the residents; the results of the study show differing responses from municipal officials and residents. Municipal strategies are presented as if they are already being implemented in the community whereas the residents of the Chris Hani informal settlement are not aware of the strategies. The municipality and the ward councilor representing the community of Chris Hani

need to work hand in hand to bring awareness of what the municipality offers to address the risks to which the community is exposed.

In terms of risk control and practices, little has been done by the residents as they are more concerned with their livelihoods than trying to mitigate unknown municipal strategies. The residents of Chris Hani are aware of their appalling living conditions but they do not have an alternative. Living conditions are less than satisfactory and pose health risks to the residents and degrade the environment. Witzenberg local municipality has offered little support to the residents of Chris Hani, especially in terms of addressing environmental risks.

5.3.5 Relationship between respondent characteristics and risk management practices

Little difference was found in the analysis of male and female groups regarding the implementation of environmental risk controls. Also, no significant difference was noted between the age groups, marital status, and educational levels in how the respondents viewed environmental controls and their implementation.

However, a significant difference was found between employed respondents and unemployed respondents. This suggests that the level of education of employed versus unemployed individuals is a contributing factor for these significant differences.

5.3.6 Interconnection between controls and health hazards in the Chris Hani informal settlement

This study shows that the residents of the Chris Hani informal settlement do not have basic services. Levels of satisfaction with basic services varied by socio-economic status. Respondents are not satisfied with the service delivery from Witzenberg local municipality.

Progress in improving the delivery of basic services is slow and demand outstrips the supply. Improvement in infrastructure and basic service delivery would greatly reduce the vulnerability of the residents of Chris Hani.

This study reveals that the local municipality is reactive and not proactive because they do not have strategies in place. The main problem is the lack of communication and implementation of such strategies and plans.

The health hazards associated with the Chris Hani informal settlement have not been systematically addressed and responsiveness in terms of mitigating controls to reduce the risks remains fragmented. The lack of effective policies and procedures impact directly on the living conditions of the residents of Chris Hani informal settlement.

5.3.7 Obstacles to effective environmental risk management

5.3.7.1 Community participation

The results of the current study reveal that the community of the Chris Hani is not aware of any developments that take place within their community and believe that it is not their responsibility. They do not participate in the decision-making that would empower them to be more knowledgeable and involved in the risks to which they are exposed. In other words, the community does not participate in the development of the Chris Hani informal settlement. There is no integrated approach to address the physical, social, and economic development needs of the residents.

Notably, there are no community-based risk management programmes in place that will assist residents against the negative impacts of environmental risks. There are no educational and training programmes on environmental risk awareness presented to the community by the local municipality and other stakeholders. There are no formal community structures within the Chris Hani informal settlement to implement systems and procedures to improve the lot of residents.

5.3.7.2 Provision of basic services

Chris Hani residents suggest that their main problem is lack of basic services. They contend that if the local municipality provides them with proper housing, potable water, proper sanitation, electricity and regular waste removal it would assist in reducing environmental risks.

There is no provision of proper infrastructure to reduce environmental risk exposure and the level of vulnerability of the residents. Waste is not regularly collected each week because it is disposed of all over the place. The community is provided with communal toilets and taps but these are not properly maintained.

5.3.7.3 Planning interventions

There is currently no planning in place to define the appropriate strategies to respond to the existing challenges of the Chris Hani informal settlement. This is due to the alerts highlighted by the municipal health services in various reports to the local municipality about the infringement of the community with regards to Section 24 of the South African Constitution.

5.3.7.4 Integrated development planning

The Witzenberg Municipality IDP is not aligned to the needs of the Chris Hani informal settlement community but rather on the expansion of areas and economic viability. There is no effective planning that accommodates the Chris Hani community with a platform of engaging with the local municipality to address their needs. Currently, there are no solutions and policy tools to address social, economic, environmental, political, and spatial planning.

5.3.7.5 Environmental and planning education

There is no environmental education programme and planning in the Chris Hani community. There is no implementation of high-quality environmental education. Environmental opportunities are not maximised and constraints are not minimised to reduce the vulnerability

of the Chris Hani community. Environmental management and social development are not fully integrated in the municipal IDP.

5.3.8 Critical factors affecting sustainability within Chris Hani informal settlement

a) Rapid urbanisation and migration by the rural poor

Chris Hani is characterised by rapid growth and settlement by the poor for whom proximity to work opportunities overrides the hazards of settling on marginal land.

b) The role of the waterways acting as sewage disposal

The watercourse in the Chris Hani informal settlement is currently the local sewage system for the residents.

c) Waste disposal

Waste is often disposed of in waterways and alongside roadsides, creating blockages because there are no waste management systems and infrastructure. Lack of community environmental hygiene education programmes exacerbates the situation.

d) The implication of erosion, run-off, and drainage in unsealed settlements

Streets and drainage systems are in a very poor condition in Chris Hani.

5.3.9 Internal control processes of health hazards vs the needs of respondents

The study reveals a lack of communication between the municipality and the Chris Hani community about their right to a clean and healthy environment as set out in Section 24 of the Constitution. Secondly, lack of household participation is not conducive to taking responsibility and ownership of their environment. Thirdly, existing factors interfere with the effective functioning of the municipality's operations and objectives as they are not aligned with the needs of the Chris Hani community. Lastly, the local municipality might not be equipped to overcome challenges to reduce the environmental risks in the Chris Hani informal settlement.

5.3.10 Risk control and its contribution towards enhancing sustainable livelihoods

Risk management has been recognised as a critical component that helps to identify and manage risks that may hinder the achievement of strategic and operational goals. Such risks should be assessed and prioritised to be part of the annual internal audit plans. If the outcries of the community regarding basic services are still heard, the likelihood of service protests will increase, which negatively impacts the municipality's performance.

Current legislation mandates municipalities to deliver basic services. Legislation also directs municipalities to have an internal audit department and annually reviews, among other items, the achievement of pre-determined defined corporate targets.

Therefore, it must be inferred that solutions to the problem of lack of delivery of basic services to informal settlements are a mix of community-focused and political initiatives, as well as changes to the system of local regulation. It is a daunting challenge requiring both parties to work together to improve living conditions in informal settlements for residents.

Effective collaboration between the municipality and the community to develop the Chris Hani informal settlement could reduce the risks to which the community are exposed. From the municipality's side, educational programmes would be the best way to inform residents about the risks and how they can reduce them.

An effective governance framework is needed, which joins all key sectors and allows marginalised residents to be heard. The needs of the people in the Chris Hani informal settlement should be addressed. The Chris Hani informal settlement should be the municipality's priority to reduce the residents' vulnerability and exposure to risks. Employment should be created for people living in Chris Hani, which would also increase the independence of these residents.

Relocating residents should be also considered to improve their lives. Residents in the new settlements would require adequate infrastructure to support their wellbeing.

Management of Chris Hani need to reduce environmental risks to enhance the wellbeing of the residents of Chris Hani. Land use should be properly designated for residents living in informal settlements.

Government needs to abide by the provisions of the Constitution regarding accommodation in informal settlements and create awareness of the plight of residents.

5.4 Research implications

5.4.1 Implications for the academic fraternity

Lack of sustainability nurtures a breeding ground for risks and the central findings in this study highlight that sustainability needs to be incorporated into the risk management research domain. This study's findings show that by designing and implementing appropriate risk management strategies in the Chris Hani informal settlement, service delivery sustainability can be improved, the health hazards to which the residents are exposed can be reduced and the negative consequences of the sustainability-related risks can be mitigated.

This empirical study reveals that risk management is an effective tool that can be used to enhance the sustainability of the service delivery mechanism of the Witzenberg local municipality for them to effectively and efficiently execute their mandate of good governance.

Furthermore, although this is not the first study to investigate the interconnection between internal controls and health hazards, it is the first study to investigate these variables within the neglected Chris Hani informal settlement in the Witzenberg region of the Western Cape.

5.4.2 Managerial implications

In considering sustainability-related risks, the results of this empirical study strongly emphasize the development of sustainable good governance practices within the organisational space. This study indicates that the most significant sustainability-related risks arise from the municipality's daily operations and activities, processes and events happening in the Chris Hani informal settlement. For the municipality to attain service delivery sustainability, the sustainability and risk managers of the Witzenberg local municipality would need to prioritise the identification of sustainability-related risks in Chris Hani through risk identification tools and techniques and treat these risks appropriately.

This study enhances the understanding of the health hazards experienced by the Chris Hani residents arising from the lack of service delivery. Therefore, this creates an opportunity for the risk management department of Witzenberg local municipality to consider emerging risks that might otherwise be missed by their existing risk management tools. The results suggest that the economic and environmental aspect of sustainability may cause the Witzenberg municipality to experience higher budget constraints and human resource shortage due to the state of the Chris Hani informal settlement, such as the massive influx of people into Chris Hani, which places strain on infrastructure provision and daily operational repairs Chris Hani informal settlement. From the social aspect, if the Witzenberg local municipality does not properly manage its service delivery to key stakeholders such as the residents of Chris Hani, it is likely to be faced with bad publicity.

The results of the study indicate that if sustainability-related risks are proactively identified and monitored by the custodian, which is the Witzenberg local municipality, their risk management can make a significant contribution to the achievement of Section 24 of the Constitution.

South Africa (1996a, Section 24) provides that:

Everybody has the right (a) to an environment that is not harmful to their health or wellbeing; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that (i) prevent pollution and ecological degradation, (ii) promote conservation, and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

Ultimately, the management of Witzenberg local municipality will contribute to Section 24 by preventing pollution and degradation, promoting conservation and improving service delivery overall.

Lastly, the findings of this study highlight both tangible and intangible resources in improving risk management and service delivery within the Witzenberg local municipality. Therefore, this study concludes that local government needs to consider combining intangible and tangible resources to improve service delivery and risk management in the Chris Hani settlement.

5.4.3 Policy implications

This study could be important for the Technical and Housing and Internal Audit departments of Witzenberg local municipality. The results reveal that service delivery and effective risk management of the health hazards to which the residents of Chris Hani are exposed, are rooted in the use of intangible and tangible resources. This insight could assist the municipality in future when designing interventions to improve the wellbeing of the Chris Hani informal settlement community.

5.5 Study limitations

5.5.1 Delimitations

Mitchell and Jolley (2010:862) opine that delimitations are boundaries that a researcher imposes, within which the focus of the study is confined. The current study focused on contributing to the sustainability of livelihoods of the residents of the Chris Hani informal settlement employing risk management practices from the Witzenberg local municipality. It also focused on providing a framework with the potential to improve risk and sustainability management of informal settlements and help reduce the health hazards to which informal settlements are exposed. This study did not include other informal areas in Witzenberg, as the data collection was confined to the Chris Hani informal settlement in Tulbagh.

5.5.2 Limitations

A limitation is defined by Simon and Goes (2013:89) as a potential weakness that cannot reasonably be dismissed and if not stated, can influence the interpretation of the results in the study. Simon and Goes (2013:87) believe that limitations are beyond the control of a researcher, given the statistical model constraints, limited funding and or other factors. Simon and Goes (2013:89) further state that the researcher cannot always solve limitations and it affects virtually all research projects. An array of limitations similarly exists in this study despite the proposed contributions highlighted in the preceding section. The first limitation pertains to participants, followed by the time limit, then the sampling method, and lastly the geographic area.

5.5.2.1 Participants and geographical area

The research is constrained to the Chris Hani informal settlement of Tulbagh which is governed by the Witzenberg local municipality in the Boland region of Cape Winelands. Only the residents of the Chris Hani informal settlement and employees within the different departments of Witzenberg local municipality were selected for this study.

5.5.2.2 Time limit

Because of the time constraints and safety concerns of the researcher, the sample was limited to 210 residents and 16 municipal employees. Similar sample sizes, however, were successfully used in earlier studies, which provide some form of justification for using this sample size in this study. With more time, a larger sample size is recommended.

5.6 Suggestions for future research

The limitations noted in the current study pave the way for suggestions for further studies. This study only investigated the interconnection between internal controls and health hazards within the Chris Hani informal settlement. Future studies could investigate the interconnection between internal controls and health hazards of informal settlements in other municipal areas. This would determine the existence of common internal control gaps and environmental health hazards in informal settlements in other municipal areas.

Several gaps in research were identified from the literature review. In particular, the lack of observational studies on changes in service delivery in informal settlements. Future studies could investigate trends in the perceptions of informal settlement residents versus their educational levels.

The current study sampled 226 respondents. Future research could utilise a larger sample size for a survey of residents of informal settlements and personal interviews with departmental heads of local municipalities, to generate substantial data and to better generalise the findings. Another potential fruitful avenue for future research could be a comparative study between informal settlements in urban, peri-urban and farming areas. A larger and more diverse sample would deliver more meaningful data on the interconnection between internal controls and health hazards within informal settlements.

5.7 Concluding remarks

The high incidence of protests in informal settlements and the vulnerability of residents of these informal settlements have rendered internal controls and health hazards very relevant areas of study. Against this background, the research emanated from the view that the livelihoods of residents of informal settlements are adversely affected by the accumulation of risks, which stem from a lack of effective and efficient service delivery and poor corporate governance within local municipalities. Despite this, there is a paucity of research on informal settlements and particularly on the ability to mitigate risks. To fill this knowledge gap, the study investigated the interconnection between internal controls and health hazards within the Chris Hani informal settlement, in the Boland region of Witzenberg.

Urbanisation and migration to cities have brought about an increase in the number of informal settlements. Most informal settlements are established in ecologically sensitive areas and the illegal houses are erected outside of building regulations. Since informal settlements are

unplanned, residents are exposed to diverse risks. There are no policies relevant to improving the living conditions of residents in informal settlements.

Chris Hani residents are exposed to several hazards and risks from refuse and waste, fire, floods. Chris Hani informal settlement is associated with both natural and built environmental problems, some of which are caused by the geographic location of the settlement. Little has been done to mitigate these risks in the Chris Hani informal settlement and because the residents are poor, they focus more on trying to eke a living than on mitigating the risks to which they are exposed.

A political and vulnerability approach informed this study. The first departure is that the political ecology approach explained environmental problems arising from the interaction of the biophysical environment, humans, and political systems. Secondly, the vulnerability approach identified ways in which the residents of Chris Hani cope with risks. Thirdly, the relationship between human activity and environmental degradation reflects how people affect the natural and social environment. This in turn results in poor quality of life for residents of an informal settlement like Chris Hani. It is therefore imperative to understand the contributing factors or forces linking social change, environment, and development. These approaches are the result of human activity in the environment, which is a consequence of the hazards and makes people more vulnerable to risks.

The hazards and environmental risks in the Chris Hani informal settlement are attributable to various factors such as economic, social, physical, political and environmental. These factors need to be considered and addressed. Various strategies can be employed by households to reduce environmental risks. In addition, the Witzenberg municipality needs to have a better understanding of how to improve the resistance of the poor to health risks.

The research shows that households and the municipality have not done much to in the case of the Chris Hani informal settlement. The study noted that although the municipality does have some plans in place, they have not been implemented. The Witzenberg local municipality should become proactive and implement current policies to improve the quality of life of the Chris Hani residents.

More campaigns and workshops conducted by Witzenberg local municipality concerning the risks being experienced in Chris Hani will inform residents and help in risk reduction. The provision of infrastructure and basic services are crucial in reducing the exposure of the residents of Chris Hani to risk. Integrated development planning is required to control land use and to deliver basic services to the poor. Rehabilitation strategies must be carefully planned and the basic causes of risk should be eliminated.

Chris Hani informal settlement has its own dynamics that should be taken into account when considering its inherent health risks and hazards and the effects on residents. The Witzenberg

local municipality faces the challenge of the continued growth of Chris Hani informal settlement, which comes with urbanization. It is not a simple issue and beyond the scope of this dissertation although some aspects have been briefly mentioned.

This research set out to ascertain the relationship between the internal controls of the Witzenberg local municipality and health hazards within the Chris Hani informal settlement. The study has shown that poor internal controls and lack of proper service delivery by the Witzenberg local municipality have exposed residents to health risks, resulting in poor quality of life for residents of the Chris Hani informal settlement.

REFERENCES

- Abubakar, A, O Romice and A Salama (2019), "Slums and prosperity: a complex, dynamic pathway of intervention", *International Journal of Architectural Research* Vol 13, No 2, pages 314–330.
- Ackermann, C. (2016). Internal Audit Risk Management in Metropolitan Municipalities. [online] ResearchGate. Available at: https://www.researchgate.net/publication/309762857_Internal_Audit_Risk_Management_in_Metropolitan_Municipalities [Accessed 22 Mar. 2022].
- Aikins, K. 2013. Government internal audits: The determinants of quality supervisory review of audit documentation. *International Journal of Public Administration*, 36(10):673-685
- Akala, B.M. 2018. Challenging gender equality in South African transformation policies: A case of the White Paper: A programme for the transformation of higher education. *South African Journal of Higher Education*, 8(32):226–248.
- Akvo.org. (2019). How to choose your sampling strategy to guarantee relevant results. [online] Available at: <https://datajourney.akvo.org/blog/how-to-choose-your-sampling-strategy-to-guarantee-relevant-results> [Accessed 22 Mar. 2022].
- Akwasi, T. 2020. *8 Batho Pele principles, implementation and impact to the community*. <https://briefly.co.za/32252-8-batho-pele-principles-implementation-impact-community.html> [22 December 2020].
- Allen, K. 2014. *Poor quality education trapping children in poverty*. Save the children. <https://www.savethechildren.org.za/article/poor-quality-education-trappingchildren-poverty> [16 August 2021].
- Andrew, T. 2014. *Creating a learning environment that promotes respect*. <http://www.suite101.com/article> [16 August 2021].
- Asare, T. 2009. Internal auditing in the public sector. *International Journal on Governmental Financial Management*, 9(1):15–30. <http://www.icgfm.org/journal/2009/2009-01.pdf> [28 October 2019].
- Bailey, C.A. 2007. *A guide to qualitative field research*. 2nd ed. London: Pine Forge Press.
- Benidell, M.L. 2003. The whole is greater than the sum of its parts: Cumulative Risk of indoor air pollution and urban vulnerability in Cato Manor. Unpublished Masters thesis. University of Natal, Durban.
- Bergman, M.M. (ed.). 2008. *Advances in mixed methods research: Theories and applications*. London: SAGE.
- Bernard, H.R. 2002. *Research methods in anthropology: Qualitative and quantitative approaches*. 3rd ed. Walnut Creek, CA: Alta Mira Press.
- Bhatia, M. (2018). Your Guide to Qualitative and Quantitative Data Analysis Methods - Atlan | Humans of Data. [online] Atlan | Humans of Data. Available at: <https://humansofdata.atlan.com/2018/09/qualitative-quantitative-data-analysis-methods/> [Accessed 22 Mar. 2022].

- Bloomfield, J., & Fisher, M.J. 2019. Quantitative research design. *Journal of the Australasian Rehabilitation Nurses Association*, 22(2):27–30.
- Brinkerhoff, D.W. 2004. Accountability and health systems: Overview, framework, and strategies. *Health Policy and Planning*, 19(6):371-379.
- Bryant, R.L. 1998. Power, knowledge and political ecology in the third world: A review. *Progress in Physical Geography: Earth and Environment*, 22(1):79–94.
- Bryman, A. & Bell, E. 2007. *Business research methods*. 2nd ed. Oxford: Oxford University Press.
- Bryman, A. and Bell, E. (2015) *Business Research Methods*. Oxford University Press, Oxford.
- Brynard, P.A. & Hanekom, S.X. 2006. *Introduction to research in management-related fields*. Pretoria: Van Schaik.
- Burns, R.B. & Burns, R.A. 2008. *Business research methods and statistics using SPSS*. Los Angeles, CA: SAGE. ISBN 978-1-4129-4529-5.
- Burns, R.P. & Burns, R. 2008. *Business research methods and statistics using SPSS*. London: SAGE. <https://faisalgrewal.files.wordpress.com/2016/11/business-research-methods-and-statistics-using-spss-20081.pdf> [19 May 2020].
- Burton, D. & Barlett, S. 2005. *Practitioner research for educators*. London: Paul Chapman Publishing. <https://dx.doi.org/10.4135/9780857024527>
- Busetto, L., Wick, W. and Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurological Research and Practice*, [online] 2(1). Available at: <https://neurolrespract.biomedcentral.com/articles/10.1186/s42466-020-00059-z> [Accessed 22 Mar. 2022].
- Cascarino, R. 2015. *Internal auditing: an integrated approach*. 3rd ed. Cape Town: Juta.
- Christophe Muanda, Rainer Haldenwang and Goldin, J. (2020). Factors and impacts of informal settlements residents' sanitation practices on access and sustainability... [online] ResearchGate. Available at: https://www.researchgate.net/publication/341037896_Factors_and_impacts_of_informal_settlements_residents_sanitation_practices_on_access_and_sustainability_of_sanitation_services_in_the_policy_context_of_Free_Basic_Sanitation [Accessed 22 Mar. 2022].
- Churchill, G.A. & Iacobucci, D. 2005. *Marketing research: Methodological foundations*. 8th ed. Mason, OH: Thomson.
- Coetzee, G.P., du Bruyn, R., Fourie, H. & Plant, K. 2010. *Internal auditing: An introduction*. 2nd ed. Durban: LexisNexis.
- Coghlan, D. & Brydon-Miller, M. 2014. *The SAGE Encyclopedia of Action Research* (Two volume set). London: SAGE. <https://uk.sagepub.com/en-gb/eur/the-sage-encyclopedia-of-action-research/book234014> [3 August 2020].
- Creswell, J.W. & Plano Clark, V.L. 2011. *Designing and conducting mixed methods Research*. 2nd ed. Los Angeles, CA: SAGE.

- Creswell, J.W. 2009. *Research design: Qualitative, quantitative, and mixed methods approaches*. 3rd ed. Los Angeles, CA: SAGE.
- De Vos, A.S. (ed.). 2002. *Research at grass roots. For the social sciences and human service professions*. 2nd ed. Pretoria: Van Schaik
- Dear South Africa. (2022). Participative Democracy, have your say | dear South Africa. [online] Available at: <https://dearsafrica.org/pdps/> [Accessed 22 Mar. 2022].
- Descombe, M. 2010. *The Good Research Guide: For small-scale social research projects*. 4th ed. Maidenhead, UK: McGraw Hill.
- Dinga, R.G., Govender, R. & Jalavu, Z. 2015. Can legislation inhibit performance excellence: Legislative requirements supported by best practice principles to improve governance. *IA Adviser*, June: 39–41.
- Disaster Mitigation for Sustainable Livelihoods Programme (DMSLP). 2008. *Weathering the storm: Participatory risks assessment for informal settlements*. Cape Town: Periperi Publications. ISBN: 0-978-0-620-41301-5.
- dpicampaigns (2020). Take Action for the Sustainable Development Goals - United Nations Sustainable Development. [online] United Nations Sustainable Development. Available at: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/> [Accessed 22 Mar. 2022].
- Enofe, A.O., Mgbame, C.J., Osa-Erhabor, V.E. & Ehiorobo, A.J. 2013. The role of internal audit in effective management in public sector. *Research Journal of Finance and Accounting*, 4(6):162-168.
- Etikan, I. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, [online] 5(1), p.1. Available at: <https://article.sciencepublishinggroup.com/html/10.11648.j.ajtas.20160501.11.html#paper-references> [Accessed 22 Mar. 2022].
- Few, R. 2003. Flooding, vulnerability and coping strategies: Local responses to a global threat. *Progress in Development Studies*, 3:43–58. <https://doi.org/10.1191/1464993403ps049ra>
- Fleming, S. & McNamee, M. 2007. The ethics of corporate governance in public sector organizations. *Public Management Review*, 7(1):135–144.
- Ford, J., Pearce, T., Smit, B., Wandel, J., Allurut, M., Shappa, K., Ittusujurat, H. & Qrunnut, K. 2007. Reducing vulnerability to climate change in the Arctic: The case of Nunavut, Canada. *Arctic*, 60(2):150–166.
- Fox, S. 2014. The political economy of slums: Theory and evidence from sub-Saharan Africa. *World Development*, 54:191–203.
- Freeman, R.E. 1983. Strategic management: A stakeholder approach. *Advances in Strategic Management*, 1:31–60.
- Freeman, R.E., Martin, K. & Parmar, B. 2007. Stakeholder capitalism. *Journal of Business Ethics*, 74(4):303–314.

- Gaffoor, S. and Cloete, F. (2010). Knowledge management in local government: The case of Stellenbosch Municipality. *SA Journal of Information Management*, [online] 12(1). Available at: <https://sajim.co.za/index.php/sajim/article/view/422> [Accessed 22 Mar. 2022].
- GeoPoll. (2020). Probability and Non-Probability Samples - GeoPoll. [online] Available at: <https://www.geopoll.com/blog/probability-and-non-probability-samples/> [Accessed 22 Mar. 2022].
- Gilbert, A. 2010. Marginalization in urban China. In *Neoliberalism and the urban poor: A view from Latin America*: 29–56. DOI: 10.1057/9780230299122_3
- Glaeser, E., & Sims, H. (2015). Contagion, crime, and congestion: overcoming the downsides of density. IGC Growth Brief.
- Good Governance Learning Network (GGLN). 2011. *Recognising community dissatisfaction: The state of local governance in South Africa*. Cape Town: Good Governance Learning Network.
- Good Governance Learning Network (GGLN). 2011. *Recognising community dissatisfaction: The State of local Governance in South Africa*. Cape Town: Good Governance Learning Network.
- Gravetter, F.J. & Wallnau, L.B. 2013. *Essentials of statistics for the behavioural sciences*. 8th ed. Belmont, CA: Wadsworth Cengage Learning.
- Gray, C. & Bilsborrow, R. 2013. Environmental influences on human migration in rural Ecuador. *Demography*, 50(4):1217–1241.
- Habitat, U. N. (2015). Informal settlements. HABITAT III issue papers, 22.
- Housing Development Agency (HDA). 2013. *South Africa: Informal settlements status*. http://www.thehda.co.za/uploads/files/HDA_Informal_settlements_status_South_Africa.pdf [15 June 2020].
- Hrasky, S. 2011. Carbon footprints and legitimation strategies: Symbolism or action? *Accounting, Auditing & Accountability Journal*, 25:174–198. <https://doi.org/10.1108/09513571211191798>
- Huchzemeyer, M. 2003, The legacy of control? The capital subsidy for housing and informal settlement in South Africa. *International Journal of Urban and Regional Planners*, 27:594–606.
- Human Rights Commission Investigative Hearing Report Access to Housing, Local Governance and Service Delivery. (2015). [online] Available at: <https://www.sahrc.org.za/home/21/files/Access%20to%20Housing%202015.pdf> [Accessed 22 Mar. 2022].
- Human Sciences Research Council (HSRC). 2018. *HSRC Review*. <http://www.hsrc.ac.za/en/review/hsrc-review-dec-2018> [2 April. 2021].
- Hunter, M. & Posel, D. 2012. Here to work: the socioeconomic characteristics of informal dwellers in post-apartheid South Africa. *Environment and Urbanization*, 24(1):285–304. doi: 10.1177/0956247811433537.

- Hurskainen, P. 2004. The informal settlements of Voi. In Pellikka, P., Ylhäisi, J. & Clark, B. (eds.). *Taita Hills and Kenya, 2004 – seminar, reports and journal of a field excursion to Kenya*. Expedition reports of the Department of Geography, University of Helsinki: 64-78. Helsinki 2004. ISBN 952-10-2077-6.
- Institute of Directors South Africa (IDSA). 2016. *The King IV Report on Corporate Governance for South Africa*. <http://www.iodsa.co.za/?page=AboutKingIV> [20 March 2021].
- Institute of Internal Auditors (IIA). 2016. *Standards and guidance: International professional practices framework*. Lake Mary, FL: Institute of Internal Auditors [https://na.theiia.org/standards-guidance/Public%20Documents/IPPF-Standards 2017.pdf](https://na.theiia.org/standards-guidance/Public%20Documents/IPPF-Standards%202017.pdf) [12 September 2019].
- Jooste, T. & Mathibela, N. 2020. *Improving the lives of women in informal settlements starts with fixing basic services*. <https://www.internationalbudget.org/wp-content/uploads/asivikelane-brief-5.pdf> [2 June 2021].
- Kirkpatrick, G. 2009. The corporate governance lessons from the financial crisis. *Financial Market Trends*, 2009(1):1–30. <https://www.oecd.org/finance/financial-markets/42229620.pdf> [28 October 2019].
- Kjellstrom, T. & Mercado, S. 2008. Towards action on social determinants for health equity in urban settings. *Environment and Urbanization*, 20(2):551–574.
- Kothari, C.R. 2009. *Research methodology: Methods and techniques*. New Delhi: New Age International.
- KPMG International. 2013. *Committee of Sponsoring Organizations of the Treadway Commission (COSO): Internal Control – Integrated Framework (2013)*. <https://assets.kpmg/content/dam/kpmg/pdf/2016/05/2750-New-COSO-2013-Framework-WHITEPAPER-V4.pdf> [3 May 2020].
- Krejcie, R.V. & Morgan, D.W. 1970. Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3):607-610.
- Kretzmann, S. (2021). GroundUp: Road to local elections: Witzenberg in Cape Winelands a “model municipality” tarnished by poor waste management and unemployment. [online] Daily Maverick. Available at: <https://www.dailymaverick.co.za/article/2021-06-30-witzenberg-in-cape-winelands-a-model-municipality-tarnished-by-poor-waste-management-and-unemployment/> [Accessed 22 Mar. 2022].
- Lall S, Henderson J, Venables A (2017), *Africa’s Cities: Opening Doors to the World*, Washington, DC, World Bank, 158 pages. [Crossref] Google Scholar
- Leedy, P.D. & Ormrod, J.E. 2010. *Practical research: Planning and design*. Upper Saddle River, NJ: Merrill. ISBN: 0137152426 9780137152421
- LOCAL GOVERNMENT. (n.d.). [online] Available at: <https://www.justice.gov.za/legislation/constitution/SACConstitution-web-eng-07.pdf>.
- Lombard, M. 2014 Constructing ordinary places: Place-making in urban informal settlements in Mexico. *Progress in Planning*, 94:1–53 <https://doi.org/10.1016/j.progress.2013.05.003>

- Matsie, R. 2019. *Women, power and policymaking*.
https://media.africaportal.org/documents/Matsie__Gender_lens_on_informal_settlement_upgrading.pdf [2 June 2021].
- Mitchell, M.L. & Jolley, J.M. 2010. *Research design explained: Instructor's edition*. 7th ed. Boston, MA: Wadsworth/Cengage Learning.
- Monteduro, M., Buongiorno, P., Di Benedetto, S. & Alessandro, I. 2015. *Law and agroecology: A transdisciplinary dialogue*. Berlin: Springer. DOI:10.1007/978-3-662-46617-9
- Municipal Money. 2020. *Witzenberg financial performance*.
<https://municipalmoney.gov.za/profiles/municipality-WC022-witzenberg/#financial-performance> [13 February 2021].
- Mutisya, M., Ngware, M.W., Kabiru, C.W. & Kandala, N.B. 2016. The effect of education on household food security in two informal urban settlements in Kenya: A longitudinal analysis. *Food Secure*, 8:743–756.
- Myers, G. 2011. *African cities: Alternative visions of urban theory and practice*. London: Zed Books. http://www.stellenboschheritage.co.za/wp-content/uploads/Garth-A.-Myers-African-Cities_-Alternative-Visions-of-Urban-Theory-and-Practice-Zed-Books-2011.pdf [19 August 2019].
- Nleya, M. 2011. Linking service delivery and protests in South Africa: An exploration of evidence from Khayelitsha. *Africanus*, 41(1):3–13.
- Notsi, P.Y. 2012. Financial reporting as a tool for promoting accountability at Metsimaholo Local Municipality. Unpublished Masters thesis. Potchefstroom: University of the North West, <https://repository.nwu.ac.za/handle/10394/10155> [10 December 2019].
- Nunnally, J. 1978. *Psychometric theory*. New York: McGraw-Hill. DOI: 10.1007/978-1-4684-2490-4_4
- Nyar, A. & Wray, C. 2012. Understanding protest action: Some data collection challenges for South Africa. *Transformation*, 80:22–43.
- Oldewage-Theron, W.H. & Slabbert, T.J.C. 2008. Impact of food and nutrition interventions on poverty in an informal settlement in the Vaal Region of South Africa. *Proceedings of the Nutrition Society*, 67:91–97.
- Oliver, C. 1997. Sustainable competitive advantage: Combining institutional and resource-based views. *Strategic Management Journal*, 18:697–713.
- Patton, M.Q. 2002. *Qualitative research and evaluation methods*. 3rd ed. Thousand Oaks, CA: SAGE.
- Pawar, M. 2004. *Data collecting methods and experiences: A guide for social researchers*. New Delhi: New Dawn Press Group.
- Pillai, N.R. 2010. Inventory management performance in machine tool SMEs: What factors do influence them. *Journal of industrial Engineering*, 3(3):542-560.
- Pitso, S.M. 2008. Principles of internal auditing. Unpublished Masters thesis. Ndola, Zambia: Queensgate College of Health Sciences.

- Polit D.F. & Hungler, B.P. 1995. *Nursing research: Principles and methods*. 5th ed. Philadelphia, PA: J.B. Lippincott.
- Politicsweb.co.za. 2009. *Jacob Zuma's State of the Nation address* <https://www.politicsweb.co.za/news-and-analysis/jacob-zumas-state-of-the-nation-address> [2 July 2020].
- Ponterotto, J.G. 2005. Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science. *Journal of Counseling Psychology*, 52(2), 126–136. <https://doi.org/10.1037/0022-0167.52.2.126>
- Posel, D. & Casale, D. 2003, What has been happening to internal labour migration in South Africa, 1993–1999? *The South African Journal of Economics*, 71(3):455–479.
- Ratsela, T. 2015. *Audit quality: A driver for a high-performing public sector*. IA Advisor, June: 15-19.
- Rule, P. & John, V. 2011. *Your guide to case study research*. Pretoria: van Schaik. **ISBN: 9780627027895**
- Sapsford, R. & Jupp, V. 2006. *Data collection and analysis*. 2nd ed. New Delhi: SAGE.
- Scott, W.R. 2001. *Institutions and organizations*. 2nd ed. Thousand Oaks, CA: SAGE.
- Sexwale, T (2013) *Gigantic effort needed to de-racialise residential space*. Presented at the Department of Human Settlements budget speech, National Assembly, Parliament. Available at: http://www.eaab.org.za/article/budget_vote_speech_gigantic_effort_needed_to_de_racialise_residential_spaces_tokyo_sexwale_23_may_2013_ [17 April 2020].
- Sileyew, K. J. , 2019, 'Research Design and Methodology', in E. Abu-Taieh, A. E. Mouatasim, I. H. A. Hadid (eds.), *Cyberspace*, IntechOpen, London. 10.5772/intechopen.85731.
- Simiyu, S., Cairncross, S. and Swilling, M. (2018). Understanding Living Conditions and Deprivation in Informal Settlements of Kisumu, Kenya. *Urban Forum*, [online] 30(2), pp.223–241. Available at: <https://link.springer.com/article/10.1007/s12132-018-9346-3#citeas> [Accessed 22 Mar. 2022].
- Simon, M.K. & Goes, J. 2013. *Dissertation and scholarly research: Recipes for success*. Seattle, WA: Dissertations Success LLC.
- Smith, D. 1996. Informal settlements, legislation and planning in South Africa. Unpublished Masters thesis. University of Natal, Pietermaritzburg. <https://researchspace.ukzn.ac.za/handle/10413/16541> [19 September 2020].
- Sobel, P.J. & Reding, K.F. 2012. *Enterprise risk management: Achieving and sustaining success*. Lake Mary, FL: Institute of Internal Auditors Research Foundation.
- Soh, D.S. & Martinov-Bennie, N. 2011. The internal audit function: Perceptions of internal audit roles, effectiveness and evaluation. *Managerial Auditing Journal*, 26(7):605–622.
- South Africa Gateway. 2021. *The 11 languages of South Africa*. <https://southafrica-info.com/arts-culture/11-languages-south-africa/> [12 June 2021].

- South African Government. 2013. *National Environmental Health Policy*. <https://www.gov.za/documents/national-environment-health-policy> [26 May 2020].
- South African Government. 2021. *Local government*. <https://www.gov.za/about-government/government-system/local-government> [2 April 2020].
- South African Medical Research Council (SAMRC). 2016. *Research report. The Health, Environment & Development (HEAD) study*. <https://www.samrc.ac.za/sites/default/files/files/2016-07-08/whoheadstudy.pdf> [21 May 2020].
- South African National Treasury. 2009. *Internal Audit Framework*. 2nd ed. Pretoria: National Treasury. <http://www.treasury.gov.za/publications/other/Treasury%20Internal%20Audit%20Framework%20Revised%202009.pdf> [12 December 2019].
- Spencer-Pickett, K.H. 2011. *The essential guide to internal auditing*. 2nd ed. Hoboken, NJ: Wiley.
- Srinivas, H. 2015. *Defining squatter settlements*. <https://www.gdrc.org/uem/squatters/define-squatter.html> [22 August 2020].
- Statista. 2019. *South Africa: Population, by ethnic groups*. <https://www.statista.com/statistics/1116076/total-population-of-south-africa-by-population-group/> [2 June 2020].
- Statistics South Africa (StatsSA). 2011. *The South African National Census of 2011*. http://www.statssa.gov.za/?page_id=3839 [11 May 2020].
- Statistics South Africa (StatsSA). 2015. Mid-year population estimates. 2015 Census. <https://www.statssa.gov.za/publications/P0302/P03022015.pdf> [21 May 2020].
- Struwig, F.W. & Stead, G.B. 2001. *Planning, designing and reporting research*. Cape Town: Pearson Education. <https://www.worldcat.org/title/planning-designing-and-reporting-research/oclc/51067852> [22 July 2020].
- Teddlie, C. & Tashakkori, A. 2009. *The foundations of mixed methods research: Integrating quantitative and qualitative techniques in the social and behavioral sciences*. Thousand Oaks, CA: SAGE.
- Turner, J.F.C. 1969. Uncontrolled urban settlement: Problems and policies. In Breese, G. (ed.). *The city in newly developing countries: readings on urbanism and urbanization*. Englewood Cliffs, NJ: Prentice Hall: 507–534.
- Turok, I (2016), "Getting urbanization to work in Africa: the role of the urban land-infrastructure-finance nexus", *Area Development and Policy* Vol 1, No 1, pages 30–47
- Turok, I. & McGranahan, G. 2013. Urbanization and economic growth: the arguments and evidence for Africa and Asia. *Environment and Urbanization*, 25(2):465–482.
- Turok, I. and McGranahan, G. (2013). Urbanization and economic growth: the arguments and evidence for Africa and Asia. *Environment and Urbanization*, [online] 25(2), pp.465–482. Available at: <https://journals.sagepub.com/doi/full/10.1177/0956247813490908> [Accessed 22 Mar. 2022].

Turok, I., Budlender, J. & Visagie, J. 2017. *The role of informal urban settlements in upward mobility*. Working Paper 201701, University of Cape Town, Development Policy Research Unit. <https://ideas.repec.org/p/ctw/wpaper/201701.html> [12 September 2020].

Turok, I., Visagie, J. and Swartz, S. (2021). What lies behind social unrest in South Africa, and what might be done about it. [online] The Conversation. Available at: <https://theconversation.com/what-lies-behind-social-unrest-in-south-africa-and-what-might-be-done-about-it-166130> [Accessed 22 Mar. 2022].

Ugandan Ministry of Water and Environment (UMWE). (2018). *Administrative guidelines on the internal control framework and internal audit standards: Integrated Internal Controls System (COSO)*. <https://academicjournals.org/journal/AJBM/article-full-text-pdf/9F42A9B62060> [14 January 2020].

Ulf Henning Richter and Dow, K. (2017). Stakeholder theory: A deliberative perspective. [online] ResearchGate. Available at: https://www.researchgate.net/publication/319470535_Stakeholder_theory_A_deliberative_perspective [Accessed 22 Mar. 2022].

UN-Habitat. (2016). *SDG Goal 11: Monitoring Framework, a guide to assist national and local governments*. Nairobi: UN-Habitat. <https://unhabitat.org/sdg-goal-11-monitoring-framework> [17 August 2020].

UN-Habitat. 2003. *The challenge of slums: World report on human settlements*. Nairobi: UN-Habitat. <https://unhabitat.org/the-challenge-of-slums-global-report-on-human-settlements-2003#:~:text=The%20Challenge%20of%20Slums%20presents,and%20economic%20characteristics%20and%20dynamics> [17 May 2019].

UN-Habitat. 2012. *World urbanization prospects*. Nairobi: United Nations

United Nations Population Fund (UNFPA). 2020. *How girls in informal settlements are coping with menstrual health during South Africa's COVID-19 lockdown*. <https://esaro.unfpa.org/en/news/how-girls-informal-settlements-are-coping-menstrual-health-during-south-africas-covid-19> [12 September 2020].

United Nations. Department of Economic and Social Affairs. 2014. *World urbanization prospects*. <https://population.un.org/wup/publications/files/wup2014-report.pdf> [13 March 2020].

Visagie, J. and Turok, I. (2020). Getting urban density to work in informal settlements in Africa. *Environment and Urbanization*, [online] 32(2), pp.351–370. Available at: <https://journals.sagepub.com/doi/10.1177/0956247820907808> [Accessed 22 Mar. 2022].

Visser, C.B. 2011. *Public Financial Management: A study guide for MPGA 822*. Potchefstroom: North-West University.

Visser, R. 2014. The importance of institution governance for municipal service delivery. *Official Journal of the Institute of Financial Officers*, 15(2):18–21.

Vivier, E. & Wentzel, M. 2013. Community participation and service delivery: Perceptions among residents in Cape Town. *Journal of Public Administration*, 48:239–250.

Von Eck, C. 2013. Internal audit is a pillar of governance. In Plaatjies, D. (ed.). *Protecting the inheritance: Governance and public accountability in democratic South Africa*. Auckland Park: Jacana Media.

Wasserman, H., Chuma, W. and Bosch, T. (2018). Print media coverage of service delivery protests in South Africa: A content analysis. *African Studies*, 77(1), pp.145–156.

Wazimap. 2019. *Witzenberg Ward 11. 2011 Census*. <https://wazimap.co.za/profiles/ward-10202011-witzenberg-ward-11-10202011/> [22 October 2020].

Weimann A, Oni T. A Systematised Review of the Health Impact of Urban Informal Settlements and Implications for Upgrading Interventions in South Africa, a Rapidly Urbanising Middle-Income Country. *Int J Environ Res Public Health*. 2019;16(19):3608. Published 2019 Sep 26. doi:10.3390/ijerph16193608

Wellman, J.C., Kruger, F., Mitchell, B. & Huysamen, G.K. 2005. *Research methodology*. Cape Town: Oxford University Press.

Western Cape Government Provincial Treasury Socio-economic Profile Witzenberg Municipality 2015 Working Paper. (n.d.). [online] Available at: https://www.westerncape.gov.za/assets/departments/treasury/Documents/Socio-economic-profiles/2016/municipality/Cape-Winelands-District/wc022_witzenberg_2015_sep-lg_profile.pdf.

Western Cape Government. 2017. *Witzenberg Local Municipality overview*. https://www.westerncape.gov.za/your_gov/6 [12 May 2020].

World Bank. 2007. *General Household Survey: South Africa Community Survey, 2007*. <https://microdata.worldbank.org/index.php/catalog/924> [11 May 2020].

World Bank. 2008. *World Development Report 2009: Reshaping economic geography*. Washington DC: The World Bank and Oxford University Press. <https://doi.org/10.1596/978-0-8213-7607-2> <https://briefly.co.za/32252-8-batho-pele-principles-implementation-impact-community.html>

Worldcat.org. (2015). *Business research methods* (Book, 2015) [WorldCat.org]. [online] Available at: <https://www.worldcat.org/title/business-research-methods/oclc/907220736> [Accessed 22 Mar. 2022].

York, N. (2015). HABITAT III ISSUE PAPERS 22 -INFORMAL SETTLEMENTS. [online] Available at: http://uploads.habitat3.org/hb3/Habitat-III-Issue-Paper-22_Informal-Settlements-2.0.pdf.

Zerbo, A., Delgado, R.C. and González, P.A. (2020). Vulnerability and everyday health risks of urban informal settlements in Sub-Saharan Africa. *Global Health Journal*, [online] 4(2), pp.46–50. Available at: <https://www.sciencedirect.com/science/article/pii/S241464472030021X> [Accessed 22 Mar. 2022].

Ziblim, A., Gyorgy, M., Regional, S. and Manager, A. (2013). *The Dynamics of Informal Settlements Upgrading in South Africa: Legislative and Policy Context, Problems, Tensions, and Contradictions A Study Commissioned by Habitat for Humanity International/EMEA Office (Bratislava, Slovakia)*. [online] Available at:

<https://cps.ceu.edu/sites/cps.ceu.edu/files/attachment/basicpage/143/slum-upgrading-policies-south-africa.pdf>.

LEGISLATION

South Africa. 1993a. *Local Government Transition Act 209 of 1993*.

<https://www.gov.za/documents/organised-local-government-act>

South Africa. 1993b. *Tourism Act 72 of 1993*.

<https://www.tourism.gov.za/AboutNDT/Publications/Tourism%20Act%2072%20of%201993.pdf>

South Africa. 1994. *Reconstruction and Development Programme (RDP)*. 1994.

<https://www.gov.za/sites/default/files/governmentgazetteid16085.pdf>

South Africa. 1995. *Development Facilitation Act 67 of 1995*.

<http://www.nwpg.gov.za/DDLG&TA/acts/Development%20Facilitation%20Act.pdf>

South Africa. 1996a. *Constitution of the Republic of South Africa [No. 108 of 1996]*

<https://www.gov.za/sites/default/files/images/a108-96.pdf>

South Africa. 1996b. *Growth, Employment and Redistribution Strategy (GEAR)*. 1996.

<https://www.gov.za/documents/growth-employment-and-redistribution-macroeconomic-strategy-south-africa-gear>

South Africa. 1996c. *Local Government Transition Amended Act 97 of 1996*.

http://www.saflii.org/za/legis/num_act/lgtasaa1996466/

South Africa. 1997a. *Housing Act 107 of 1997*. <https://www.gov.za/documents/housing-act>

South Africa. 1997b. *Organized Local Government Act 52 of 1997*.

<https://www.gov.za/documents/organised-local-government-act>

South Africa. 1998a. *Local Government: Municipal Demarcation Act 27 of 1998*.

<https://www.gov.za/documents/local-government-municipal-demarcation-act>

South Africa. 1998b. *Local Government: Municipal Structures Act 117 of 1998*.

<https://www.gov.za/documents/local-government-municipal-structures-act>

South Africa. 1998c. *National Environmental Management Act 107 of 1998*.

<https://www.gov.za/documents/national-environmental-management-act>

South Africa. 1998d. *National Water Act 36 of 1998*. <https://www.gov.za/documents/national-water-act>

South Africa. 1998e. *White Paper on Local Government of 9 March 1998*.

https://www.cogta.gov.za/cgta_2016/wp-content/uploads/2016/06/whitepaper-on-local-gov.pdf

South Africa. 2000a. *Local Government: Municipal Systems Act 32 of 2000*.

<https://www.gov.za/documents/local-government-municipal-systems-act>

South Africa. 2000b. *National Land and Transportation Transition Act 22 of 2000*.
http://www.saflii.org/za/legis/num_act/nltta2000387.pdf

South Africa. 2002. *Disaster Management Act 52 of 2002*.
https://www.cogta.gov.za/cgta_2016/wp-content/uploads/2016/06/DISASTER-MANAGEMENT-ACT.pdf

South Africa. 2003. *Local Government: Municipal Finance Management Act 56 of 2003*.
<https://www.gov.za/documents/local-government-municipal-finance-management-act-0>

South Africa. 2017. *White Paper on National Civil Aviation Policy White Paper (2017)*.
https://www.gov.za/sites/default/files/gcis_document/201705/40847gen401.pdf

South Africa. 2020. *Division of Revenue Act (Act 4 of 2020)*.
<http://www.treasury.gov.za/legislation/acts/2020/Division%20of%20Revenue%20Act%204%202020.pdf>

APPENDIX A: CPUT ETHICAL CLEARANCE



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


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

At a meeting of the Faculty's Research Ethics Committee on **30 April 2019**, Ethics **Approval** was granted to **Thembela Nama (203023501)** for research activities of **M Tech: Internal Auditing** at Cape Peninsula University of Technology.

Title of dissertation/thesis/project:	INVESTIGATING THE INTERCONNECTION BETWEEN INTERNAL CONTROLS AND HEALTH HAZARDS IN THE CHRIS HANI INFORMAL SETTLEMENT, WITZENBERG BOLAND REGION. Lead Researcher/Supervisor: L Gwaka /Prof J Dubihlela
---------------------------------------	---

Comments:

Decision: **Approved**

 <hr/> Signed: Chairperson: Research Ethics Committee	3 May 2019 <hr/> Date
---	---------------------------------

Clearance Certificate No | 2019FBREC637

APPENDIX B: QUESTIONNAIRE 1 – CHRIS HANI RESIDENTS

Questionnaire Survey

Investigating the interconnection between internal controls and health hazards in the Chris Hani Informal settlement, Witzenberg Boland Region.

Thank you for your willingness to participate in this study. Your participation in this study is voluntary, all your feedback will be treated with the strictest confidence, your identity and dignity will be carefully protected and not be disclosed at any stage during the analysis. The study is conducted by myself (with permission from the municipality). This is part of my academic study and summary of all the findings will be presented to the Witzenberg local municipality upon completion of the study. I sincerely hope this study makes a positive difference to the life of each and every person who fills in a questionnaire.

A. RESPONDENTS BACKGROUND

1. Gender

Male	1
Female	2

2. Age

≤20	21-30	31-40	41-50	51+
1	2	3	4	5

3. Marital Status

Married	Single	Divorced	Widowed	Other
1	2	3	4	5

4. Home language

Afrikaans	English	Xhosa	Zulu	Sotho	Other
1	2	3	4	5	6

5. Highest Level of Education

No schooling	Primary	Secondary	Tertiary
1	2	3	4

6. How long have you been living in this area?

Years	Code
1-3	1
4-6	2
7-10	3
10+	4

7. Have you experienced changes pertaining to the level of service delivery over the years living in the informal settlement?

Yes	No
1	2

8. What are the changes that you have experienced over the years by living in Chris Hani Informal settlement pertaining to service delivery?

9. Are you the registered owner of residence?

Yes	No
1	2

10. Employment Status

Unemployed	Employed	Self employed	Other
1	2	3	4

11. If employed, what is your main occupation?

B. THE LIVING CONDITIONS OF PEOPLE IN THE CHRIS HANI INFORMAL SETTLEMENT (Current state of affairs)

12. How do you find living in this informal settlement in terms of service delivery?

Very Bad	Bad	Satisfactory	Good	Very Good
1	2	3	4	5

13. Explain in detail the living conditions?

14. Why did you come and settle in this area?

15. Are there any problems you are experiencing on living in this informal settlement?

Yes	No
1	2

16. If “yes”, please explain

17. Do you have access to water, sanitation and electricity in the area? Explain?

Basic Services	Yes	No
Water	1	2
Sanitation	1	2
Electricity	1	2

18. How often are awareness campaigns done on healthy living in your area?

Awareness Campaign	Once a year	Three times a year	More than 3 times
Cleaning Campaign	1	2	3
Clean Water Campaign	1	2	3
Healthy Living Campaign	1	2	3

19. How useful do you find the campaigns to be?

20. What measures have you taken to alert the municipality about the dangers that might be caused by these environmental risks?

21. Have you been part of any plans to upgrade the level of service delivery this informal settlement through the following channels?

Mode of participation	Yes	No
Municipal Public participation meetings	1	2
Ward meetings	1	2
Municipal Budget speeches	1	2
Community Local meetings	1	2

22. What type of environmental risks exist in your area?

Environmental Risk	Yes	No	Code
Shack Fires			1
Disease (Waste disposal)			2
Other Natural disasters			3
Floods			4
Veldt Fires			5
Others/Specify			6

23. What type of environmental risk have you experienced since you started to live in this area?

24. What do you think are the causes of those environmental risks?

25. What is the impact of these risks at a household level?

26. To what extent do these risks occur?

More likely	Likely	Less Likely
1	2	3

27. Who do you think should be responsible for the mitigation of the environmental risks in your area?

28. In what way do you respond to risks that you have experienced in your area?

29. What can be done to avoid those risks from accumulating?

30. How can planning interventions improve or reduce environmental risks in informal settlements?

31. What changes would make your area safer?

C. Community Perception on corporate governance of the Municipality

32. What is your perception on what causes poor service delivery?

33. With regards to the budget are there consultative meetings held with the community from the Witzenberg Municipality?

34. Do you perceive the meetings of the municipality to be based on merit?

35. What do you think about the affairs of the Witzenberg Local Municipality?

36. What is your perception on corporate governance of the Witzenberg Local Municipality?

Thank you for your cooperation

APPENDIX C: QUESTIONNAIRE 2 – WITZENBERG MUNICIPAL OFFICERS

Investigating the interconnection between internal controls and health hazards in the Chris Hani Informal Settlement, Witzenberg Boland Region.

Thank you for your willingness to participate in this study. Your participation in this study is voluntary, all your feedback will be treated with the strictest confidence, your identity and dignity will be carefully protected and not be disclosed at any stage during the analysis. The study is conducted by myself (with permission from the municipality). This is part of my academic study and summary of all the findings will be presented to the Witzenberg local municipality upon completion of the study. I sincerely hope this study makes a positive difference to the life of each and every person who fills in a questionnaire.

D. RESPONDENTS BACKGROUND

1. Gender

Male	1
Female	2

2. Age

≤20	21-30	31-40	41-50	51+
1	2	3	4	5

3. Marital Status

Married	Single	Divorced	Widowed	Other
1	2	3	4	5

4. Home language

Afrikaans	English	Xhosa	Zulu	Sotho	Other
1	2	3	4	5	6

5. Highest Level of Education

No schooling	Primary	Secondary	Tertiary
1	2	3	4

6. Current Position at Municipality

Councillor	Junior Management	Middle Management	Senior Management	Managerial
1	2	3	4	5

7. What do you think are the causes of the current living conditions within the informal settlements of Chris Hani?

8. Are there any service delivery problems currently presented by the community of Chris Hani to the municipality?

YES	1
NO	2

9. What measures has been taken by the municipality to address those problems?

10. Does the community of Chris Hani have access to basic services?

11. Are there any plans in place to upgrade the Chris Hani informal settlement in terms of service delivery?

12. What types of environmental risks is the Chris Hani informal settlement exposed to?

13. What do you think are the causes of those environmental risks?

14. Who do you think should be responsible in mitigating those risks in Chris Hani informal settlement?

Municipality	1
Community	2
Individuals	3
Councillors	4
Government Institutions	5

15. What is the municipality's intervention in assisting the community of Chris Hani informal settlement to reduce their vulnerability on service delivery issues?

16. What can be done to avoid those risks from accumulating in Chris Hani informal settlement?

Regular meetings with community	1
Regular inspections of environment	2
Community engagements	3
Review policies, strategies	4
Community awareness	5

17. How can the municipal planning interventions improve or reduce environmental risks in Chris Hani informal settlement?

18. How often are awareness campaigns being implemented by the municipality in the Chris Hani Informal settlement?

Awareness Campaign	Once a year	Three times a year	More than 3 times
Cleaning Campaign	1	2	3
Clean Water Campaign	1	2	3
Healthy Living Campaign	1	2	3
Environmental Campaign	1	2	3

19. Describe your perception on the management of the municipality pertaining to service delivery?

20. Number of years working with projects

1-3 years	1
4-6 years	2
7-10 years	3
>10 years	4

21. Rate your understanding of governance	Not familiar	Rough idea		Moderate	Very clear
22. Rate the general understanding of governance within your team or department	Not familiar	Rough idea		Moderate	Very clear
23. How often do issues of governance arise during meetings?	Never	Once in a while		Most of the time	Always
24. How often do issues of governance arise during the execution of the project?	Never	Once in a while		Most of the time	Always
25. How many times did issues of governance stop the execution of projects?	Never	Once	2-5	6-10	>10
26. How many times did the City of Cape Town Metropolitan Municipality fail to implement projects because the stakeholders claimed they were not consulted?	Never	Once	2-5	6-10	>10
27. Is the organisation's governance guide available to all employees?	No	Yes	Only to a few	Only to management	Only to top management

28. Based on your experience do you think there are some areas of conflict in terms of chairpersons of different portfolios and functions?

29. Briefly explain the process of appointing the Portfolio Chairperson and Project Managers?

Thank you for taking time in completing this questionnaire

APPENDIX D: SAMPLE OF INFORMED CONSENT LETTER



Date: 06.08.2018

Dear Survey Participant

RE: REQUEST FOR YOUR PARTICIPATION IN A QUESTIONNAIRE SURVEY

I am a master's student in the Department of Internal Auditing and Management Accounting at the Cape Peninsula University of Technology. Under the supervision of Mr Leon Gwaka, my research topic is 'Can Internal Control help in mitigating Environmental Health Risk in the Chris Hani informal settlements, of Witzenberg – Boland Region.'

The main objective of the research is to evaluate whether internal controls can help in mitigating environmental health risk in the Chris Hani Informal settlement, Witzenberg- Boland Region.

- It further seeks to determine and establish the nature of the environmental health risks in the Chris Hani informal settlements of the Witzenberg area.
- To investigate the current internal control measures from the Witzenberg local municipality and the living conditions of the inhabitants living in the Chris Hani informal settlements of the Witzenberg area.
- To identify internal control strategies that the local municipality and community can implement to mitigate the environmental health risks and improve the internal control tools used to improve service delivery.

As an employee within an institution, your valuable insights and knowledge on whether internal controls, risk management pertaining to the Chris Hani Informal settlement within your organisation will help in achieving the research objectives. Participation is voluntary and you may withdraw should it be to your best interest. Furthermore, privacy and anonymity will be maintained throughout the study and even on publication of the results. As a participant you have privilege to results of the study should you request them. Completion of the questionnaire will require approximately **10-15 minutes**.

While there are no known effects of the study, the researcher bears no liability of unforeseen effects. Should there be further questions or queries please feel free to contact Thembela Nama (thembela@capewineland.gov.za), 021 888 5211, researcher). If you agree to the above, please indicate by signing the **consent form** attached

Thank you in advance for cooperating in this research

Yours Sincerely

Thembela Nama (Research candidate, M Tech Internal Auditing)



APPENDIX E: GRAMMARIAN LETTER

22 Krag Street
Napier 7270
Overberg
Western Cape

12 September 2021

LANGUAGE & TECHNICAL EDITING

Cheryl M. Thomson

The effect of internal controls on environmental health risks within the informal settlements of Witzenberg, Western Cape Province.

Supervisor: Prof J. Dubihlela

Co-supervisor: Dr D. Dubihlela

This is to confirm that I, Cheryl Thomson, executed the language and technical editing of the above-titled Master's dissertation of **Thembela Nama**, student number **203023501**, at the CAPE PENINSULA UNIVERSITY OF TECHNOLOGY in preparation for submission of this dissertation for assessment.

Yours faithfully



CHERYL M. THOMSON

Email: cherylthomson2@gmail.com

Cell: 0826859545

Interconnection : by Thembela Beverly NAMA

ORIGINALITY REPORT

13%

SIMILARITY INDEX

12%

INTERNET SOURCES

5%

PUBLICATIONS

9%

STUDENT PAPERS

PRIMARY SOURCES

1	repository.up.ac.za Internet Source	3%
2	researchspace.ukzn.ac.za Internet Source	2%
3	hdl.handle.net Internet Source	1%
4	digiresearch.vut.ac.za Internet Source	1%
5	manualzz.com Internet Source	1%
6	Submitted to North West University Student Paper	1%
7	docplayer.net Internet Source	1%
8	Submitted to Mancosa Student Paper	1%
9	liboasis.buse.ac.zw:8080 Internet Source	1%

10	uir.unisa.ac.za Internet Source	1 %
11	witzenberg.gov.za Internet Source	1 %
12	repository.nwu.ac.za Internet Source	1 %
13	Submitted to Ghana Technology University College Student Paper	<1 %
14	aisel.aisnet.org Internet Source	<1 %
15	Submitted to University of Venda Student Paper	<1 %
16	David M. Herold, Ben Farr - Wharton, Ki - Hoon Lee, Wolfram Groschopf. "The interaction between institutional and stakeholder pressures: Advancing a framework for categorising carbon disclosure strategies", BUSINESS STRATEGY & DEVELOPMENT, 2018 Publication	<1 %
17	www.corruptionwatch.org.za Internet Source	<1 %
18	www.demarcation.org.za Internet Source	<1 %