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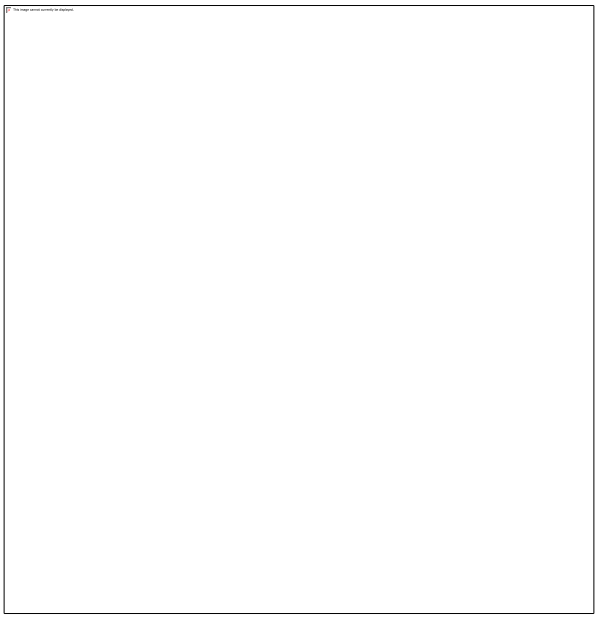

A STUDY OF THE KNOWLEDGE, ATTITUDES AND PRACTICES ON CREMATION AS AN ENVIRONMENTAL MEASURE.THE CASE OF MANHENGA PERI-URBAN TOWN IN BINDURA

By

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DECLARATION

To be compiled by the student

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I Takunda Mandizha do hereby declare that this work-related project is my original work and has not been submitted before. All the information derived from other sources is indicated in the project.

Signature of the student.....Date 21/10/2025

To be compiled by the supervisor

This dissertation is suitable for submission to the faculty and has been checked for conformity with the faculty guidelines.

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DEDICATION

I dedicate this research project to my dear family and my friends for the support they have given me.

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ABSTRACT

Following the rapid growth of urbanization, people are migrating from rural to urban areas in pursuit of better opportunities, even though peri-urban areas were intended to accommodate a much smaller population. Due to the high death rates the planned cemeteries are becoming overcrowded. People have begun to utilize the available land to bury their loved ones, which has reduced the total amount of land available for other economic activities that bring income to people. To curb this growing problem local people must adopt cremation hence their knowledge and attitudes towards cremation as a sustainable alternative for the traditional burial practice must align. A descriptive cross-sectional study was carried out and data was collected using research questionnaires. 30 research questionnaires were administered amongst the participants. The questionnaire consisted of four sections namely, socio-demographic characteristics, knowledge, attitude, and practices (KAP) section. Data was analyzed using Microsoft Excel 2013 and SPSS version 20. A total of 30 respondents participated in the study with 30% being male, while 70% were female. 53, 4% of the participants were accounted for by the 26-34 & over 50 age groups. The participant's knowledge score was quite good at 80%. The attitude score was quite good at 73%. However the practices score was very low at 24% indicating a low level of practicing cremation. The study concludes that among the participants, knowledge on cremation was quite good, attitudes negative and practice extremely low guided by the strong Christian beliefs and Shona culture. Thus even people have vast knowledge know about cremation as long as their attitude is negative and there is no a radical shift in perceptions about the dead loved ones cremation cannot be adopted in the community. For cremation to be widely adopted as a sustainable burial method in Nyanhehwe village, village residents must participate in more environmental awareness campaigns, the government should integrate cremation into the education curriculum from primary level to tertiary level education and cremation awareness campaigns should be done in communities, government should build more crematoriums, publish its costs of services and disseminate cremation benefits to the public from local authorities.

Key terms: *Attitudes, Cremation, Knowledge, Practices, Traditional burial practices*

ACRONYMS AND ABBREVIATIONS

BUSE - Bindura University of Science Education

FAES - Faculty of Agriculture and Environmental Science

ZIMSTAT - Zimbabwe National Statistics Agency

KAP - Knowledge, Attitudes and Practices

Table of Contents

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter focuses on the background of the study. It also streamlines the problem statement, objectives, research questions, justification, ethical considerations, delimitations, and limitations of the study.

1.2 Background of the Study

Urbanization has been a primary driver of economic, social, and physical transformation in developing nations, including Sub-Saharan Africa (Aggrey, 2020).According to Rakodi 1997 it is almost a truism that the planet's future is one urban and that the largest and growing cities are primarily in developing countries. The rapid urban population has increased the need for urban land for housing and other urban purposes, according to Aguilar and Ward (2003). This demand also has an impact on nearby areas, creating peri-urban areas. Peri-urban areas are areas that are located on the outskirts of cities or large urban areas but retain rural characteristics such as substantial reliance on agricultural production (Centre of Expertise for Urban Programming, 2013). A report by The World Bank in 2022 has shown that waste generation rates are rising, the world was estimated to generate 2.24 billion tonnes of solid waste, amounting to a footprint of 0.79 kilograms per person per day, and with rapid population growth and urbanization, annual waste generation is expected to increase by 73% from 2020 levels to 3.88 billion tonnes in 2050 (The World Bank, 2022).

Government and metropolitan local authorities are facing unprecedented challenges in managing this waste generated and one of the challenges faced is disposal of deceased people. According to a report by Zimbabwe National Statistics Agency (ZIMSTAT) in 2022, the total population of Zimbabwe is 15 179 979 inhabitants at an area of 386,850 km^2. There were a total of 121,078 deaths occurred during the 12 months before the census which gives a crude death rate of 8.0 deaths per 1,000 persons. At the provincial level, in Matabeleland South province were 9.7 deaths per 1,000 persons (highest CDR), and in Harare (capital city) were 5.8 deaths per 1,000 persons. In Mashonaland Central where Manhenga a peri-urban town in Bindura is situated there was a crude death rate of 7.8 deaths per 1000 thus in a population of 1 384 891 inhabitants there were 10 799 deaths (Zimbabwe 2022 Population and Housing Census Report). According to Evangelical Church for Zimbabwe, the total land area for Mashonaland Central with its eight districts is 28 347 km2 and with deaths of more than ten

thousand, this gives an environmental problem of the land where to bury them. The number of death rates in Mashonaland Central is rising due to contributing factors that include the HIV and AIDS pandemic, COVID-19 pandemic, poverty, mining, infant deaths, etc. but the total land area is not expanding leading to a serious demand for land. Municipality cemeteries have filled up, leading to an increase in the demand for burial land as they are running out of space (Rae, 2021)

In light of the growing number of fatalities and the ongoing lack of land, municipalities must discuss and decide how best to dispose of the corpse, such as by cremation. Following British colonization, Christianity has been the religion of many people in Zimbabwe, including the in Manhenga (Machingura and Kalizi, 2024) and only a few are still practicing African Traditional Religion. Nevertheless, similar to other African tribes, these two religions consider death to be sacred rite and the handling of the human body is revered. According to African traditional religion, a person's journey does not end with death; rather, they continue on into the afterlife and serve as an ancestor to the family. Since a person is considered a medium (ancestor) during this stage of their journey, it is crucial that their body be preserved and that they get an appropriately suited funeral (Zondi and Zwane 2014). African culture holds that the departed should have their body preserved and given an appropriate funeral so that their ancestors can welcome them in the afterlife (Hove et al. 2024). In Christianity, biblical references and the belief that the dead would rise again at Christ's second coming make inhumation the most religiously acceptable method of disposal (Sorensen and Rebay-Salisbury, 2012). According to Hove 2024, Churches perform funeral rites because they are common patterns of behaviour that emphasize significant social values and help in expressing how individuals see the world and themselves.

Despite inhumation as the most preferred method of human disposal in African societies, recent studies have shown that several environmental impacts are associated with burying the dead these include concerns over land use, resource consumption, and environmental degradation increase **(**Daramola et al., 2016)**.** Cremation is the process of burning a deceased person's body.Consequences of cremation include cost-effective, fewer environmental considerations, space efficiency, and portability among many others (Davies and Mates 2016).Even though cremation is becoming more and more popular around the world, it is generally agreed that people need to discover more environmentally friendly ways to get rid of their loved ones' dead remains. However, there is still a significant absence of published research or literature on how

scholars can help communities embrace the shifts in attitudes, feelings, and emotions necessary to abandon long-standing religious beliefs and customs surrounding unsustainable funeral practices (Tsey, 2018). Therefore understanding public knowledge, attitudes, and practices on cremation as a data investigation tool to assess the chemical, physical, or biological factors in the environment that impact human health or quality of life becomes essential.

1.3 Problem Statement

Following the rapid growth of urbanization, people are migrating from rural to urban areas in pursuit of better opportunities for their lives, even though peri-urban areas were intended to accommodate a much smaller population. Due to the high rates of cholera, COVID-19 infections, HIV and AIDS, poverty, and traffic accidents, many people are passing away, and the planned cemeteries are becoming overcrowded. People have begun to utilize the available land to bury their loved ones, which has reduced the total amount of land available for other economic activities that bring income to people, such as industries and agriculture. Further, reports suggest that inhumation has adverse environmental impacts on human health. Countries like Greece, the United Kingdom, and India, among others, have embraced cremation as a method of disposing of the body of the deceased (Rebay-Salisbury, 2012). They have benefited significantly from this as there is less concern about environmental harm and land demand. However, for a variety of reasons, few people in Zimbabwean society opted for cremation. Thus, the knowledge, opinions, and behaviours of residents of the Manhenga peri-urban area regarding cremation as an environmental solution will be the main focus of this study.

1.4 Aim

To investigate knowledge, attitudes, and practices (KAP) of the people living in the peri urban area of Manhenga towards cremation as an environmental measure and it’s potential as a sustainable alternative for the area's traditional burial practices.

1.5 Specific Objectives

1. To determine the level of knowledge about cremation and its environmental benefits among Manhenga residents.

2. To examine the attitudes towards cremation, including perceived benefits and drawbacks among Manhenga residents.

3. To explore the current practices related to cremation and environmental sustainability among Manhenga residents.

4. To relate Knowledge, Attitudes and Practices of residents towards cremation.

1.6 Research Questions

1. What is the general understanding of cremation and its associated environmental benefits among Manhenga residents?

2. What are the views of Manhenga residents towards cremation, and what perceived benefits and drawbacks do they associate with this practice?

3. What are the cremation practices and customs among Manhenga residents and what environmental factors are taken into account?

4. How is Knowledge, Attitudes and Practices on cremation related to socio-demographic variables?

1.7 Justification

This research focuses on the knowledge attitude and practices towards cremation as an environmental measure. Cremation, as an alternative to commonly practiced traditional burial customs, has attracted attention for its potential environmental benefits, particularly in urban areas where land scarcity and pollution are issues. This study aims to investigate the relationship between knowledge, attitude, and practices regarding cremation, outlining factors affecting cremation adoption in peri-urban towns and informing interventions to promote environmentally sustainable human disposal practices. As peri-urban areas adopt cremation as a burial practice, this study will present and explain its social and environmental implications, including benefits and drawbacks.This research is expected to contribute to both academic understanding and practical implications regarding cremation as a human disposal method.

1.8 Limitations of the Study

The researcher may encounter sampling bias where participants may not represent the entire population of Manhenga town. Respondents may provide answers considered socially acceptable and responses that do not reflect their behaviours. The questionnaires used by the researcher may not accurately capture residents' attitudes and practices of cremation. Lastly, the findings may not apply to rural settings.

1.9 Delimitations

This study only focuses on cremation as another alternative to the traditional burial method of human body disposal in Manhenga town.

1.9.1 Ethical Considerations

The researcher will conform to the research principles by presenting the permission as a letter from the Bindura University of Science Education to the responsible authorities. Furthermore, the participants will be informed about the purpose of the study and that they have the right to withdraw at any point during the study without giving any reason. Sensitive information and topics will be handled with care and the collected data will be kept confidential. The researcher respects the culture and social beliefs of the study participants. Above all this research will be done with due respect for deceased individuals and their families.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter reviews the literature that has been published by other authors. The literature outlined in this chapter includes the overview of cremation, knowledge, attitudes and practices on cremation as an environmental measure.

2.1 Overview of Cremation

Cremation is an ancient practice of disposing of a dead person after they pass away by burning their bodily remains (Zwane, 2011). The Encyclopedia of Cremation defines cremation as the practice of heating a dead human body to "between 1400 and 2100 ◦F to consume the body's soft tissue and reduce the skeleton to fragments and particles". According to research by Hu, 2023 and Chitando, 1999 cremation fires are used in funeral rites to send the soul to a place of eternal pleasure in paradise. Burning the dead is not a solitary practice; rather, it is frequently associated with ideas that the physical self transforms into different forms and worlds and that fire is a potent tool for transformation and purification. A deceased person was carried to a funeral pyre on a stretcher before the invention of coffins. Logs were then added to a fire till only ashes remained of the body. The Hinduism-based custom of dispersing the ashes into a river or other body of water is still common today.

2.2 Knowledge of People towards Cremation

Knowledge is defined as facts, information, and abilities gained from education, experience, or the theoretical or practical comprehension of a subject (Lave, 2021). According to a study conducted by Postill et al. 2020 in Ontario, Canada's southernmost province, 39,760 cremations were performed, with the biggest number occurring in April with 7,527 cremations, which coincided with a peak in COVID-19 cases. According to Go and Docot, COVID-19 struck the Philippines hard in 2020, with 422,915 instances documented. To stop the virus's transmission, Philippine laws required that proven or suspected COVID-19 victims be cremated as soon as possible, within 12 hours after their deaths.

In accordance to the May 2018 article by Rodney Muhumuza, former Kenyan presidential candidate and wealthiest man Kennedy Matiba chose cremation, a move that many Kenyans found shocking given their cultural norms. Lave, 2021 stated that knowledge is information that can be acquired through education, in Zimbabwe through The Institute of Funeral Business

Management people are trained about cremation. . An important lesson to factor is the Burial and Cremation Act where vital provisions are disseminated for example the following provisions, section 15 states that no crematorium shall be situated nearer to any dwelling-house than two hundred meters, except with the consent in writing of the owner, lessee and occupier of such dwelling-house and also within fifty meters of any public road. According to section regulations the Minister can make regulations for the establishment, maintenance and inspection of crematoria, prescribe in what cases and under what conditions the burning of anybody may take place; and can also direct the disposition or interment of any ashes resulting from the burning of any body.

Research by Miller and Wiens, 2017 show that the decomposition of inhumed bodies produces leachates, or liquids, which are usually made up of water, protein, fat, mineral salts, and carbohydrates. They also contain chemical products like heavy metals like mercury from amalgam dental fillings, titanium, chromium (Cr), and cadmium, as well as possible microbial pathogens like bacteria and viruses. Leachates can include embalming fluids, clothes and coffin materials, or decorations or ornaments placed with the deceased. Leachates gradually soak into the soil and have the ability to pollute surface or ground water affecting aquatic ecosystems. Heavy metals can bio accumulate in plants and animals potentially affecting the food chain. Formaldehyde can persist in soil for extended periods, potentially affecting microbial activity, nutrient cycling and plant growth. The size of the cemetery and the number of burials, the frequency of coffin use, the type of soil and topography surrounding the cemetery, and the cemetery's location in relation to surface or ground water that could carry leachates away from grave sites are factors that directly affect the amount of leachate that seeps into soil and groundwater. Cremation promotes a healthy environment by reducing this environmental contamination that comes from the decomposition of dead bodies.

CEMETERY SOURCE	END PRODUCTS & POTENTIAL CONTAMINANTS
Body Decomposition	Bacteria (total & faecal coliform, faecal streptococci, proteolytic, lipolytic), viruses, water, carbon dioxide (carbonic acid), methane, ammonia & ammonia compounds, nitrogen (in various forms), sulphate, hydrogen sulphide, phosphate, calcium, chloride, potassium & other salts; putrescine, cadaverine; oil & grease; others
Embalming Compounds	Formaldehyde, methanol, phenol, arsenic; aluminium, mercury, lead, & other metals
Man Made Artefacts	Iron, zinc, lead, copper & other metals; phenols, tannins & lignins, water, carbon dioxide, methane, hydrogen sulphide, organic acids; protein - water, carbon dioxide, methane, ammonia, hydrogen sulphide; cellulose - acids, carbon dioxide & water; lignin - phenols & alcohols

Fig 1. End products and potential contaminants at cemeteries (*Miller & Wiens, 2017*)

According to a studies by Shoko, 2008; Gwisai and Masona, 2023; Hove et al…, 2024 in Zimbabwe and South African tribes, their results illustrated that cremation has an positive impact on environment thus overcoming the problem of lack of land in urban areas needed for housing, recreation, business, agriculture and industries as the HIV/AIDS and COVID-19 pandemics caused numerous fatalities, leading to severe concerns regarding city burial grounds, as this land is limited. There is a lack of burial sites and insufficient space to manage the huge number of deaths that occur every day in cities like Harare and Johannesburg. For instance, this has led to the cost of burial increasing due to of the land fees that municipalities charge for its use and maintenance. COVID-19 mortality rates in Zimbabwe increased from less than 500 deaths in December 2020 to 4500 deaths by October 2021. As a result, the ongoing increase in death rates relative to the constant land size has put pressure on the supply of municipal burial sites.

2.3 Attitudes of People towards Cremation

Attitudes are complex mental states that encompasses a person's feelings, beliefs, and predispositions towards ideas and they often influence behaviour, decision making and interactions with others (Olson & Stone 2005). People's opinions on cremation differ depending on a number of factors, such as their culture, religious beliefs (such as Christianity, Islam, African Traditional Religion, Buddhism, and Hinduism), location of origin, and norms and values.

Christianity

Christianity is a monotheistic Abrahamic religion cantered on the life and teachings of Jesus Christ, who Christians believe to be the Son of God and the Messiah and uses the bible as its holy book. Osore Omufulukhani Esilaba Caleb's 2021 study reveals that the Bible is mute on its stance on body disposal, hence it does not support either burial or cremation of the deceased. However, it's clear that the Bible contains tales of God's followers burial their loved ones. For instance, Abraham secured a burial site for his wife- Sarah and his family. Genesis 23:2-20; 49:29-32. John also notes in his Gospel that burial was the preferred custom for the Jews (John 19:40). On the other hand, there are incidences where persons burned the remains of the dead. For instance, when King Saul and three of his sons were killed in the battle, their corpses initially remained in the territory of the enemy, where they were treated dishonourably. Upon hearing these, Israelite warriors retrieved their bodies, burned them, and buried the remains, even King David was pleased and blessed them.

According to a study by Geisler et al., 2025 a second teaching in the bible that may impact the ethics of cremation is the doctrine of the future bodily resurrection.Christrians believe that one day they shall be risen in a glorified , physical body by God awaiting for their judgement as written "For I know that my Redeemer lives, and at the last he will stand upon the earth. And after my skin has been thus destroyed, yet in my flesh I shall see God" (Job 19:25–26). Nevertheless, despite the importance of the resurrection belief, Scripture has limited information regarding this event, and it is unclear exactly how God will bodily raise the dispersed and decaying corpses of the faithful. Therefore, the choice to be cremated is essentially a personal one for the majority of Christians today.

Judaism

Judaism is monotheistic religion and way of life of the Jewish people, cantered on the belief in one God and a covenant with him, with practices rooted in the Torah and rabbinic traditions (Paterson, 2009).The Jewish people believe that the human body, according to Jewish law, belongs to God, not to the individual. Cremation is regarded by Jewish law and tradition as a form of property destruction. The soul does not instantaneously leave the body, according to Jewish mysticism, or Kabbalah thus cremation on the other hand, is thought to inflict pain even after death since it slowly departs the body as it decomposes (Raphael, 2019). Jews believe that one day they shall be risen from the dead by Messiah on the judgement day as written in the books of Isaiah and Daniel, and other parts of the Tanakh (Brody, 2016).According to Kemble, 1855 in the history of Judaism cremation is considered a heathen burial ritual and it became linked to pagan religious ideas, from which Jews were instructed to stay as far away as possible. Judaism is practiced in France, Canada, Russia, the United Kingdom, Argentina, Germany, Australia, and Brazil etc.

Islam

According to **Quran (Surah Al-Baqarah 2:30)** the verse narrates the creation of humankind from dust and it is written “And [mention] when your Lord said to the angels, "I will create upon the earth a successor."... Then He breathed into him of His [own] soul, and he became upright standing.’’ The Prophet Muhammad (PBUH) in Hadith is reported to have said, "Do not burn your dead, “thus cremation is considered an unclean practice “haram”. Muslims believe in burial procedures also have a fixed sequence of events, which include bathing (ghusl), covering the body with fabric or shroud (kafan), receiving friends and family, and finally gathering the Muslim community to offer forgiveness prayers (Salat al-Janazah) . After that, the body is prepared for burial, with the head towards Mecca (Ma Ḍā Hib, 2020). Cremation is not possible with these procedures alone. Muslims believe in resurrection of the physical body as the Quran teaches that the body slowly disintegrates, except for the tailbone. It is believed that at the time of resurrection, Allah resurrects the body from the tailbone (Elaskary & Yun, 2017) . Cremation is thought to prevent resurrection by destroying the tailbone along with the rest of the body. Islamic religion is practiced in nations of South Asia, Southeast Asia, the Middle East, North Africa, and parts of Europe and Africa for example Indonesia, Pakistan, Bangladesh, Egypt, and Turkey.

Buddhism

Another religion is Buddhism, it is closely associated with cremation as a funeral practice Buddha their religion founder was himself cremated, it follows that many Buddhist practitioners choose to follow in his footsteps (Karen Laing, 2017). According to Buddhists, there is no connection between the departed person's consciousness and the body or remains left behind after death thus their funeral rites are not to guarantee admittance into heaven. Buddhists also believe in reincarnation, or rebirth. They regard death as a part of a never-ending cycle of rebirth until one reaches the ultimate degree of consciousness. (Dessì, 2013).According to Dessi, 2013 when the Buddhist attains greatest consciousness, he or she enters Nirvana, a condition in which there is no pain or suffering, no desire or selfishness, all karmic debts are fulfilled, and the cycle of death and rebirth ceases. Buddhism religion is practiced in nations like Cambodia, Thailand, Myanmar, Bhutan, Sri Lanka, Laos, and Mongolia etc.

Hinduism

According to Dastidar, 2015.Hindus believe that the human soul is not limited to a single body but can stay in any number of bodies human or not before arriving at the ultimate goal of emancipation, or mukti. To achieve this mukti final level, Hindus must strive to be free of attachments and cravings, as well as live a life that will allow them to break free from the cycle (Karen Laing, 2017). They regard the body as a prison hence it is not of importance for the soul, the body breeds attachments and wants that stifle progress toward liberation. As a result, cremation is used in Hindu funerals to cut the soul's bonds to the body it is leaving, allowing it to progress toward mukti. However Hindu children and saints, who are believed to be pure and unattached to their bodies; therefore, they are be buried instead of cremated. Hinduism is practiced in nations like India, Nepal, and Mauritius, as well as significant populations in Indonesia, Bangladesh, Pakistan, Sri Lanka, and the United States etc.

African Traditional Religion

According to a research by Ige, 2006 indicated that Africans regard the notion of being an ancestor after death as a desired objective. It is thought that, to be in the world of the dead offers a person unique authority over those still living. It is thought that ancestors can protect their families and offer guidance. If a person had some of their organs removed while they were still alive, this objective would not be met. Cremation prevents a person from being buried whole and obtaining a proper burial, which is needed to fulfil the goal of becoming an

ancestor.African tribes also believe when a person is buried his soul does not leave instantly it can take some days before it leaves the body (Mbiti, 1990).African Traditional Religion is practiced in nations including Zimbabwe, Kenya, Nigeria, South Africa, Zambia, Benin, Mali etc. .

2.3.1 Cremation Perceived Benefits and Drawbacks

According to a study by Masona & Gwisai, 2023 it is less expensive to cremate a deceased person in Bulawayo using direct cremation than to bury them without a funeral policy because funeral costs include food, coffin, transportation, and mortuary charges in addition to the grave costs. At the beginning of 2021, Zimbabwe increased the cost of burial and cremation by purchasing a grave space; the highest cost for cremating an adult non-Hindu Zimbabwean resident was ZWL$ 18,385, while the cost of burying an adult Zimbabwean ranges from ZWL $6130 to ZWL $14,300, this price just pays for the cemetery and excludes transportation, casket, mortuary fees and meals. Cremation is also viewed as practical because it allows for the scattering of the remains in a place of significance to the deceased. This usually takes place at a later date and reduces the stress and strains associated with burial practices. Some Shona people also preferred their bodies to be disposed of quickly by heat rather than decaying in a grave(Ummah, 2019).

One of the disadvantages of cremation is that it releases nitrogen dioxide (NOx) into the atmosphere, which can harm the natural environment. As stated by Litten (1991), cremation is "clean," but it isn't "green." Furthermore, up to 16% of mercury emissions in the UK's air—a significant amount—have been attributed to mercury amalgam vaporised in crematoria (Brookes, 2019.) The average cremation emits 400 mg/m3 of NOx, according to Brookes (2019). Facultative Technologies Ltd., a company that supplies cremation and incineration equipment, conducted tests on cremators and found that, with a cremation time of 75 minutes, 500 g of NOx are released into the atmosphere, which is roughly equivalent to a car travelling 2280 miles. The average NOx emission from a car is 0.137 g/km; when compared to the emissions from cremation, this figure is estimated to be the equivalent of 3650 cars passing the crematorium during a 75-minute cremation. Therefore, the NOx emissions are comparable to '50 cars a minute, every minute' driving past the crematorium during a cremation, which is quite astounding (Brookes, 2019).

Cremation diminishes highly significant and sacred rituals and places in communities for instance graves are resides and resting places for the deceased in African culture, especially among the Zulu and Karanga people. (Chitando 1999; Zwane 2011; Shoko 2008). Burial sites are sacred and revered places where the dead and the living can interact, where people and families can share their concerns with their deceased loved ones. For this reason, graves are

called Vari Pasi (those below) in Karanga and Abapansi (those of the underground) in Zulu. These sites are very important in African culture, which is why cremation causes a crisis among Africans because it completely removes loved ones when they pass away.

According to a study by Hove et al., 2024 Cremation is believed to be the incorrect handling of a deceased person's body, and it is thought to impart curses and bad luck to people who carried out these ceremonies on their departed, such as illness, failure, and unexplained deaths in the family. Cremation is believed to destroy the body and the spirit which belongs to God tampering with them is unrespectful (Masango, 2005). Another disadvantage of cremation, according to Hove et al. (2024), is that it can conceal crimes because it is difficult to track down suspected foul play since a burnt body cannot be collected for additional testing for foul play. Therefore, it can be used to cover up a crime unlike in inhumation, the body can easily be unearthed and taken for forensic investigation to trace the cause of death.

2.4 Practices of People towards Cremation

Practices are applications or uses of concepts, ideas, or techniques that are typically or frequently carried out, frequently as part of a tradition or custom.In order for cremation to take place, perceptions and understanding regarding its operation, consequences, and advantages must coincide. According to McDaniel (2023), the soul may go to either Pitriloka (the house of the ancestors) or Devaloka (the abode of the Gods) after death, according to the Vedas, the oldest documented tradition of the Hindu faith in India. The soul may ascend to the highest heaven, according to the Rig Veda notes. In this instance, avoiding re-death and achieving immortality are its objectives. According to Rig Veda notes, the soul may possibly have lived with the fathers or ancestors. The shraddha ceremony is carried out to ensure that the soul will have a bright destiny. The purpose of this ceremony is to assist, care for, and shield the deceased's souls as they transition from the lower to the higher realms before rebirth (McDaniel, 2023).

For the purpose to deem the deceased an ancestor (pitri), a shraddha ceremony is held on the first anniversary of death each year. In the sapindikarana rite, a body is constructed for the soul and a home fire is created. Ghee (clarified butter) and rice, which resembles the body of an ancestor, are combined to create a pinda, or rice ball. The family performs the ceremony year, and as the soul gets a body, it enters the ancestral world to be with the other respected deceased souls. The soul may roam the world as a nameless, faceless, confused spirit known as a bhuta or preta if it is unable to acquire a body. The corpse is burnt shortly after death to prevent the spirit from being drawn to its former body. The body is burned outside, typically in a smashan area, on a funeral pyre or burning ground used for these purposes. (McDaniel, 2023.)

Varanasi situated beside the Ganga River is a strong sense of interconnectedness between human existence and the river (Amol Rathod et al., 2022). India's spiritual capital Varanasi is renowned for its sacred ghats, for instance the Manikarnika Ghat, often referred to as Burning Ghat or Mahashamshan, is a location where the Hindu believe that if a deceased’s ashes are laid in the Ganges at Varanasi, their soul will be transported to heaven and escape the cycle of rebirth. In a culture that believes in reincarnation, this concept called *moksha* is profound. The holier the place, the better the chances you achieve moksha and avoid returning to Earth as a cow or a cricket in your next life (McBride, 2014). On this Burning Ghat, an average of 100 dead bodies 8, 9 are burnt each day (Amol Rathod et al., 2022).

Cremation historically triggered a greater resistance among Christians, although in recent decades, this has changed. Cremation is currently permitted in many churches, while certain Christian groups still favour burial. For example, the Catholic Church used to be against cremation but is now in favour of it as long as it is not chosen for reasons that are in opposition to Christian doctrine. For example, the ashes should not be scattered, divided, or kept at home, but should be buried in a cemetery or placed in a columbarium. According to Hove et al., 2024 cremation is gradually becoming more common in African culture; in South Africa, it is notably growing in the Western Cape province, where it accounts for 12% of all funerals. The statistics are lower in provinces where Black people make up the bulk of the population. Though the practice is unpopular, particularly among South Africans who speak Zulu, Around Durban, the KwaZulu-Natal municipality has started an initiative to encourage people to adopt cremation.

The Cremation Society and Bulawayo City Health published an article in 2015 stating that there are two crematories in Bulawayo and Harare. In 2014, there were 4,931 deaths in Bulawayo, despite 125 cremations. In 2015, 124 people were cremated, while 4791 people died in Bulawayo City citywide.

CHAPTER THREE: RESEARCH METHODOLOGY

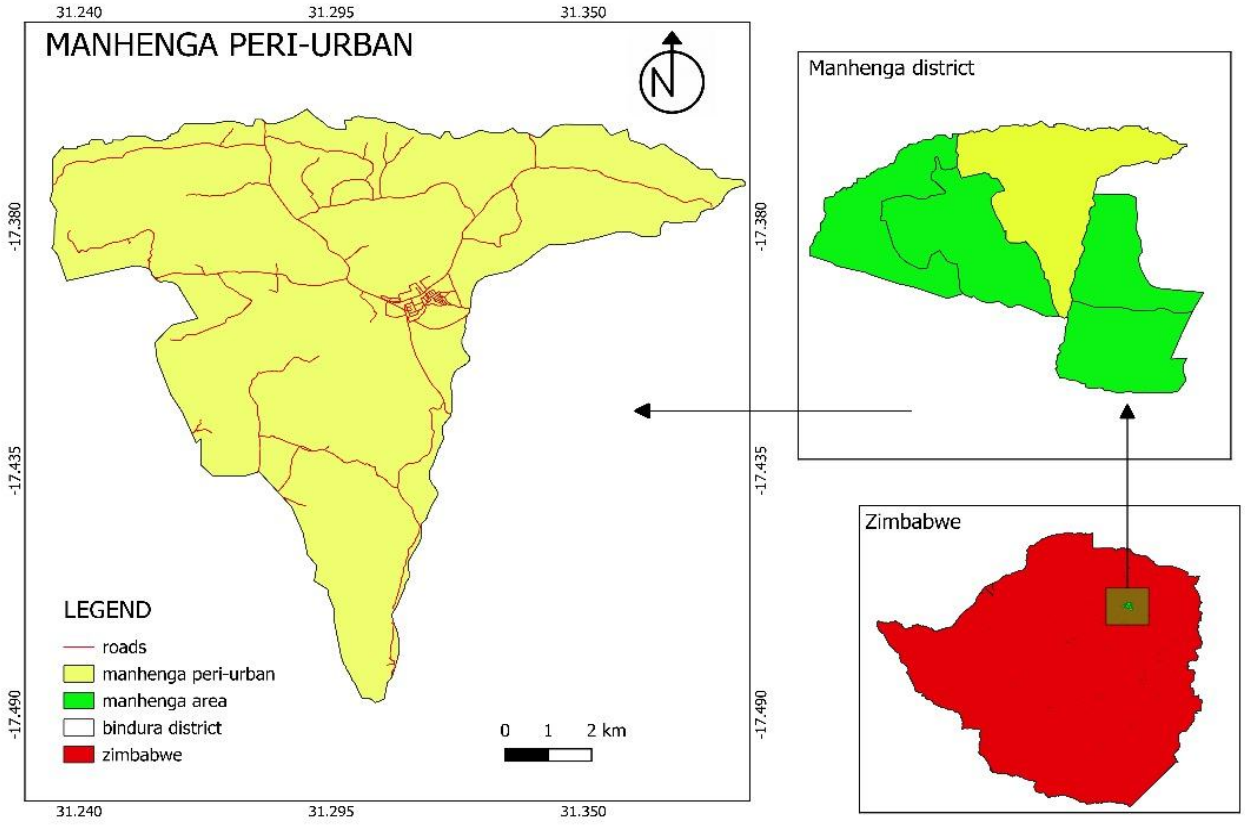
3.0 Introduction

To investigate the knowledge, attitudes, and practices (KAP) of the people living in the peri-urban town of Manhenga towards cremation as an environmental measure and it's potential as a sustainable alternative for the area's traditional burial practices. This chapter discusses the study area, research tools and procedures employed in the study. The target population, sample size, sampling techniques and study design are all included in research methodology. This chapter also covers research instruments, analytic strategy, ethics, validity and dependability.

3.1 Study Area

The research was done in Nyanhehwe Village of Manhenga peri urban area, which is situated at 17.3911°S and 31.3131°E in Bindura Town. Manhenga peri urban area is about 15, 9 km from Bindura, Mashonaland Central Province's provincial capital, Bindura, a small town with a tranquil semi-urban atmosphere.

Fig 2: Map showing Manhenga Peri-urban area



3.2 Study Design

The research employed a cross sectional study design a type of observational research design where data is collected from a group of participants at a single point in time. It provides a snapshot of a population by examining the relationships between variables at that moment. Cross sectional study was used because it is relatively quick and inexpensive to conduct and researchers can examine relationships between many variables simultaneously (Wang & Cheng, 2020). As the study was descriptive, both qualitative and quantitative tools were used to analyses data collected using questionnaires. A sample of 30 participants was used to collect data during the research.

3.3 Data Sources

The researcher used primary data that is information directly obtained from primary sources (respondents) through questionnaires. The primary sources of primary data were the Nyanhehwe Village residents.

3.4 Sampling Method

The researcher used simple random sampling method were a subset of individuals (sample) of 30 respondents was chosen from a larger set (total population) for Nyanhehwe Village in which a subset of individuals were chosen randomly and all with the same probability. In simple random sampling , each individual in a population has the same probability of being chosen for the sample as any other individual (Lemeshow & Ferketich, 2020). Simple random sampling has the benefits that it's straightforward to use and does not require prior demographic information. Random selection also eliminates researcher bias in respondent selection, generating more reliable results. Simple random sampling can be used for research projects with low resources since it is quick and inexpensive to do, and the selected sample is presumed to be representative of the entire population (Lemeshow & Ferketich, 2020).

3.5 Researcher Tools

The researcher used questionnaires with closed -ended questions as a research tool. A questionnaire is a set of common questions laid out in a standard and logical form to record data from respondent with instructions to show the interviewer or the respondent how to move through the questions and complete the schedule. It could be printed on paper or on a computer screen (*WhatisaQuestionnaire,* n.d.)The questionnaires were manually distributed by the researcher to the target populations at the chosen family homesteads, business areas or shops.

The research study was conducted in May during the summer season, most households were harvesting corn (maize), and others required leaving to fetch water and firewood among other chores, a questionnaire was used as it is quick to get respondents' responses. Few males were found since the majority had gone for gold panning in Bindura, a town known for gold mining operations, and others had gone hunting for meat.

The questionnaire consisted of four sections:

(I) Socio-Demographic Characteristics.

(ii) Knowledge on Cremation

(iii) Attitudes towards Cremation

(iv) Practices towards Cremation

The researcher thoroughly engaged the respondents to ensure they understood what cremation is and patiently waited for them to complete the questionnaire for analysis.

3.6 Reliability and Validity of Research Instruments

Reliability refers the consistency and dependability of a measurement tool, meaning it yields similar results when used repeatedly under the same conditions. Validity refers to the degree to which the instrument accurately measures what it's intended to measure. It's a crucial aspect of ensuring the trustworthiness and reliability of research findings. A valid instrument provides accurate and significant data for research purposes (Bornstein, 2018). The researcher examined the results' consistency with other measures of the same ideas and established theories over time, among different observers, and across various test sections to assess their reliability and validity.

3.7 Statistical Analysis

Microsoft Excel 2013 and SPSS version 20 were used in the data analysis process. The research questionnaire had 6 questions to ascertain the participants' knowledge, 6 questions to assess their attitudes, and 6 questions to ascertain their practices towards cremation as an environmental measure. Each correct response received a score of 1, while incorrect and don't know responses received a score of 0. Each character's average score was determined, and responses were classified as "Good," if the score was above 70% "Fair," if the score was from 51-69% or "Poor" if it was less than 50%. The overall KAP scores were calculated by combining the scores. The total KAP score was used to rank the level of knowledge, attitude,

and practices, of the participants on cremation as an environmental measure. Tables were used to display the data after analysis and Pearson Chi-Square tests and multinomial logistic regression was used to relate KAP to socio-demographic variables.

3.8 Research Ethics

According to Dooly et al., 2017 research ethics are norms and guidelines that direct researchers to carry out experiments morally, maintaining integrity, upholding the rights of participants, and ensuring the welfare of humans engaged are collectively referred to as research ethics. It is an area of applied ethics that focusses on how research is conducted, including participant treatment, scientific integrity, and social responsibilities of researchers. The researcher requested permission from the Registrar to conduct a study in Nyanhehwe Village and with the assistance of the supervisor and the Chairperson of FAES, approval was given with limitations. The research subjects participated willingly without being forced. Participants were assured by the researcher that declining to participate would have no negative effects or penalties. The researcher gave the participants all the information they required on the study, such as benefits, risks, funding, and institutional approval. Every respondent has the right to privacy, the researcher protected anonymity wherever it was possible.

CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter presents, analyses and discuss findings of the study. The study also sought to establish how Knowledge, Attitudes and Practices on cremation are related to socio-demographic variables. The researcher used tables and texts to present and analyse data.

4.1 Section A: Socio- Demographic Characteristics

Table 4.1: Summary of socio- demographic characteristics

Demographic variable	**Category**	**Frequency n = 30**	**Percent % = 100**
Gender	Male	9	30.0
	Female	21	70.0
Age	18 -25 years	6	20.0
	26 -34 years	8	26.7
	35 -40 years	4	13.3
	41 -49 years	4	13.3
	50+	8	26.7
Education	None	11	36.7
	Primary	3	10.0
	Secondary	12	40.0
	Tertiary	4	13.3
Religious Affiliation	Christianity	30	100
	Islam	0	
	African Traditional Religion	0	
Have you ever participated in any environmental awareness campaigns?	Yes	11	36.7
	No	19	63.3

The research consisted of a total of 30 participants: 9 males and 21 females. Eight individuals were aged 26-34 years and 50 years or older respectively, six were aged 18-25 years, and four were aged 35-40 years and 41-49 years, respectively.12 people attended secondary education as their highest level of education, 11 participants did not attend any education level, 4 participants completed tertiary education level, and 3 finished at primary education level. All participants indicated Christianity as their religion. The majority of participants participated in an environmental awareness campaign, such as National Clean-Up Day, whereas the remaining few participants never participated.

4.2 Section B: Knowledge on Cremation

Table 4.2: Knowledge on cremation

Knowledge variable	**Participant Response**			**Preferred Response**	**Score**
		n	**%**		
Q6. Have you ever heard of cremation as a method of body disposal?	YES	19	63.3	**YES**	**0.633**
Q7. Do you know the process of cremation?	NO	16	53.3	**NO**	**0.533**
Q8. Do you know of any laws or regulations regarding cremation in Zimbabwe?	NO	23	76.7	**NO**	**0.767**
Q9. Are you aware that cremation uses less resources than traditional burial methods?	YES	24	80.0	**YES**	**0.80**
Q10. Are you aware that cremation can save land space?	YES	23	76.7	**YES**	**0.767**

Q11. Do you think cremation can reduce the risk of environmental contamination as compared to traditional burials?	YES	15	50.0	**YES**	**0.500**
TOTAL KNOWLEDGE SCORE					**4.0**

According to table 4.2, the total score on knowledge is 4 out of 5 meaning the percentage knowledge score is 80% which is quite good.64,4% of the participants had heard of cremation as a method of body disposal , although 53,3% indicated they did not know how cremation process is done. Most of the participants (76, 7%) indicated that they did not know of any laws or regulations regarding cremation in Zimbabwe. 80% of the participants were aware that cremation uses less resources than traditional burial methods. Half the total population highlighted that cremation can reduce the risk of environmental contamination as compared to traditional burials and the majority (76, 7%) of the participants were aware that cremation can save land space.

4.3 Section C: Attitudes towards Cremation

Table 4.3: Attitudes towards cremation

Attitude variable	**Participant response**			**Preferred response**	**Score**
		n	**%**		
Q12. Would you consider cremation for yourself or loved ones?	YES	6	20.0	**YES**	**0.200**
Q13. Do religious beliefs influence your attitude towards cremation?	YES	24	80.0	**YES**	**0.800**
Q14. Do you believe that cremation is a respectful way of to handle a dead person?	NO	19	63.3	**NO**	**O.633**
Q15. Do you think that cremation can lead to loss of cultural traditions?	YES	24	80.0	***YES***	**0.800**
Q16. Do you think cremation can be used to conceal crimes?	YES	13	43.3	**YES**	**0.433**
Q17. Do you believe that promoting	YES	23	76.7	***YES***	**0.767**

cremation could help to address land scarcity in Manhenga town?	
TOTAL ATTITUDE SCORE	**3.633**

From table 4.3 the attitude score is 3,633 out of 5 meaning the percentage attitude score is 72, 66% which is quite good. However the majority of the people (80%) were against cremation of their body as only 20% considered cremation. Most of the respondents (80%) agreed that their attitude towards cremation is influenced by their religious beliefs. A noticeable number (63, 3%) showed that cremation is not a respectful way to handle a dead person. Majority of the population (80%) believed that cremation leads to loss of cultural traditions and a few 43, 3 % knew that cremation can be used to conceal crimes. Most of the participants (76, 7%) indicated that they believe that cremation can address land scarcity in Bindura town.

4.4. Section D: Practices towards Cremation

Table 4.4: Practices towards cremation

Practices Variable	Participant Responses			Preferred Response	Score
		n	%		
Q18. Have you or anyone in your family, community ever used cremation as a method of body disposal?	YES	4	13.3	**YES**	**0.133**
Q19. Have you ever faced resistance from family or community when suggesting cremation?	YES	3	10.0	**YES**	**0.100**
Q20. Have you ever attended a cremation service or visit a crematorium?	YES	4	13.3	**YES**	**0.133**

Q21. Have you ever made inquiries about the cost of cremation?	YES	0	0	**YES**	**0**
Q22. Do you think the government should consider cremation as an environmental measure?	YES	17	56.7	**YES**	**0.567**
Q23. Do you encourage community members to consider cremation for environmental reasons?	YES	8	26.7	**YES**	**0.267**
TOTAL PRACTICES SCORE					**1.200**

According to table 4.4, the total score for practices is 1.2 out of 5 meaning the percentage practice score is 24% which is quite poor indicating a low level of practicing cremation. Only 4 out of a possible of 30 participants (13, 3%) indicated that they practiced cremation as a method of body disposal.3 out of 30 participants (10%) highlighted that they did face resistance from family or community when suggesting cremation. A few number 13, 3% had attended a

cremation service or visit a crematorium and no one (0%) had made inquiries about the cost of cremation. However 56, 7% of the participants indicated that the government should consider cremation as a burial method, although a few people 8 (26, 7%) highlighted they would encourage community members to consider cremation for environmental reasons.

4.5 Relationship between KAP and Socio-Demographic Variables

Table 4.5: Relationship between KAP and Socio-Demographic variables

Socio-Demographic variable *Question	**Chi– Square Tests**	
	Pearson Chi-Square **Value**	Pearson Chi-Square Asymp.Sig **(p-value)**
Gender * Do you believe that cremation is a respectful way of to handle a dead person?	$\chi2 = 7.444$	p= 0.024
Age * Have you ever heard of cremation as a method of body disposal?	$\chi2 = 19.908$	p=0.011
Age * Do you know of any laws or regulations regarding cremation in Zimbabwe?	$\chi2 = 19.447$	p=0.130
Education*Have you or anyone in your family, community ever used cremation as a method of body disposal?	$\chi2 = 7.972$	p=0.047
Education*Have you ever faced resistance from family or	$\chi2 = 8.788$	p=0.032

community when suggesting cremation?		
Education*Have you ever attended a cremation service or visit a crematorium?	$\chi 2 = 7.972$	p=0.047
Education* Do you think the government should consider cremation as an environmental measure?	$\chi 2 = 16.587$	p=0.011
Environmental Awareness Campaigns* Do you know the process of cremation?	$\chi 2 = 6.254$	p=0.044
Environmental Awareness Campaigns* Would you consider cremation for yourself or loved ones?	$\chi 2 = 7.621$	p=0.022
Environmental Awareness Campaigns* Do you encourage community members to consider cremation for environmental reasons?	$\chi 2 = 7.136$	p=0.028

Table 4.5 shows results analysed by SPSS Pearson Chi-Square tests, there was a significant association between gender and the opinion that cremation is not a respectful way to handle a dead person ($\chi 2$= 7.444, p=0.024). The majority of females disagree with the concept that cremation is a respectful method to handle the dead, while males also indicate a lack of agreement.

A p-value of 0.011 between age and awareness of cremation as a human corpse disposal technique indicated a significant association, with the majority of people in the age groups 26-34 years and over 50 years knowing that cremation can be used for human body disposal. There was a significant association between age and knowledge of cremation laws and regulations in Zimbabwe ($\chi 2$ = 19.447, p=0.0130), with the over-50 age group leading the proportion of those who did not have this information, followed by the 18-25 age group. However, the 26-34 age group was more informed about cremation laws compared all other age groups.

The cremation practice of the deceased in a participant's family or community showed a significant association with education level ($\chi 2$ = 7.972, p=0.047).Most of the people did not practice cremation despite their education levels nevertheless, only a handful (4 out of 30) of those who did not have education responded that they had this experience. Cremation was shown to be significantly associated with contradiction from families or communities ($\chi 2$ = 8.788, p=0.032).The biggest numbers were from participants who had no formal education or had attained secondary school. Education and the participants practice of attending a cremation service or visiting a crematorium had a significant association ($\chi 2$ = 7.972, p=0.047).Most people had never attended a cremation service or visit the crematorium as shown by high numbers from participants with none education and those with secondary level education. However a few acknowledged that they did take part in the cremation service, the four participants with no formal education. The acceptance of cremation as an environmental solution by the government showed a significant association with education ($\chi 2$ = 16.587, p=0.011). The majority of individuals who attained secondary level education agreed that the government must embrace cremation.

Participating in environmental awareness campaigns had a significant association with the knowledge of the cremation process ($\chi 2$ = 6.254, p=0.044) as the majority of participants without it did not know how to cremate a human body. The majority of participants (19 out of 30) who did not participate in any environmental awareness campaign weren't in agreement to

urge community members to practice cremation, indicating a significant association ($\chi 2$ = 7.136, p=0.028).

CHAPTER FIVE: DISCUSSION OF RESULTS

5.0 Introduction

This chapter discusses the results and findings presented in Chapter 4, comparing them to existing literature.

5.1 Knowledge on Cremation

From the study, the results indicated that participants had quite good knowledge about cremation (80%).This shows a relatively high level of awareness among participants regarding cremation and its benefits and drawbacks. The majority of participants had heard of cremation as a method of disposing of bodies through the burning of stillborn children at Bindura Hospital, worldwide pandemics (such as the cremation of COVID-19 victims in European nations), and the use of electronic devices (such as televisions and cellphones) where they are exposed to Indian or Western cultures. This corresponds to a study done by Postill et al. 2020 in Ontario, Canada's southernmost province where a high number of cremations 39,760 due to COVID-19 cases took place and people got knowledge about the practice.

Although most people were aware of cremation, 53.3% of them were uncertain of how it is carried out. As a result, they were unaware of where cremations are performed in Zimbabwe, how much heat is needed, what the end products of the cremation process are, and what happens to ashes. Most of the participants (76, 7%) indicated that they did not know of any laws or regulations regarding cremation in Zimbabwe which is the Burial and Cremation Act [Chapter 5:03]. This is due to the fact that cremation is not a regular practice in rural areas and that there are no campaigns, education, or awareness initiatives about cremation offered in primary, secondary, or in the community. This is consistent with a research by Hove et al., 2024, which demonstrates that although cremation rates had increased substantially in South Africa's Western Cape Province, the numbers were still rather low in areas where the majority of the population is black.

Most participants knew that cremation utilises fewer resources than conventional burial techniques since they use common funeral policies, such as Nyaradzo and Doves Funeral Policy, which deduct money from their monthly pay cheques and are costly. Another reason is that they are aware of the expenses associated with traditional burial, such as the cost of coffins, the cost of graves in cemeteries like Chipadze cemeteries, and the cost of graveyard maintenance, such as tombstones and other rites. When compared to cremation, this makes it

more affordable. This is consistent with a study conducted in 2023 by Masona and Gwisai, which found that in Bulawayo, direct cremation is less expensive than burying a deceased person without a funeral policy. This is because funeral expenses include mortuary fees, coffins, food, transportation, and grave costs and, the cost of purchasing a cemetery site for burial increased from the start of 2021.The cost of burying an adult non-Hindu Zimbabwean ranges from ZWL$ 6130 to ZWL$14 300, which is only for the gravesite and excludes transportation, mortuary fees, coffins and food. The highest cost of cremating an adult Zimbabwean resident was ZWL$ 18,385.

In contrast to traditional burials, half of the population pointed out that cremation can lower the risk of environmental contamination. Some people stated they had trouble burying their loved ones at Chipadze Cemetery because the dug graves contained water with an extremely foul odour, and on top of this, lay a layer of fats. Additionally other participants stated that they are not permitted to dig wells for domestic water use other than graves due to the detrimental effects caused by decomposing dead human bodies buried in the ground. This aligns with the study by Franco et al., 2022, which proved that traditional burial results in the production of ions, in the form of organic and heavy metals, bacteria, fungi, and viruses, which spread along with the soil and underwater.

The majority (76, 7%) of the participants were aware that cremation can save land space as they reported now the Chipadze cemetery is said to be full, and cremating the body will reduce it to small amounts of ash easy to handle. This is consistent with a 2008 research by Shoko that found a lack of burial space, particularly in cities, as a result of Zimbabwe's rising HIV/AIDS-related death rate.

5.2: Attitudes towards Cremation

The results indicated that the participants' attitudes towards cremation was largely negative as only 20% considered cremation after their death because of several reasons which include others believed that they didn't want their bodies burned here on earth and again in hell in the afterlife, so they wanted to be buried next to their family ancestors so that their descendants would know where they are buried and preserve their sacred sites, ancestral family, and tribe name. This is consistent with a study by Zondi & Zwane (2014) that demonstrated that African tribes believe that death is not the end of a person's journey; rather, a deceased person enters the afterlife and serves as an ancestor for the family, so it is crucial that their body be preserved and that they receive a fitting funeral.

The majority of those interviewed indicated that their views on cremation are shaped by their Christian faith, as they want to be raised from the grave and believe in life after death.The majority of the population believed that cremation is not a respectful way to handle a dead person and that cremation leads to loss of cultural traditions as it is contrast with the Shona customs that practice rituals at sacred sites 'graves' e.g. "Kurova guva" bringing back the spirit of the dead home and will result in bad fortunes as they will be no spiritual guidance from ancestral spirits as they are not appeased. This is consistent with the research conducted by Shoko (2008), which showed To bring the departed relative's soul home after a time of temporary amnesia and roaming in an unfamiliar environment, a rite known as kugadzira mudzimu (also called kurova guva) is conducted a year after the relative's death. The spirit is then acknowledged as a complete member of the Karanga community by virtue of being returned home. The spirit will punish the family severely if this ceremony is not performed, causing them to suffer from chronic illnesses and ailments like leprosy, fits, sterility, mental sickness, or misfortune and death.

Only a few population knew that cremation can be used to conceal crimes this is because most of them did not know the full process of cremation and how, where it is done. Most of the participants (76, 7%) indicated that they believe that cremation can address land scarcity in Bindura town as they had the first hand information of Chipadze cemetery where their loved ones are buried which is running short of space. This is further supported by a study by Shoko, 2008 which found that the rise in HIV/AIDS-related deaths in Zimbabwe has led to a scarcity of burial space, particularly in urban areas.

5.3: Practices towards Cremation

Findings from this study revealed an overall of 24% practice score percentage which is quite poor indicating a low level of practicing cremation. Majority of the population 86,7% attested that in their family and community they never used cremation as a method of body disposal, this is similar to the study by Masango, 2005 that showed many South Africans still struggle with cremation due to opposition to significant changes in the religious rites and secular practices surrounding death. Emotional associations against the idea of burning the dead as well as the quick destruction of the sacred body or the mental image of the procedure may discourage some people from considering cremation. However, four out of thirty participants (13, 3%), stated that certain members of their family and community had performed cremation. For example, at Bindura Hospital, stillbirths are burned in the incinerator together with waste and rugs.

Most of the participants (90%) highlighted that they did not face resistance from family or community when suggesting cremation as they have never spoke about cremation because of their Christian values and Shona customs. This is supported by Shoko, 2008 in a study which found that Africans would prefer to use all available resources for a traditional funeral rather than cremation. The results indicated that no participants made inquiries about the cost of cremation and only a few 13, 3% had attended a cremation service or visit a crematorium. According to these older ladies over 50 years, they used to work in Belvedere a low-density suburban area, where their white man employer was cremated.

More than half of the participants indicated that the government should consider cremation as a burial method due to its advantages of saving space, low costs and it is associated with less environmental pollution. Most of the participants 73, 3% highlighted they wouldn't encourage community members to consider cremation despite its named advantages and environmental benefits due to the above discussed negative attitudes towards cremation. This corresponds to the study conducted by Zondi & Zwane, 2014 among Zulu people, it discovered that, when it came to the cremation issue, participants' responses tended to be influenced by cultural considerations. For instance, the following replies were found:

"As a Zulu man, I totally disagree with that. We grew up knowing that a dead person becomes an idlozi who may be consulted in times of need. How then, can that happen when one has been turned into ashes?"

"Since when have Zulu people started to put price to their loved ones? Even the poor of the poorest have afforded to bury their loved ones because death is also a communal ritual. In the spirit of Ubuntu neighbours are not going to sit back and watch as the family next door struggles about burying their loved one"

5.4: Relationship between KAP and Socio-Demographic Variables

Findings of the study indicated that, there was a significant association between gender and the opinion that cremation is not a respectful way to handle a dead person. The majority of people, both men and women, disagreed with the idea that cremation is a dignified way to deal with the dead because it goes against Shona culture, its customs, and its values. Additionally, because cremation eliminates many rituals, it shows lack of reverence for sacred sites and ancestors.

Results from the study indicated that more people from age groups 26-34 years and over 50 years knew that cremation can be used for human body disposal. This is due to the fact that the majority of women in Zimbabwe give birth between the ages of 26 and 34, so they are aware of the practice of cremating stillborn children in hospitals. Additionally, older people are aware of these stillbirth cases, and some have lost more family members, employers, and age-mates and chose the cremation method. The age group of 26-34 was more informed about cremation laws compared to other age groups because of digital literacy thus familiarity with online resources e.g. presentations from The Institute of Funeral Business Management , Zimbabwe, allowing them to access information about cremation laws.

The cremation practice of the deceased in a participant's family or community and its resistance from families, community showed a significant association with education level as most of the people did not practice cremation despite their education levels. This is due to Christian values and Shona customs. Education and the participants practice of attending a cremation service or visiting a crematorium had a significant association ($\chi 2 = 7.972$, $p=0.047$).Most people that had attended a cremation service or visit the crematorium had none formal education. This may be the result of women and girls being denied the opportunity to attend schools in the past, which caused them to work for white people who practiced cremation since they had the necessary credentials. The results from the study highlighted that there is a relationship between acceptance of cremation as an environmental solution by the government with education .The majority of individuals who attained secondary level education agreed that the government must embrace cremation, this is where they might have learned about different burial methods and religious beliefs in different religions.

Knowledge of the cremation process had a significant relationship with participation in environmental awareness programs, since most people who did not participate in them did not

know how to cremate a human body. This is because they do not know about the eco-friendly or sustainable burial practices (green burial) and their benefits. Another relationship was that of most participants who did not participate in any environmental awareness campaigns weren't in agreement to urge community members to adopt cremation for environmental reasons because they lack knowledge about environmental contamination associated with traditional burial practices and potential environmental benefits of cremation.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

Conclusion

The study concludes that among the participants, knowledge on cremation was quite good, attitudes negative and practice extremely negative guided by the strong Christian beliefs and Shona culture. Thus even people have vast knowledge know about cremation as long as their attitude is negative and there is no a radical shift in perceptions about the dead loved ones cremation cannot be adopted in the community.

Recommendations

For cremation to be widely adopted as a sustainable burial method in Nyanhehwe village, village residents must participate in more environmental awareness campaigns, the government should integrate cremation into the education curriculum from primary level to tertiary level education and cremation awareness campaigns should be done in communities, government should build more crematoriums, publish its costs of services and disseminate cremation benefits to the public from local authorities.

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APPENDICES

APPENDIX 1: APPROVAL LETTER

DEPARTMENT OF ENVIRONMENTAL SCIENCE

Bag 1020 BINDURA, Zimbabwe
Tel: 263 - 71 – 6505
Cell :0778371588
Email : vamugure@gmail.com

BINDURA UNIVERSITY OF SCIENCE EDUCATION

14 May 2025

Dear Sir/Madam

REQUEST FOR PERMISSION TO COLLECT DATA FOR ACADEMIC RESEARCH PROJECT

PROJECT TITLE: ***A STUDY OF THE KNOWLEDGE, ATTITUDES AND PRACTICES ON CREMATION AS AN ENVIRONMENTAL MEASURE.THE CASE OF MANHENGA PERI-URBAN TOWN IN BINDURA***

ACADEMIC SUPERVISOR: Mr Nyamugure

This letter serves to inform you that **TAKUNDA MANDIZHA, Registration Number (B211683B)** is a fourth year student at Bindura University of Science Education, in the Department of Environmental Science. During his fourth year of study he is supposed to do a research project in his area of specialisation.

Please assist in any possible way. Data collected will be used for academic purposes only and will not be published without your prior consent.

Thank you for your assistance.

Yours faithfully.

CHAIRPERSON
Department Of Environmental Science
Faculty Of Agriculture And Environmental Science
Bindura University Of Science Education
P. BAG 1020, BINDURA
ZIMBABWE
OFFICIAL

Mr T. Nyamugure
DEPARTMENT OF ENVIRONMENTAL SCIENCE

APPENDIX 2: RESEARCH QUESTIONNAIRE

RESEARCH QUESTIONNAIRE

My name is Takunda Mandizha, a Bindura University of Science and Education fourth year student studying an Honours Degree in Safety, Health and Environmental Management. I am conducting **A STUDY OF THE KNOWLEDGE, ATTITUDE, and PRACTICES ON CREMATION AS AN ENVIRONMENTAL MEASURE IN MANHENGA PERI-URBAN TOWN BINDURA** as my research project. Your input will guide the research and enhance understanding on cremation as an environmental measure. Participation is completely voluntary, and you are free to withdraw at any time without any consequences. I kindly ask that you respond to all questions truthfully. Thank you for your time and contribution.

INSTRUCTION TO RESPONDENTS

- Make sure to tick all the boxes without writing your name on any part of the paper.

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

1. Gender: Male ☐ Female ☐
2. Age (years): 18-25 ☐ 26-34 ☐ 35-40 ☐ 41-49 ☐ 50+ ☐
3. Highest Education Level: Primary ☐ Secondary ☐ Tertiary ☐
4. What is your religious affiliation? Christianity ☐ Islam ☐ ATR ☐ No religion ☐
5. Have you ever participated in any environmental awareness campaigns?
   Yes ☐ No ☐

	SECTION B: KNOWLEDGE ON CREMATION	
Number	**Knowledge**	**Answers**
6.	Have you ever heard of cremation as a method of body disposal?	Yes ☐ No ☐ Don't know ☐
7.	Do you know the process of cremation?	Yes ☐ No ☐ Don't know ☐
8.	Do you know of any laws or regulations regarding cremation in Zimbabwe?	Yes ☐ No ☐ Don't know ☐
9.	Are you aware that cremation uses less resources than traditional burial methods?	Yes ☐ No ☐ Don't know ☐

10.	Do you think cremation can reduce the risk of environmental contamination as compared to traditional burials?	Yes ☐ No ☐ Don't know ☐
11.	Are you aware that cremation can save land space?	Yes ☐ No ☐ Don't know ☐
	SECTION C ATTITUDES TOWARDS CREMATION	
12.	Would you consider cremation for yourself or loved ones?	Yes ☐ No ☐ Don't know ☐
13.	Do religious beliefs influence your attitude towards cremation?	Yes ☐ No ☐ Don't know ☐
14.	Do you believe that cremation is a respectful way of to handle a dead person?	Yes ☐ No ☐ Don't know ☐
15.	Do you think that cremation can lead to loss of cultural traditions?	Yes ☐ No ☐ Don't know ☐
16.	Do you think cremation can be used to conceal crimes?	Yes ☐ No ☐ Don't know ☐
17.	Do you believe that promoting cremation could help to address land scarcity in Manhenga town?	Yes ☐ No ☐ Don't know ☐
	SECTION D: PRACTICES TOWARDS CREMATION	
18.	Have you or anyone in your family, community ever used cremation as a method of body disposal?	Yes ☐ No ☐ Don't know ☐
19.	Have you ever faced resistance from family or community when suggesting cremation?	Yes ☐ No ☐ Don't know ☐
20.	Have you ever attended a cremation service or visit a crematorium?	Yes ☐ No ☐ Don't know ☐
21.	Have you ever made inquiries about the cost of cremation?	Yes ☐ No ☐
22.	Do you think the government should consider cremation as an environmental measure?	Yes ☐ No ☐ Don't know ☐
23.	Do you encourage community members to consider cremation for environmental reasons?	Yes ☐ No ☐ Don't know ☐